

TRAIT EI, TEACHER SELF-EFFICACY AND JOB SATISFACTION

Secondary School Teachers' Trait Emotional Intelligence, Job Satisfaction, and Self-Efficacy

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Dear Akhyerkye Tabigat,

This letter now confirms that your research project entitled: Secondary School Teachers' Trait Emotional Intelligence, Job Satisfaction, and Self-Efficacy has been approved by the Graduate School of Education Ethics Committee of Nazarbayev University.

You may proceed with contacting your preferred research site and commencing your participant recruitment strategy.

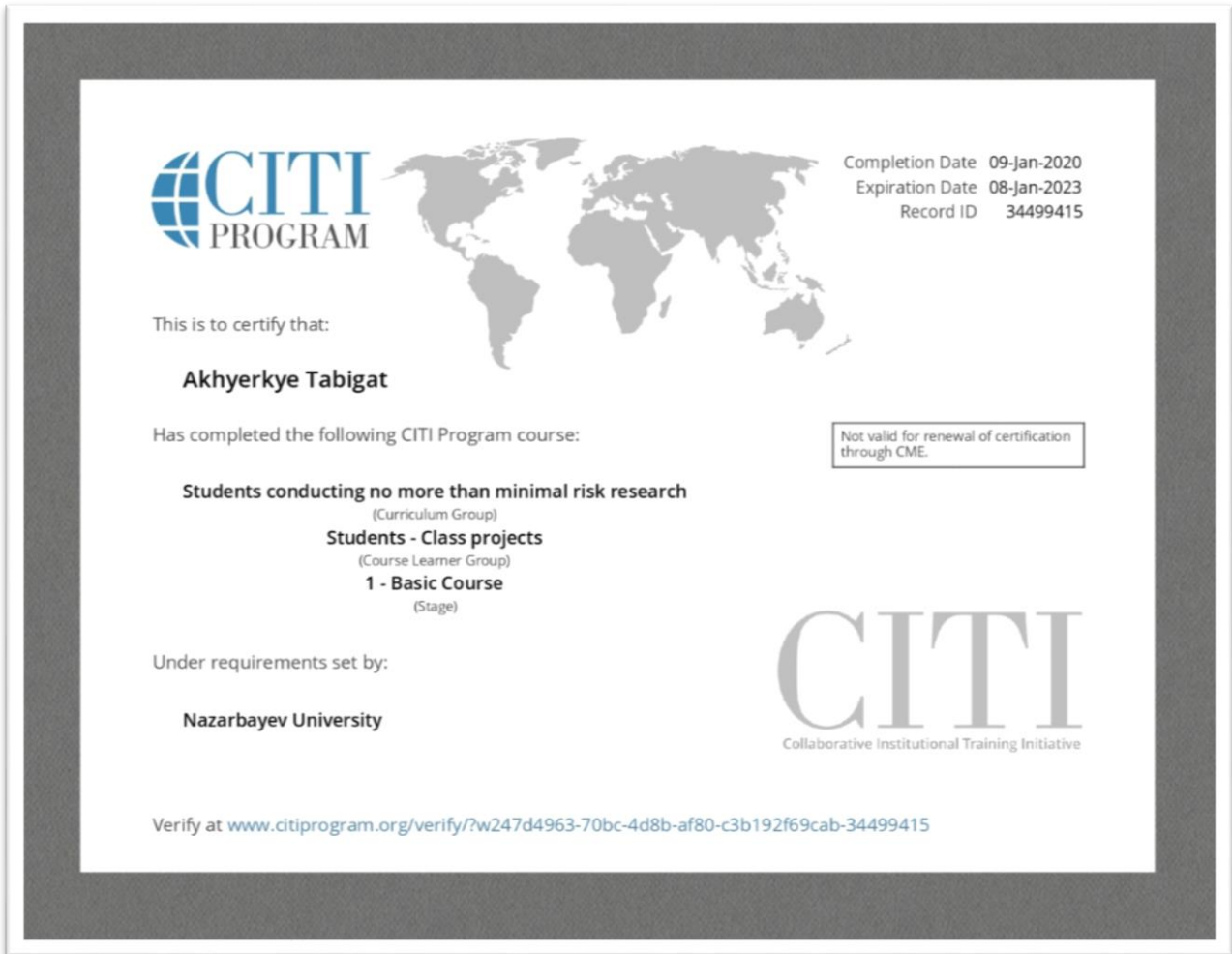
Yours sincerely,

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Secondary School Teachers' Trait Emotional Intelligence, Job Satisfaction, and Self-Efficacy

Abstract

Research concerned with the relationship between trait emotional intelligence (EI) and academic success of both students and teachers has been an emerging topic in educational settings in the last decade. Although a vast body of studies promotes trait emotional intelligence as a reasonable factor contributing to students' success, little is known about teachers' associated success, particularly in Central Asian countries. This research study aims to identify the relationship between the trait emotional intelligence, job satisfaction, and self-efficacy of secondary school teachers in the context Nur-Sultan city, Kazakhstan. The study adopts a cross-sectional research design and makes use of descriptive statistics, confirmatory factor analysis (CFA), and structural equation modelling (SEM). The Trait Emotional Intelligence Questionnaire Short Form (TEIQue-SF) and the OECD questionnaires were administered to a sample of 107 secondary school teachers from a total of 11 separate public schools ($n = 97$) and three separate private schools ($n = 10$). The findings of this study demonstrate that Well-being, Self-control, Self-efficacy (Instructional Strategies), Self-efficacy (Classroom Management), and Job satisfaction factors are reflective of the cultural context and capture the experiences of teachers in the Kazakhstani context. Though the findings are not conclusive, a better understanding and exploration of the concepts may be carried out with a larger sample of teachers from multiple regions inside Kazakhstan and in other post-Soviet jurisdictions. The results also indicate a strong correlation between Self-efficacy for classroom management and instructional strategies. Considering the strong correlation between trait emotional intelligence factors, Well-being and Self-Control and Job satisfaction, it is proposed that a key policy priority should therefore be to

plan for the long-term support for the well-being and self-control of teachers in Kazakhstani society in order to increase their job satisfaction level of retention.

Keywords: trait emotional intelligence (EI), teacher self-efficacy, job satisfaction

**Орта мектеп мұғалімдерінің сипаттық эмоционалды зияткерлігі, жұмысқа
қанағаттануы және өзіндік тиімділігі**

Аңдатпа

Оқушылар мен мұғалімдердің сипаттық эмоционалды зияткерлігі (ЭЗ) мен академиялық жетістіктерінің арасындағы қарым-қатынас туралы зерттеулер соңғы он жылда білім беру жүйесінде жаңа тақырыптардың бірі. ЭЗ-лікке байланысты зерттеулердің ауқымды бөлігі сипаттық эмоционалды зияткерліктің оқушылардың академиялық жетістіктеріне ықпал ететін фактор ретінде насихатталғанымен, мұғалімдердің академиялық жетістігіне қалай әсер ететіні туралы мәлімет аз екенін, әсіресе, Азия елдерінде зерттелмегенін көрсетеді. Бұл зерттеу жұмысы Қазақстан мемлекеті Нұр-Сұлтан қаласының жалпы білім беретін мектеп мұғалімдерінің сипаттық эмоционалды зияткерлігі, жұмысқа қанағаттануы және өзіндік тиімділігі арасындағы байланысты анықтауға бағытталған. Зерттеу көлденең қималық зерттеу дизайнын қолданады, сонымен қатар растаушы факторлық талдау (CFA) және құрылымдық тендеулерді модельдеуді (SEM) сияқты сипаттамалық статистиканы пайдаланады. Бұған қоса сипаттық эмоционалды зияткерлік сауалнаманың қысқаша нысаны (TEIQue-SF) және ЭЫДҰ сауалнамасы қолданылды. Сауалнамаға Нұр-Сұлтандағы үш жекеменшік және он бір жалпы орта мектептен барлығы 107 мұғалім қатысты. Зерттеу нәтижелерінде әл-ауқат, өзіндік бақылау, өзіндік тиімділік (оқыту стратегиялары), өзіндік тиімділік (сыныпты басқару) және жұмысқа қанағаттану факторлары Қазақстандық мұғалімдердің тәжірибесі мен мәдениет контекстінде ықпалды факторлар ретінде тауылды. Нәтижелер түпкілікті емес болғандықтан, тұжырымдамаларды жақсырақ түсіну үшін Қазақстанның көптеген аймақтарындағы және басқа посткеңестік елдердегі мұғалімдердің үлкен үлгісімен ары қарай тереңірек

зерттелуін қажет етеді. Нәтижелер, сонымен қатар, өзіндік тиімділіктің сыныпты басқару мен оқыту стратегиялары арасындағы маңызды корреляцияны көрсетеді. Әл-ауқат пен жұмысқа қанағаттану арасындағы маңызды корреляцияны ескерсек, Қазақстандық қоғамдағы мұғалімдердің әл-ауқатына және өзін-өзі бақылауына ұзақ мерзімді қолдау көрсетуді жоспарлау саясаты үшін пайдалы болуы мүмкін. Осылайша мұғалімдердің жұмысқа қанағаттану деңгейін жақсартуға және өз саласында қалуына септігін тигізеді деп тұжырымдайды.

Кілт сөздер: сипаттық эмоционалдық зияткерлік (ЭЗ), мұғалімнің өзіндік тиімділігі, жұмысқа қанағаттану

**Черты эмоционального интеллекта, удовлетворенности работой и
самоэффективности учителей средней школы**

Абстракт

Исследования, связанные с взаимосвязью между чертами эмоционального интеллекта (ЭИ) и академической успеваемостью как учащихся, так и учителей, стали новой темой в образовательных учреждениях в последнее десятилетие. Несмотря на то, что большое количество исследований пропагандирует черты эмоциональный интеллект как фактор, способствующий успеху учащихся, мало что известно об их влиянии на успех учителей, особенно в странах Центральной Азии. Это исследование направлено на выявление взаимосвязи между чертами эмоционального интеллекта, удовлетворенностью работой и самоэффективностью учителей средней школы в контексте города Нур-Султан, Казахстан. В исследовании принят межсекторальный дизайн исследования и используются описательная статистика, подтверждающий факторный анализ (CFA) и моделирование структурными уравнениями (SEM). Кроме того, использовались краткая форма анкеты черт эмоционального интеллекта (TEIQue-SF) и анкеты ОЭСР. Всего в опросе приняли участие 107 учителей из средних школ: трех частных и 11 государственных школ города Нур-Султан. Результаты этого исследования показывают, что факторы благополучия, самоконтроля, самоэффективности (учебные стратегии), самоэффективности (управление классом) и удовлетворенности работой отражают культурный контекст и отражают опыт учителей в казахстанских контекст. Хотя результаты не являются окончательными, лучшее понимание и изучение концепций может быть проведено с большей выборкой учителей из разных регионов Казахстана и других постсоветских юрисдикций. Результаты также демонстрируют сильную корреляцию между самоэффективностью для управления

классом и учебными стратегиями. Принимая во внимание сильную корреляцию между личностными факторами чертами эмоционального интеллекта, благополучием, самоконтролем и удовлетворенностью работой, предлагается, чтобы ключевым политическим приоритетом было планирование долгосрочной поддержки благополучия и самоконтроля учителей в казахстанском обществе с целью повышения уровня их удовлетворенности работой и удержания учителей.

Ключевые слова: черты эмоционального интеллекта (ЭИ), самоэффективность педагога, удовлетворенность работой.

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1. Introduction

1.1 Research Background

1.1.1 Trait Emotional Intelligence

Research concerned with the relationship between trait emotional intelligence (EI) and academic success has been an emerging topic in educational settings in the last decade.

Specifically, emotional intelligence has not only been considered as a crucial skill in workplace but it has also been recognized as a critical element in the academic life of both students and teachers (Bukhari & Khanam, 2016; Kotsou et al., 2018). Although a vast body of studies promotes trait emotional intelligence as a reasonable factor contributing to students' success, little is known about teachers' associated success, particularly in Central Asian countries.

In general, emotional intelligence (EI) is the skill associated with showing, recognizing, controlling, and perceiving one's own emotions and the influence of the emotions of others (Kotsou et al., 2018). Petrides and colleagues (2001) further established the concept of trait EI by separating it from general EI. For this reconceptualization, they categorize EI into two predominant constructs: trait EI and ability EI. Ability EI refers to the use and expression of emotions and regulation and integration of emotional information (Mayer et al., 2008). In comparison, trait EI (or emotional self-efficacy) refers to our emotional impressions of our inner world (Petrides et al., 2007).

Numerous recent studies have emphasized the influential role of trait EI in teachers' work practices. Multiple studies have suggested that teachers with higher trait EI work more effectively since they are more content with their occupations which can result in improved practice. For instance, Fiorilli et al. (2019) and Platdisou (2010) note the importance of higher

trait EI when coping with higher job demands and workplace stress as long as they consider job satisfaction as a moderator of teachers' work practices.

For that reason, understanding the role that emotional intelligence has on teacher success and performance in such contexts may be an important finding for the development of initial and ongoing teacher training and related policy.

1.1.2 Job Satisfaction & Self-Efficacy of Teachers

The key outcomes of this study are *job satisfaction* and *self-efficacy* of teachers. According to Locke (1976), job satisfaction is an individual's experiences of positive emotional states derived from their appreciation of the job. It is also considered a psychological dimension in accordance with the OECD well-being of the teacher framework (OECD, 2020). Job satisfaction of teachers can positively influence their communications with students, and it is likely to lead to increased engagement, motivation, enjoyment, and ultimately an increased likelihood of remaining in the profession. On the other hand, a low level of satisfaction is probable to result in frustration. It is likely that this experience may result in difficulty guiding, motivating, and controlling activities (Madigan & Kim, 2021).

The self-efficacy of teachers is described as "an evaluation of their capabilities to accomplish the desired results of student engagement and learning, especially among tough or unmotivated students" (Tschannen-Moran & Hoy, 2001, p. 783). It is believed that teacher self-efficacy has a profound effect on not only the classroom environment and processes but also on the quality of student-teacher relationships. For instance, students with more efficacious instructors are likely to have higher-quality student-teacher interactions, which often lead to more effective classrooms (Tschannen-Moran & Hoy, 2001).

1.2 Research Problem

Some studies suggest that nearly half of novice teachers leave the profession within the first five years (e.g., Jerrim & Sims, 2020). Moreover, Chambers et al. 2019, who conducted a large-scale comprehensive online occupational health study in February 2012 among public school teachers, noted that teachers who have fewer years' experience, higher levels of stress, weaker mental health, and who perceive lower organizational support and trust are more likely expected to quit their job. In other words, low job satisfaction levels might be logically connected to or be the cause of teacher turnover. For instance, to support this view, Madigan and Kim (2021) pointed out that teachers will become progressively dissatisfied if they are unable to gain what they regard to be critical in their professions.

Meanwhile, one of the most common and unique issues in the Kazakhstani education system has also been the attrition of young teachers and their transfer to alternate industries heretofore. For instance, according to the 2018 TALIS survey, 26% of teachers in Kazakhstan reported that they seriously considered leaving the teaching profession within the next five years (OECD, 2020). Nonetheless, in current years, this attitude of teachers may have changed due to the implementation of new educational reforms related to the teacher development, such as salary increases, a growing number of scholarship allocations for the students in the field of pedagogy, and internship opportunities in the leading scientific centres of the world for young teachers and scientists of the country (Dovgolenko, 2021). Therefore, as presented as part of the research background, to better understand the concept of teacher attrition in the country, the current study attempt to investigate the role that trait EI and teacher self-efficacy has on teacher job satisfaction.

1.3 Research Purpose

This research study aims to identify the relationship between the trait emotional intelligence, job satisfaction, and self-efficacy of secondary school teachers in the context of Nur-Sultan city, Kazakhstan. Based on this research purpose, the following three research questions are posed.

1.4 Research Questions

RQ1: How are teachers' trait emotional intelligence, self-efficacy, and job satisfaction best measured in the Kazakhstani context?

RQ2: What is the relationship between Kazakhstani teachers' trait emotional intelligence, self-efficacy, and job satisfaction?

RQ3: To what extent does teachers' trait emotional intelligence predict teacher self-efficacy and job satisfaction?

1.5 Significance of the Research

A considerable amount of literature has been published on trait EI's effects on teachers' job satisfaction and self-efficacy in Western countries. These studies have established the relationship between these factors by suggesting that trait EI is essential for reducing workplace stress and minimizing work pressure (Li et al., 2018), decreasing burnout syndrome among teachers (Platsidou, 2010), and increasing personal competence (Fiorilli et al., 2019), all of which are seen to contribute to the well-being of teachers. The studies have also revealed the importance of building socially supportive workplace conditions and implementing EI training for teachers at schools. Such research has suggested that such strategies could be productive in preventing teachers from burnout (Ju et al., 2015; Platsidou, 2010; Yin et al., 2013).

Furthermore, currently, the relationship between teacher self-efficacy and job satisfaction have emerged as widely debated issues in the field of education since teacher self-efficacy is proposed as a moderator and predictor of job satisfaction (Collie et al., 2012). However, there exists a dearth of research about the role of trait EI on teachers' job satisfaction and self-efficacy in Asian countries. Therefore, understanding the role that trait EI has on teacher job satisfaction and self-efficacy represents a potentially important new area of research that may inform teacher training, policy, and practice in Kazakhstan, particularly given the lower levels of teacher retention in the country.

1.6 Outline of the Research

The thesis is organized into six chapters. The current chapter, Introduction, aims to acquaint the reader with the topic, research background, and study context. It also provides the rationale for the study and introduces the research purpose, questions, and significance.

The next chapter, Literature review, overviews the existing literature on trait emotional intelligence and its relationship with teachers' job satisfaction and self-efficacy. In this chapter, a cross-cultural variation of trait EI is also discussed. The Methodology chapter explains the research method and design, as well as the sampling strategies and statistical analysis while outlining the rationale for each procedure. The Results chapter overviews the findings of the study concerning each research question. The Discussion chapter discusses the research findings, relates them to the findings from the literature, and makes recommendations for further research. Finally, the last chapter, Conclusion, summarizes the thesis.

2. Literature Review

The purpose of this chapter is to provide review of the literature related to the focus of the current research study. Boote and Beile (2005) state that “a researcher cannot perform significant research without first understanding the literature in the field” (p. 3). Therefore, prior to embarking upon a review of the literature, it is important to provide a framework for investigating, summarizing, and presenting the literature focused on a particular area of interest. Cooper’s (1988) taxonomy of literature reviews provides a useful set of criteria to consider prior to undertaking such a summary. Upon review of the application of this taxonomy (Randolph, 2009), this author makes use of Table 1 to identify and set parameters for the literature review at hand. For each of the six characteristics of the literature review, this author has underlined the specific categories chosen for the current thesis (Table 1).

Table 1*Parameters of the Literature Review*

Characteristic	Categories
Focus	<u>Research outcomes</u> Research methods Theories Practices or applications
Goal	Integration (a) Generalization (b) Conflict resolution (c) Linguistic bridge building Criticism <u>Identification of central issues</u>
Perspective	<u>Neutral representation</u> Espousal of position
Coverage	Exhaustive Exhaustive with selective citation Representative <u>Central or pivotal</u>
Organization	Historical <u>Conceptual</u> Methodological
Audience	Specialized scholars <u>General scholars</u> <u>Practitioners or policymakers</u> General public

Note. Categories underlined and in bold reflect decisions made for the scope of literature reviewed for the current study.

A rationale for the selection of each category is now provided. For focus, “research outcomes” were chosen because attention was given to an analysis and synthesis of studies that focus on research outcomes in the field for the purpose of making conclusions. For the goal, “identification of central issues” was chosen because the primary purpose was to reveal the relevant gaps in the field by critically analysing previous studies and identifying central issues.

For perspective, “neutral representation” was chosen as this author makes an attempt to represent the central quantitative-based literature in an unbiased way. For coverage, “central or pivotal” was selected because key articles and research findings were prioritized for the review. In addition, where possible, meta-analyses and systematic reviews in a field were highlighted. Moreover, the journal articles from established journals with Q-rankings were generally given priority. The review of the literature was written and organized conceptually, therefore, “conceptual” was selected for organization with theories and conceptualizations introduced systematically. Finally, the dissertation literature review was written for general scholars interested in this theory and for the practitioners or policymakers that may consider applying the results of the study in practice.

2.1 Organization of the Literature Review

The literature review begins by providing a conceptual understanding of trait EI, how it is distinct from other forms of EI, and its association with general academic outcomes. Thereafter, the review summarizes research associated with teachers’ trait EI and job practices. At this juncture, the literature review summarizes the findings concerned with cross-cultural variation in trait EI prior to providing a description of the outcomes of the study. Also, it provides the general definitions for teacher self-efficacy and job satisfaction.

2.2 Understanding Trait EI

Emotional Intelligence is the skill associated with showing, recognizing, controlling, and perceiving one’s own emotions and the influence of the emotions of others (Kotsou et al., 2018). In 1990, Salovey and Mayer presented the earliest definition of EI; however, Goleman was the one who provided the most effective and representative definition for the field in 1995 (Fernández-Berrocal & Extremera, 2006). According to Fernández-Berrocal and Extremera,

emotional intelligence can be defined as the extent to which people can recognize, perceive, interpret, and comprehend the implications of their own internal emotional world and its direct influence on themselves and others around them.

After Golman's (1995) early definitional work, Petrides and colleagues (2001) further established the concept of trait EI by separating it from general EI. For this reconceptualization, they categorize EI into two predominant constructs: trait EI and ability EI. Ability EI refers to using and expressing emotions and regulating and integrating emotional information (Mayer et al., 2008). In comparison, trait EI (or emotional self-efficacy) refers to the set of our emotional impressions of our inner world (Petrides et al., 2007). Therefore, in terms of instrumentation, trait EI uses self-report questionnaires based on personality traits, whereas ability EI uses performance-based tests based on cognitive ability. Trait EI has 15 main facets: adaptability, assertiveness, emotion perception, emotion expression, emotion management, emotion regulation, impulse control, relationships, self-esteem, self-motivation, social awareness, stress management, trait empathy, trait happiness, and trait optimism. These 15 facets further correspond to five dimensions such as emotionality, sociability, well-being, self-control, and global trait EI (Petrides et al., 2004).

Previous research has suggested a variety of impacts of EI on people's lives. For instance, based on 18-hours of intensive short-term training on emotional competence, research by Nelis et al. (2011) suggested that EI could enhance social relationships, employability, somatic complaints, and the mental health of people. More recent systematic reviews find comparable results. Based on Kotsou et al.'s (2019) systematic review of 46 studies, it was posited that enhanced EI can improve social relationships, social well-being, performance at work, psychological and even physical health such as somatic disorders, and diabetes levels.

Particularly, the review suggested that EI could improve the quality of coaching, leadership, management, teamwork, and communication skills. Findings from the Kotsou et al. study also suggest that the EI field is fairly new and heterogeneous; therefore, the researchers posit that it is crucial to continue to build upon research studies on this topic. To sum, research in the field of EI suggests that, overall, EI may help people understand their weaknesses, achieve their possibilities, and create healthy interactions with others, which, in turn, may improve the quality of their life.

Furthermore, much of the research on EI, particularly on trait EI, has been focused on students' academic performance. Data from several studies suggest that trait EI is an indicator of both school and university students' academic performance as EI can fulfil students' academic life necessities. According to Bukhari and Khanam (2016), students who have high EI may pass difficult situations more easily with the help of their good adaptability and flexibility. Specifically, Bukhari and Khanam identified the beneficial effects of trait EI on (1) medical students when they encountered demanding medical training situations (Yusoff et al., 2013), and (2) impaired and vulnerable students when they find themselves under pressure due to exhibiting lower levels of academic abilities and facing specific learning challenges (Petrides et al., 2004). Moreover, similar benefits were evidenced by the study of Petrides et al. (2018), which reports that students with higher EI are less likely to be dismissed and expelled from school or university.

On the contrary, several research studies have emerged offering contradictory findings for the benefits of EI. Petrides et al. (2004) argue that high trait EI was related to students' academic performance but only for students with low IQ scores. The authors found that effects were differentiated across the subjects by identifying the impacts only on language subjects but

not on STEM subjects. The findings from Petrides et al. were further supported by a study by Ferrando et al. (2011) who found that IQ plays a key role in students' performance in school while EI could only influence students' mental wellbeing. The authors proposed that the result was associated with the idea that academic performance is primarily a cognitively loaded task, therefore, it is only possible to say that EI can influence the general learning performance of students to handle difficult periods during their academic life.

In summary, much research has focused on the role that EI has on academic performance. Much of these studies, with some exceptions, tend to identify positive effects of improved EI on student performance, social outcomes, and mental well-being. However, it is unclear how this might relate to teachers' EI and the impact of teachers' EI on their students. A summary of the research looking at the relationship between teachers' trait EI and their practice is now provided.

2.3 Relationship between Trait EI of Teachers and their Job Practices

Numerous present studies have emphasized the influential role of trait EI in teachers' job practices. Multiple studies have suggested that teachers with higher trait EI work better since they are more pleased with their occupations which can result in better practice. Supporting this view, Fiorilli et al. (2019) and Platdisou (2010) note its importance when coping with higher job demands and workplace stress as long as they consider job satisfaction as a moderator of teachers' job practices. Li et al. (2018) conducted a study involving 37 principals and 881 primary school teachers from 37 public primary schools in the Chinese province of Hubei. Findings suggested that a higher trait EI can support teachers' job practices in two ways. First, interpersonal emotion may help teachers understand and control others' feelings leading to more effective social interactions. Second, intrapersonal emotion allows teachers to build confidence, and, in turn, manage their teaching job. In addition, a systematic review by Merida-Lopez and

Extremera (2017), based on a sample of 13 articles, argues that trait EI may prevent teachers from burnout and stress, and, in turn, enable them to be involved in additional tasks beyond their regular duties: for instance, drawing upon higher levels of EI, these teachers use more energy to manage stressful behaviours and regulate other's emotions.

The largest studies in the field have only focused on the development of theory and not on the training, application, and practice of trait EI. For this reason, it is unclear how to implement trait EI training at the school level to improve teachers' trait EI. Nevertheless, Ju et al. (2015) suggest implementing productive EI training and building supportive workplace conditions at schools. They believe that such strategies could be effective in preventing teacher burnout and increasing teacher job performance. On the other hand, there are a few studies that provide an exposition of the implementations of EI in general. Nelis et al. (2011) provided an intensive short-term training program to 150 undergraduate students. Findings suggested that emotional competence might be increased through training and may improve people's lives in educational, health, and workplace settings. In contrast, based on 37 general public participants, earlier work in the field revealed that some emotional abilities can be effectively enhanced; however, results from that study also suggested that the enhancement of some EI abilities demands more long-term training (Nelis et al., 2009). A broader perspective has been adopted by Kotsou et al. (2019) which reveals the limitations of effecting long-term change as a consequence of EI training. The authors firstly state that the EI learning process demands some time, and secondly, the authors believe that trait-related consequences can be substantial and may require time to adjust.

In addition, the measurement of trait EI in the aforementioned studies were all based on questionnaires and surveys. This was done as the trait was generally measured by way of self-

report measures, with short and full form instruments, child and adult forms of the TEIQue (Trait Emotional Intelligence Questionnaire), commonly fielded. Moreover, the main limitation in the field is that most empirical studies about the trait EI of teachers have only relied upon primary and secondary school teachers. Such studies primarily only focused on the effect of age, gender, and years of working experience of teachers on levels of trait EI without any examination of the role of trait EI on teacher proficiency. Moreover, to the best of this author's knowledge, no study currently exists on the relationship between trait EI and teacher job satisfaction and self-efficacy in any Central Asian contexts specifically.

On the whole, the following conclusions can be drawn from the present literature: the low level of trait EI of teachers is the factor for the teacher attrition, and it may decrease the levels of job satisfaction. Therefore, trait EI may assume as an essential tool for a successful teaching career.

2.4 Cross-Cultural Variation of Trait EI

Notwithstanding the small number of studies focused directly on the cultural differences of trait EI, there is a general lack of research in the context of teachers' trait EI and cultural variation which assesses teachers' job satisfaction and self-efficacy. Yet, multiple attempts have been made to explore the differences between cultures for EI among some countries. For example, Gökçen et al. (2014) compared levels of EI between individualist with the collectivist societies. The study first investigated the cultural differences between individualist (Britain) and collectivist (Hong Kong) countries looking specifically at trait EI factors such as Self-control, Sociability, Emotionality, and Well-being. Their results suggested that there were crucial cultural differences in trait EI, whereby British nationals scored higher than their Chinese counterparts on all four dimensions. Gökçen et al. also found gender difference in both countries: although

women scored higher on the Emotionality factor, men scored higher on the Self-control factor of trait EI. Overall, the study concluded that personal feelings are not considered as essential in collectivist countries. In the same vein, Nozaki (2018) notes that Asian tradition promotes emotional control whilst European-American tradition promotes open and free emotional expression. Hence, according to the studies, emotional expression itself could reflect the most common cultural difference between Asian and Western cultures.

Gökçen et al. (2014) examined the effects of cross-language differences on trait emotional intelligence using the Trait Emotional Intelligence Questionnaire (TEIQue). The study was motivated by previous research that argued that the language of the instrument may impact validity of the participant responses. The results from the study of Gökçen et al. found the higher performance of Chinese participants on global trait EI and sociability factor of TEIQue to contrast with those who completed the questionnaire in their native language. Thus, they proposed that the questionnaires related to sociability or social science better written in the native language of respondents as much as possible, which in turn may diminish the effects of cultural influence on the validity of a study.

However, other research in several different cultures demonstrated that there were no systematic differences between the original and translated forms of these questionnaires for various country comparisons. For example, multiple studies have demonstrated the validity EI instrumentation: e.g., the Catalan and UK sample of 351 subjects (Aluja et al., 2016); the Greek and UK sample of 440 participants (Stamatopoulou et al., 2018); and, the Italian and UK sample of 1,343 individuals (Chirumbolo et al., 2019). Therefore, research suggests that cultural variance may only be attributed to the levels of personal characteristics of trait EI of that community, but not associated with the research instruments themselves.

At this juncture, this thesis gives attention to the two key outcomes of this study, teacher job satisfaction and self-efficacy.

2.5 Job Satisfaction of Teachers

One of the key outcomes of this study is job satisfaction (JS). According to Locke (1976), job satisfaction is personal experiences of positive and pleasant emotional responses generated from their appreciation of the job. It is also considered a psychological dimension regarding the well-being of the teacher framework (OECD, 2020). Job satisfaction is regarded as a significant aspect of teacher retention. For instance, Hongying (2007) believe that job satisfaction reflects teachers' unique perspectives on dthe profession and organization as a whole, and it is essential for teachers' mental well-being.

Job satisfaction of teachers can positively influence their communications with students, and it is likely to lead to more engagement, motivation, enjoyment, and ultimately an increased likelihood of remaining in the job, on the other hand. On the other hand, a low level of satisfaction is probable to result in frustration. Most concerning, this experience will result in difficulty guiding, motivating, and controlling activities (Madigan & Kim, 2021).

Based on the UNESCO's Sustainable Development Goals, by 2030, 69 million additional teachers are expected to get hired due to the high rates of teacher attrition (UNESCO Institute for Statistics, 2016). There are theoretical reasons why teachers' intentions to leave the profession are connected to job satisfaction. Madigan and Kim (2021) states that the role of unsatisfied expectations should be considered in this regard. Teachers, for example, will become progressively unsatisfied if they are unable to obtain what they consider to be crucial in their professions. Simultaneously, teachers are likely to find their instructional tasks less enjoyable.

Overall, this psychosocial characteristic–job satisfaction is a significantly negative indicator of teachers' intentions to quit the profession. Therefore, as shown in the study, one of the essential approaches to preventing turnover is increasing teachers' job satisfaction as Madigan and Kim (2021) suggested.

2.6 Self-Efficacy of Teachers

Another crucial outcome of the study is teachers' self-efficacy (SE). The SE of teachers is described as an evaluation of their capabilities to accomplish the desired results of student engagement and learning, especially among tough or unmotivated students (Tschannen-Moran & Hoy, 2001). According to the OECD conceptual framework of 2018, teachers' self-efficacy is linked to a variety of teacher-related outcomes (Ainley & Carstens, 2018). It is also highlighted that teachers' self-efficacy is a factor in teachers' efforts to improve their persistence and reach their goals (McInerney et al., 2018).

Furthermore, it is believed that teacher self-efficacy has a profound effect on not only the classroom environment and processes but also on the quality of student-teacher relationships. For instance, students with more efficacious instructors are likely to have higher-quality student-teacher interactions, which lead to more effective classrooms (Tschannen-Moran & Hoy, 2001). Supporting this view, Perera and John (2020) also note that teachers with levels of self-efficacy can better organize and manage classroom activities and provide support for student learning and engagement. In turn, they believe that teachers with a strong sense of self-efficacy experience greater work satisfaction since they perform the tasks necessary to achieve the desired levels of teaching performance.

Generally, it is possible to say that the SE of teachers may influence both student and teacher outcomes since it is proposed as a moderator of job satisfaction.

2.8 Conclusion

This chapter introduced the conceptual understanding of trait EI and its association with general academic outcomes of students, particularly in relation to teachers' professional job practice and satisfaction. Then it presented the cross-cultural variation of trait EI in demographic factors, such as gender and country of origin as well it discussed the effects of the translation of TEIQue on participants' responses. At the end of the chapter, self-efficacy and job satisfaction of teachers, which are independent variables, were established. In addition to this, the influence that self-efficacy and job satisfaction has on the job practices of teachers, their classroom environment, and the learning process of students were also presented.

3. Methodology

This chapter provides an explanation of the methodology adopted to answer the research questions in the current study. Furthermore, it explains research design and method, sampling, data collection instrument, survey procedures, and statistical analysis. This quantitative study aims to identify the relationship between trait emotional intelligence (EI), job satisfaction, and self-efficacy of secondary school teachers in Nur-Sultan, Kazakhstan.

3.1 Research Design and Method

Quantitative research methods were used in this study as quantitative research is appropriate for “testing objective theories by examining the relationship among variables” (Creswell, 2002, p 4). Specifically, the study adopted a cross-sectional research design with a self-report survey administered to teachers. This includes descriptive statistics, the use of confirmatory factor analysis (CFA) to answer RQ1 and RQ2, and structural equation modelling (SEM) to answer RQ3. CFA and SEM procedures were adopted as a general technique in this study to assess the validity of substantive theory in the field of trait EI and teacher job satisfaction and self-efficacy.

3.2 Participants and Sampling

The total number of teacher respondents in the current study is 107. This total was achieved by first establishing a sample frame of schools of interest. First, a list of 80 public schools and 30 private schools in the city of Nur-Sultan, Kazakhstan, was established by way of the official local government website (Electronic Government of the Republic of Kazakhstan, 2022). Therefore, given the geographical proximity of the researcher to the sample schools, the sampling method could be considered a convenience type sample.

For each of the 110 total schools, tailored emails were sent to the school administration inviting principals to forward the survey link to teachers to complete the survey. All email invitations were sent on the 13th and 14th of January 2022. The survey was administered via the online application, Qualtrics and remained open to teacher respondents until March 1st, 2022. At this point, teacher respondents were drawn from a total of 11 separate public schools ($n = 97$) and three separate private schools ($n = 10$). According to Delice (2010), a sample size of 100 to 150 is a common minimum for survey type research; therefore, the sample size of 107 was considered adequate for this study.

3.3 Data Collection Instrument

For the independent variable in this study, the Trait Emotional Intelligence Questionnaire Short Form (TEIQue-SF) (Petrides, 2009) was used. The instrument consists of 30 items to identify the level of trait EI of teachers. Russian academics, Kryukova & Shestova (2020) recently translated the English version of the TEIQue-SF (short form) into Russian, and this translation was checked and adapted for use in the current study. Because of the trilingual requirements of the current study, the TEIQue-SF was also translated from English into Kazakh by this author, a native language speaker of Kazakh. In addition, for the dependent variables in the study, the OECD questionnaire was used to identify the levels of job satisfaction and self-efficacy of teachers. This instrument included six questions about job satisfaction, and 12 questions about self-efficacy of teachers (four items each for Classroom Management, Instructional Strategies, and Student Engagement). All associated questions were translated by this author from English into Russian and Kazakh (see Appendices A, B, and C).

3.4 Survey Procedures

For the TEIQue-SF questionnaire, teacher respondents were asked to respond to each question by selecting the most appropriate response anchor that best reflects their degree of agreement or disagreement with that statement. It was made clear to teacher respondents that there were no right or wrong answers. There were seven alternative choices to each question scale from 1 = Completely Disagree to 7 = Completely Agree. The entire questionnaire took teachers approximately 10 minutes to complete and is available in Table 2.

For the self-efficacy questionnaire, teacher respondents were asked to answer each statement by clicking the most appropriate question response anchor that best reflects their status. There were four possible responses to each statement ranging from 1 = Never/Almost Never to 4 = Always. The entire questionnaire took approximately 5 minutes to complete and is available in Table 3.

For the job satisfaction questionnaire, there were six statements in which the teacher respondents could choose the most appropriate response anchor, which ranged from 1 = Completely Disagree to 5 = Completely Agree. The entire questionnaire took approximately 3 minutes to complete and is available in Table 4.

To sum, the times to complete the three separate components of the questionnaire were 10, 5, and 3 minutes, respectively. Therefore, the total time that the survey took to for teacher respondents to complete should not have been more than 20 minutes.

Table 2

TEIQue Short Form

1. Expressing my emotions with words is not a problem for me.	1	2	3	4	5	6	7
2. I often find it difficult to see things from another person’s viewpoint.	1	2	3	4	5	6	7
3. On the whole, I’m a highly motivated person.	1	2	3	4	5	6	7
4. I usually find it difficult to regulate my emotions.	1	2	3	4	5	6	7
5. I generally don’t find life enjoyable.	1	2	3	4	5	6	7
6. I can deal effectively with people.	1	2	3	4	5	6	7
7. I tend to change my mind frequently.	1	2	3	4	5	6	7
8. Many times, I can’t figure out what emotion I’m feeling.	1	2	3	4	5	6	7
9. I feel that I have a number of good qualities.	1	2	3	4	5	6	7
10. I often find it difficult to stand up for my right.	1	2	3	4	5	6	7
11. I’m usually able to influence the way other people feel.	1	2	3	4	5	6	7
12. On the whole, I have a gloomy perspective on most things.	1	2	3	4	5	6	7
13. Those close to me often complain that I don’t treat them right.	1	2	3	4	5	6	7
14. I often find it difficult to adjust my life according to the circumstances.	1	2	3	4	5	6	7
15. On the whole, I’m able to deal with stress.	1	2	3	4	5	6	7
16. I often find it difficult to show my affection to those close to me.	1	2	3	4	5	6	7
17. I’m normally able to “get into someone’s shoes” and experience their emotions.	1	2	3	4	5	6	7
18. I normally find it difficult to keep myself motivated.	1	2	3	4	5	6	7
19. I’m usually able to find ways to control my emotions when I want to.	1	2	3	4	5	6	7
20. On the whole, I’m pleased with my life.	1	2	3	4	5	6	7
21. I would describe myself as a good negotiator.	1	2	3	4	5	6	7
22. I tend to get involved in things I later wish I could get out of.	1	2	3	4	5	6	7
23. I often pause and think about my feelings.	1	2	3	4	5	6	7
24. I believe I’m full of personal strengths.	1	2	3	4	5	6	7
25. I tend to “back down” even if I know I’m right.	1	2	3	4	5	6	7
26. I don’t seem to have any power at all over other people’s feelings.	1	2	3	4	5	6	7
27. I generally believe that things will work out fine in my life.	1	2	3	4	5	6	7
28. I find it difficult to bond well even with those close to me.	1	2	3	4	5	6	7
29. Generally, I’m able to adapt to new environments.	1	2	3	4	5	6	7
30. Others admire me for being relaxed.	1	2	3	4	5	6	7

Table 3

Self-Efficacy Questionnaire

Classroom management	1. Get students to follow classroom rules.
	2. Calm student who is disruptive.
	3. Make expectation about behaviour clear.
	4. Controlling disruptive behaviour.
Instruction strategies	5. Craft good questions for my students.
	6. Use variety of assessment strategies.
	7. Provide alternative explanations when students are confused.
Student engagement	8. Vary instructional strategies.
	9. Help students think critically.
	10. Help students value learning.
	11. Motivate students who show low interest.
	12. Get students to believe they can do well.

Table 4*Job Satisfaction Questionnaire*

-
1. I regret that I decided to become a teacher.
 2. It would have been better to choose another profession
 3. The advantages of being a teacher clearly outweigh the disadvantages.
 4. If I could decide again, I would still be a teacher.
 5. I think that the teaching profession is valued in our society.
 6. All in all, I am satisfied with my job.
-

3.5 Statistical Analysis

For RQ1, concerning the measurement of trait emotional intelligence, self-efficacy, and job satisfaction, this study made use of exploratory, then confirmatory factor analysis. This was undertaken with the assistance of the lavaan (Rosseel, 2012) package. For confirmatory factor analysis, minimum item factor loadings were set at .50, and a final measurement model was selected that exhibited an acceptable fit to the data. This decision was made in accordance with the following fit indices: the χ^2/df ratio (under 3.83) and associated non statistically significant p value Walker (2013) (though sensitive to sample size), standardized root mean square residual (SRMR, below .08) (Hu & Bentler, 1999), root mean square error of approximation (RMSEA, below .08) Browne and Cudeck (1989, 1992) and Byrne (2001), comparative fit index (CFI, above .90) and gamma hat (above .90) when considering model fit (Byrne, 2001). In addition, based on popularity, the Cronbach's alpha values (above .70) for factors' construct validity are also reported throughout this study (though this is sensitive when there are a small number of items). Alpha will be calculated with the assistance of the CTT (Willse, 018) and psych () packages (Revelle, 2022). In total, there are four fit indices to be ideally met for the measurement and structural models in this study: SRMR, RMSEA, CFI, and gamma hat. In accordance with Hu and Bentler (1999), a common minimum requirement is for three of the total

four minimum requirements to be met for a model to be deemed acceptable. This same approach is adhered to for the analysis in this thesis.

For RQ2, concerning the relationship between trait EI, self-efficacy, and job satisfaction, an examination of the inter-factor correlations would be undertaken. Interpretations of magnitude of effect size would be made in accordance with Cohen (1992) via small ($r > .10$), medium, ($r > .30$), and large ($r > .50$) interpretations.

For RQ3, concerning the predictive effects of trait EI on self-efficacy and job satisfaction, SEM is applied with the assistance of the lavaan package. Model fit will be assessed in accordance with the same criteria mentioned for RQ1.

3.6 Ethical consideration

All research in this study was undertaken in accordance with the NUGSE code of ethics. The research did not include the financial cost of participating. The research does not analyse individual-specific teacher or school responses but rather builds general results. It is considered no more than minimal risk since the research involves human subjects who are older than 18 years old. Considering the anonymity or confidentiality of the survey participants, it is strictly anonymous. Only your age, gender, country of origin, subjects taught, dominant language, years of experience of teachers, school type, and school name are asked in the questionnaire. Only the researcher and the research advisor will have access to the digital data. Full consent is obtained from the participants prior to the study.

3.7 Conclusion

The current chapter presents the research design and method, participants and samplings, data collection instruments, survey procedures, and statistical analysis of the research. The study adopted a cross-sectional research design, including descriptive statistics, the use of confirmatory

factor analysis (CFA) and structural equation modelling (SEM) to assess the validity of the substantive theory in the field concerned with understanding the relationship between trait EI, teacher job satisfaction, and self-efficacy. The self-report survey was administered to teachers using an online application, Qualtrics. The total number of 107 teacher respondents was drawn from 11 separate public schools ($n = 97$) and three separate private schools ($n = 10$) in the city of Nur-Sultan, Kazakhstan. For the independent variable of this study, the Short Form of Trait Emotional Intelligence Questionnaire (TEIQue-SF) was employed; and for the dependent variables of the study, the OECD Teacher Self-Efficacy and Teacher Job Satisfaction Questionnaires were used. All the questionnaires were adopted with their translations in Kazakh and Russian languages. The total time to complete the survey was more than 20 minutes. The main results and findings are presented in the next chapter.

4. Results

This chapter presents the findings of the research. The purpose of the study is to identify the relationship between the trait emotional intelligence (EI), job satisfaction, and self-efficacy of secondary school teachers in the context of Nur-Sultan city, Kazakhstan. Results for the current study are presented in the order of the three research questions:

RQ1: How are teachers' trait emotional intelligence, self-efficacy, and job satisfaction best measured in the Kazakhstani contexts?

RQ2: What is the relationship between Kazakhstani teachers' trait emotional intelligence, self-efficacy, and job satisfaction?

RQ3. To what extent is teachers' trait emotional intelligence associated with teacher self-efficacy and job satisfaction?

Descriptive statistics and all the findings are included as a preliminary section of the results chapter.

4.1 Descriptive Statistics

Descriptive statistics are provided herein for this study. In fact, descriptive statistics were provided for all 14 secondary schools and the 107 teachers in Nur-Sultan. Descriptive statistics for the demographics such as teachers' age, gender, country of origin, taught subject, dominant language, years of experience, and school type are also provided. Regarding the age, six were under 25 (5.6%); 15 were between 25-30 (14.0%); 35 were between 31-40 (32.7%); 26 were between 41-50 (24.3%); 23 were between 51-60 (21.5%); and two were between 61 and over (1.9%). In terms of gender, 13 (12.1%) were male; and 94 (87.9%) were female respondents. In respect of country of origin, 95 (88.8%) respondents were from Kazakhstan, and 12 (11.2%) of them were from other countries. In terms of taught subjects, 34 (31.8%) were language teachers;

ten (9.3%) were Mathematics teachers, four (3.7%) were Science teachers; five (4.7%) were Social Science teachers; eight (7.5%) were teachers of Technology, Art, and PE; and 46 (43.0%) were teachers from other subjects. Regarding the dominant language, 83 (77.6%) were Kazakh, 17 (15.9%) were Russian, and seven (6.5%) were English speakers. In terms of years of experience, 20 (18.7%) were less than 5 years; 14 (13.1%) were between 5-10 years; 21 (19.6%) were between 11-15 years, 10 (9.3%) were between 16-20 years, 42 (39.3%) were 21 years and over. Concerning the type of school, 97 (90.7%) were from public schools; and 10 (9.3%) were from private schools. All descriptive statistics for inter-factor correlations are provided in Table 5.

Table 5

Descriptive Statistics (Factors)-TEIQue

Item	Description	M	SD	Min	Max	Skew
Well-being						
Q9.5	I generally don't find life enjoyable.	5.19	2.34	1	7	-0.82
Q9.9	I feel that I have a number of good qualities.	5.99	1.51	1	7	-1.67
Q9.12	On the whole, I have a gloomy perspective on most things.	5.50	2.07	1	7	-1.07
Q9.20	On the whole, I'm pleased with my life.	6.37	1.18	1	7	-2.29
Q9.24	I believe I'm full of personal strengths.	5.79	1.50	1	7	-1.26
Q9.27	I generally believe that things will work out fine in my life.	5.86	1.75	1	7	-1.59
Self-Control						
Q9.4	I usually find it difficult to regulate my emotions.	4.65	2.29	1	7	-0.31
Q9.7	I tend to change my mind frequently.	4.16	2.24	1	7	0.03
Q9.15	On the whole, I'm able to deal with stress.	5.24	2.10	1	7	-0.93
Q9.19	I'm usually able to find ways to control my emotions when I want to.	5.54	1.80	1	7	-1.04
Q9.22	I tend to get involved in things I later wish I could get out of.	4.90	2.06	1	7	-0.55
Q9.30	Others admire me for being relaxed.	4.87	2.15	1	7	-0.52
Emotionality						
Q9.1	Expressing my emotions with words is not a problem for me.	5.28	1.85	1	7	-0.81
Q9.2	I often find it difficult to see things from another person's viewpoint.	4.32	2.08	1	7	-0.04
Q9.8	Many times, I can't figure out what emotion I'm feeling.	4.70	2.27	1	7	-0.30
Q9.13	Those close to me often complain that I don't treat them right.	5.02	2.31	1	7	-0.69
Q9.16	I often find it difficult to show my affection to those close to me.	4.77	2.23	1	7	-0.39
Q9.17	I'm normally able to "get into someone's shoes" and experience their emotions.	4.02	2.21	1	7	-0.11
Q9.23	I often pause and think about my feelings.	5.00	1.99	1	7	-0.47
Q9.28	I find it difficult to bond well even with those close to me.	5.45	2.07	1	7	-0.93
Sociality						
Q9.6	I can deal effectively with people.	6.03	1.40	1	7	-1.63
Q9.10	I often find it difficult to stand up for my right.	4.63	2.19	1	7	-0.26
Q9.11	I'm usually able to influence the way other people feel.	3.35	2.23	1	7	0.38
Q9.21	I would describe myself as a good negotiator.	5.14	1.84	1	7	-0.71
Q9.25	I tend to "back down" even if I know I'm right.	3.70	2.13	1	7	0.26
Q9.26	I don't seem to have any power at all over other people's feelings.	4.43	2.15	1	7	-0.15
Global Trait EI						
Q9.3	On the whole, I'm a highly motivated person.	5.33	1.66	1	7	-1.00
Q9.14	I often find it difficult to adjust my life according to the circumstances.	5.03	2.08	1	7	-0.58
Q9.18	I normally find it difficult to keep myself motivated.	4.48	2.10	1	7	-0.10
Q9.29	Generally, I'm able to adapt to new environments.	5.59	1.81	1	7	-1.21

Table 6

Descriptive Statistics (Factors)-Job Satisfaction

Item	Description	<i>M</i>	<i>SD</i>	Min	Max	Skew
Q10.1	I regret that I decided to become a teacher.	3.36	0.78	1	4	-1.19
Q10.2	It would have been better to choose another profession	3.15	0.84	1	4	-0.75
Q10.3	The advantages of being a teacher clearly outweigh the disadvantages.	2.58	0.98	1	4	-0.10
Q10.4	If I could decide again, I would still be a teacher.	3.16	0.91	1	4	-0.83
Q10.5	I think that the teaching profession is valued in our society.	2.71	1.02	1	4	-0.31
Q10.6	All in all, I am satisfied with my job.	3.31	0.83	1	4	-1.21

Table 7

Descriptive Statistics (Factors)-Self-Efficacy

Item	Description	<i>M</i>	<i>SD</i>	Min	Max	Skew
Classroom management						
Q11.1	Get students to follow classroom rules.	3.12	0.85	2	4	-0.23
Q11.2	Calm student who is disruptive.	2.58	1.00	1	4	0.12
Q11.3	Make expectation about behaviour clear.	2.88	0.94	1	4	-0.37
Q11.4	Controlling disruptive behaviour.	2.94	0.90	1	4	-0.20
Instructional strategies						
Q11.5	Craft good questions for my students.	3.23	0.69	2	4	-0.34
Q11.6	Use variety of assessment strategies.	3.13	0.75	1	4	-0.35
Q11.7	Provide alternative explanations when students are confused.	3.24	0.82	1	4	-0.67
Q11.8	Vary instructional strategies.	3.24	0.66	2	4	-0.29
Student Engagement						
Q11.9	Help students think critically.	3.37	0.65	2	4	-0.54
Q11.10	Help students value learning.	3.43	0.63	2	4	-0.63
Q11.11	Motivate students who show low interest.	3.29	0.67	1	4	-0.59
Q11.12	Get students to believe they can do well.	3.47	0.62	2	4	-0.70

4.2 RQ1: A Measurement Model for Trait Emotional Intelligence, Self-Efficacy, and Job Satisfaction

For RQ1, exploratory factor analysis was first applied to the data so as to explore the underlying factors in the data. Thereafter, confirmatory factor analysis was applied to the data.

4.2.1 RQ1: A Measurement Model, Confirmatory Factor Analysis

The results from the confirmatory factor analysis are presented in Table 8.

Table 8

Five-Factor 13-Item Measurement Model for Trait EI, SE and JS

Item	Item-factor loading
Well-Being (alpha = .62)	
Q9.9	0.629***
Q9.20	0.597***
Q9.27	0.572***
Self-control (alpha = .66)	
Q9.15	0.711***
Q9.19	0.698***
Self-Efficacy (Classroom Management) (alpha = .79)	
Q11.2	0.621***
Q11.3	0.806***
Q11.4	0.825***
Self-Efficacy (Instructional Strategies) (alpha = .66)	
Q11.5	0.675***
Q11.6	0.660***
Q11.8	0.562***
Job Satisfaction (alpha = .77)	
Q10.4	0.696***
Q10.6	0.891***

4.2.2 RQ1: A Measurement Model, An Examination of Model Fit

The model fit statistics are presented in Table 9.

Table 9

Measurement Model Fit

Model	chi-square	df	CFI	RMSEA	upper	lower	SRMR	gamma hat
Final model	94.83	55	0.89	0.08	0.11	0.05	0.08	0.95

From the table above, it is clear that the model fit was met for RMSEA, SRMR, and gamma hat indices in accordance with the requirements of Hu and Bentler (1999). Therefore, the model was deemed to have met the minimum requirements for model fit in this study.

4.3 RQ2: Relationship between Trait EI, Self-Efficacy, and Job Satisfaction

Multiple inter-factor correlations are provided as a result of the final measurement model presented for RQ1. As this is the focus for RQ2, Table 10 presents a correlation matrix for all inter-factor correlations in the study.

Table 10

Measurement Model Inter-Factor Correlations

Factors	1	2	3	4	5
1. Well-being	1.00	-	-	-	-
2. Self-control	.736***	1.00	-	-	-
3. Self-efficacy (CM)	.256*	-.153	1.00	-	-
4. Self-efficacy (IS)	-.026	.057	.535***	1.00	-
5. Job satisfaction	.381**	.261*	.101	.305*	1.00

* $p < .05$, ** $p < .01$, *** $p < .001$.

In summary, we can see that there are several strong correlations between Well-being and Self-control ($r = .736, p < .001$); Self-efficacy (CM) and Self-efficacy (IS) ($r = .535, p < .001$); Well-being and Job satisfaction ($r = .381, p < .01$); Well-being and Self-efficacy (CM) ($r = .256, p < .05$); Job satisfaction and Self-control ($r = .261, p < .05$); Job satisfaction and Self-efficacy (IS) ($r = .305, p < .05$).

4.4 RQ3: Trait EI for Job Self-Efficacy and Satisfaction

The main factorial coefficients for the final structural equation model are presented in Table 11.

Table 11

Results from the Final Structural Model for SE and JS

Predictor Variables	Outcome Variables		
	Self-Efficacy (CM)	Self-Efficacy (IS)	Job Satisfaction
Well-being	0.80 ^{ns}	- 0.15 ^{ns}	0.41 ^{ns}
Self-control	- 0.75 ^{ns}	0.17 ^{ns}	- 0.04 ^{ns}

^{ns} = not statistically significant, * $p < .05$, ** $p < .01$, *** $p < .001$.

While controlling for demographic factors, there was no strong association between the remaining two dependent measures of trait EI (Well-being and Self-control) and Self-efficacy and Job satisfaction, as shown in Table 8.

4.5 Conclusion

This chapter presents the main findings of the research. The findings were arranged in accordance with the research questions: How are teachers' trait emotional intelligence, self-efficacy, and job satisfaction best measured in the Kazakhstani contexts? What is the relationship between Kazakhstani teachers' trait emotional intelligence, self-efficacy, and job satisfaction? And, to what extent is teachers' trait emotional intelligence associated with teacher self-efficacy and job satisfaction?

Descriptive statistics for demographics indicated that the mean age was between 31-40 which consisted 32.7% of the total participants; 87.9% of them were female; 88.8 % of their country of origin were Kazakhstan; as well their dominant language is Kazakh with the percentage of 77.6%. The mean years of experience of teachers was 21 years and over, which were equalled to 39.3%; 90.7% of them from public schools; and 43% of the teachers teach different subjects beside the language, mathematics, art, PE, science subjects, and social science subjects.

Furthermore, CFA for descriptive statistics for inter-correlation factors demonstrated a five-factor model for the best capture the experience of teachers in Kazakhstan: Well-being, Self-Control, Self-Efficacy (Classroom Management), Self-Efficacy (Instructional Strategies), and Job Satisfaction. Correlation matrix for inter-factor correlation showed strong correlations between some factors such as Well-being and Self-control; Self-efficacy (CM) and Self-efficacy (IS); Well-being and Job satisfaction; Well-being and Self-efficacy (CM); Job satisfaction and

Self-control; and Job satisfaction and Self-efficacy (IS). SEM model estimated that there is no significant effect of the demographics factors on the trait EI of teachers' association with their self-efficacy and job satisfaction. In the next chapter, the main results are further discussed.

5. Discussion

This chapter provides an interpretation and discussion of the main results that were presented in the previous chapter. The current study set out with the aim of identifying the relationship between the trait emotional intelligence (EI), job satisfaction, and self-efficacy of secondary school teachers in Nur-Sultan city, Kazakhstan. In response to this research purpose, the following three research questions were developed: How are teachers' trait emotional intelligence, self-efficacy, and job satisfaction best measured in the Kazakhstani contexts? What is the relationship between Kazakhstani teachers' trait emotional intelligence, self-efficacy, and job satisfaction? And, to what extent is teachers' trait emotional intelligence associated with teacher self-efficacy and job satisfaction?

5.1 Discussion of RQ1: The Five-Factor Measurement Model for Trait EI, Self-Efficacy, and Job Satisfaction

The results of this study indicate that only those remaining five factors, namely, Well-being, Self-Control, Self-Efficacy (Classroom Management), Self-Efficacy (Instructional Strategies), and Job Satisfaction represent a useful way to measure teachers' trait EI, self-efficacy, and job satisfaction in Kazakhstan. A discussion about the resultant measurement model for assessing trait EI in Kazakhstan is now provided.

5.1.1 The Five-Factor Model: Considerations for Well-Being and Self-Control

Trait EI was one of the independent variables of the study, and the 30-item Short Form of Trait Emotional Intelligence Questionnaire (TEIQue) was initially proposed to measure this trait. The initial questionnaire was comprised of 30 items conceivably corresponding to five factors as defined by the literature review (Petrides et al., 2004). However, findings suggested that, for the TEIQue instrument, only the two factors, Well-being and Self-Control, were found to be

sufficiently good-fitting to the data. For example, Emotionality, did not hold as a viable factor in the model. Therefore, in the final model, the Well-Being factor was comprised of the following three items: I feel that I have a number of good qualities; On the whole, I'm pleased with my life; I generally believe that things will work out fine in my life. In addition, the Self-Control factor was comprised of the following two items: On the whole, I'm able to deal with stress; I'm usually able to find ways to control my emotions when I want to.

Prior studies have noted essential cultural differences in the consequences of Emotionality dimension of trait EI, reflecting the difference between Asian and Western countries (Gökçen et al., 2014; Nozaki, 2018). Particularly, Asian culture promotes emotional regulation while Western culture promotes open emotional expression. Therefore, it is reasonable to assume that Asian people tend to regulate and manage their emotions and that this may not always correspond to common teacher behaviours in Western contexts.

Regarding the Well-being factor, it is evident that teachers exhibiting higher levels of well-being also tend to be more pleased with their work. Specifically, there was a very strong correlation between Well-being and Job satisfaction. While there exists little research to corroborate this findings, Syzdykbayeva (2020) found a strong relationship between teacher job satisfaction and the various social benefits made available by school administrations. The current study extends this prior research to propose that social benefits and teacher psychological well-being both appear associated with improved levels of job satisfaction among teachers.

5.1.2 The Five-Factor Model: Considerations for Self-Efficacy in Classroom Management, and Instructional Strategies

Self-Efficacy was one of the two dependent variables of the study. The OECD questionnaire was adopted, which was originally comprised of 12 items to identify the level of self-efficacy of teachers. This initial conceptualization consisted of three factors pertaining to teacher self-efficacy in terms of Classroom management, Instruction strategies, and Student Engagement. However, due to the low item-factor loading, some items were removed, and the findings revealed that only two factors were viable for the sample. Three of the items for the Self-Efficacy (Classroom management) and the rest three items for the Self-Efficacy (Instructional strategies). Self-Efficacy (CM) was comprised of the following three items: Calm students who are disruptive; Make expectations about behaviour clear; and Controlling disruptive behaviour. Self-Efficacy (IS) was comprised of the following three items: Craft good questions for my students; Use a variety of assessment strategies; and Vary instructional strategies. The factor for student engagement was not good fitting to the data and, therefore appeared to not be viable for the current Kazakhstani context.

Therefore, findings suggested that while effective Classroom management and Instructional strategies can be measured usefully in Kazakhstan, Student engagement cannot be in the current form. This may be due to the education system of Kazakhstan, which is not similar to Western education systems, on the one hand. The concept of student engagement may be viewed entirely different, and more work is needed to understand student engagement (or teacher perception of student engagement) in Kazakhstani classrooms.

Finally, for Self-Efficacy in Instructional strategies, the following item was not aligned with the conception of instruction in Kazakhstan: Get students to follow classroom rules. This

may be because many classrooms do not have specific rules to follow, though further research is needed to confirm this more speculative claim.

5.1.3 The Five-Factor Model: Considerations for Job Satisfaction

Job satisfaction, another dependent variable of the study, initially consisted of six items. However, during the discriminant validity checks, it was found that Q10.4 and Q10.6 were the only two highly inter correlated items measuring teachers' job satisfaction. Thus, in the final model, there were two items in that factor: If I could decide again, I would still be a teacher; and, All in all, I am satisfied with my job. The items excluded were: I regret that I decided to become a teacher; It would have been better to choose another profession; The advantages of being a teacher clearly outweigh the disadvantages; and, I think that the teaching profession is valued in our society. Although speculative, these items may not have been aligned with conceptions of teacher job satisfaction in Kazakhstan because the well-being of teachers is improving yearly and therefore perhaps not consistently experienced by novice and veteran teachers. Moreover, the item, I think that the teaching profession is valued in our society, may not be aligned well given the historic low status of the profession in Kazakhstan (Qanay et al., 2021).

In general, therefore, it seemed that Well-being, Self-control, Self-efficacy (IS), Self-efficacy (CM), and Job satisfaction factors, reflective of the cultural context, might best capture the experiences of teachers in the context of Kazakhstan and that the measurement of these constructs in Kazakhstan and Central Asia require further research.

5.2 The Five-Factor Model: Relationships between Factors

The Five-Factor Measurement Model for Trait EI, Self-Efficacy, and Job Satisfaction of teachers of Kazakhstani secondary schools was specified to represent the observed data. The measurement model was appropriate and strengthened the construct validity of the study. Among

all ten inter-factor correlations, six were found to be statistically significant. These were the positive relationships between Well-being and Self-control, Self-efficacy (CM) and Self-efficacy (IS), Well-being and Job satisfaction, Well-being and Self-efficacy (CM), Job satisfaction and Self-control, and Job satisfaction and Self-efficacy (IS).

According to the results, there was a strong correlation between Well-being and Self-Control. These findings corroborate the findings of Lawal et al. (2018), who discovered a strong relationship between Well-being and Self-Control among South African university students. Therefore, both studies support the connection between Well-being and Self-control among people in different cultural, geographical, and professional contexts.

There was also a strong positive correlation between Self-efficacy (CM) and Self-efficacy (IS). It is quite understandable that if teachers provide clearer instructions to their students, they are more likely to properly manage a classroom. The present findings seem consistent with other research, which found that more rational classroom management was associated with higher instructional quality among urban teachers in the US (Kwok, 2017), and planning and preparation of classroom instruction were critical determinants of a positive classroom setting among teacher trainees in Turkey (Kavrayici, 2021).

As predicted, there was also a moderate correlation observed between Well-being and Job Satisfaction. Prior studies have also noted the importance of well-being for the job satisfaction of teachers, including the work of Hansen et al. (2015), Kurt and Demirbolat (2019), and Dreer (2021). All of these authors found that well-being strongly and substantially predicts the job satisfaction of teachers. Moreover, an implication of this is the possibility of developing trait EI training for teachers to build a supportive workplace environment at schools, as suggested by Ju

et al. (2015) and Nelis et al. (2011), as both studies suggest that strategies might be effective in preventing teacher burnout and increasing teacher job performance.

Furthermore, a positive correlation between Job Satisfaction and Self-Efficacy (IS) appeared, and this finding is in agreement with Hu and Zhao's (2016) findings which showed job satisfaction as an indicator of the association between creative self-efficacy and innovation among employees and supervisors of different counties in China. Furthermore, the current results are in accordance with previous studies such as Canrinus et al. (2012), Ismayiova and Klassen (2019), Katsontonis (2019), Kasalak and Dagyar (2020), and Demir (2020), which all have indicated that there was a relationship between self-efficacy and job satisfaction of teachers. Therefore, the findings of the current study confirm this finding for the Kazakhstani teacher education context.

The results of the study at hand also showed a positive correlation between Well-being and Self-Efficacy (CM), which matches those observed in earlier studies. For instance, according to Hayes et al. (2019), a teacher classroom management program increases welfare of teachers in terms of self-efficacy, lowers rates of burnout, and mental health. In addition, Bjorklund et al. (2021) also found that self-efficacy can significantly contribute to teachers' subjective well-being. This is an important finding for Kazakhstani and provides new opportunities for training in addition to teacher self-development.

Lastly, the current study discovered a statistical correlation between Self-Control and Job satisfaction. This result can corroborate the findings of a great deal of the previous work in this field. For instance, the study findings by Fiorilli et al. (2019) and Platdisou (2010) suggested the importance of trait EI when teachers cope with higher job demands and workplace stress; Li et al. (2018) noted that teachers with higher trait EI could build confidence and effectively manage

their teaching job; the study of Merida-Lopez and Extremera (2017) suggested the essential role of trait EI in preventing teacher burnout and stress at the workplace; and the study of Li et al. (2021) argued that teachers' self-control at school anticipates improved productivity by increasing job commitment and reducing stress levels at the workplace. On the other hand, in this case, these results can show a crucial role of the self-control factor of trait EI, particularly when teachers attempt to cope with job stress and potential burnout. Therefore, the current findings established for Kazakhstan may again confirm the significant role of the self-control factor in the job satisfaction of teachers.

5.3 Discussion of RQ3: Trait EI's Association with Self-efficacy and Job satisfaction

Surprisingly, the finding of the final structural model suggested that there was no strong regression-based relationship for the remaining two dependent dimensions of trait EI (Well-being and Self-control) with Self-efficacy and Job satisfaction while controlling for demographic factors. It is encouraging to compare this result with that of Sahin (2017), who found that self-control and emotionality do not strongly foresee the self-efficacy level of the pre-service teachers. However, the findings of the current study also do not support some previous research. Particularly, Kostić-Bobanović (2020), who found the self-control factor of trait EI has a positive correlation with self-efficacy (classroom management) among Turkish foreign language teachers, and Nikoopour et al. (2012), who found well-being has the most significant correlation with total self-efficacy and Efficacy in classroom management among Iranian EFL teachers. Thus, it can be assumed that the results may differ according to the country of the different cases.

5.4 Conclusion

The discussion section focused on all three research questions and provided corresponding considerations and possible explanations behind the findings. The findings of this

study both support and run against findings in previous studies. For example, unlike findings in Western contexts, the measurement model excluded factors pertaining to emotion. In addition, unlike previous research there were very few statistically significant relationships between the factors of interest. Nevertheless, in coherence with other research, more effective classroom management in Kazakhstan is also closely associated with better instructional quality. In addition, it can be concluded that the well-being of teachers may be more strongly associated with their self-control and job satisfaction level. Though this is not conclusive and further large-scale studies need to verify this.

As the findings suggested, the concept of student engagement did not hold in the case of Kazakhstan. Therefore, more work is needed to understand and measure the degree of student engagement (or teacher perception of student engagement) in Kazakhstani classrooms. In addition, based on these findings, it is suggested that organizations responsible for teacher training should concentrate on teaching instructional strategies and classroom management practices to the teacher trainees to enhance teachers' self-efficacy levels. Concerning the relationship between teacher self-efficacy for classroom management and the well-being of teachers, another important practical implication can be that teaching classroom management programs need to be developed by teacher training institutions in order to improve the welfare of teachers at the workplace. Additionally, due to the positive relationship between teacher self-efficacy for instructional strategies and teacher job satisfaction, it may be proposed that effective organizational measures be taken to improve teachers' self-efficacy so as to adopt an encouraging perspective in the organization. As a consequence, the job performance of teachers consequently can improve.

Finally, since teacher psychological well-being and self-control, which were dimensions of trait EI appeared to be associated with improved levels of job satisfaction among teachers, more strategies related to teacher well-being and self-control, and the development of trait EI training for teachers need to be implemented, not only in order to decrease low job satisfaction levels but also to prevent teacher attrition.

6. Conclusion

6.1 Overall Summary

The present study was designed to determine the relationship between trait emotional intelligence (EI), self-efficacy, and job satisfaction of secondary school teachers in Nur-Sultan, Kazakhstan. In response to this research purpose, the following three research questions were developed: How are teachers' trait emotional intelligence, self-efficacy, and job satisfaction best measured in the Kazakhstani contexts? What is the relationship between Kazakhstani teachers' trait emotional intelligence, self-efficacy, and job satisfaction? And, to what extent is teachers' trait emotional intelligence associated with teacher self-efficacy and job satisfaction?

The study adopted a cross-sectional research design. This included descriptive statistics, the use of confirmatory factor analysis (CFA) to answer RQ1 and RQ2, and structural equation modelling (SEM) to answer RQ3. CFA and SEM procedures were undertaken with the assistance of the lavaan (Rosseel, 2012) R package as a general technique in this study to assess the validity of substantive theory in the field of trait EI and teacher job satisfaction and self-efficacy. The self-report survey was administered to teacher respondents using an online application, Qualtrics. The total number of 107 teacher respondents participated from 11 separate public schools ($n = 97$) and three separate private schools ($n = 10$) in the city of Nur-Sultan, Kazakhstan. For the independent variable of this study, the Short Form of Trait Emotional Intelligence Questionnaire (TEIQue-SF), and for the dependent variables of the study, the OECD Teacher Self-Efficacy and Teacher Job Satisfaction Questionnaires were used. All the questionnaires were adopted with their translations in Kazakh and Russian languages. The total time to complete the survey questionnaires was around 20 minutes.

The main finding of this study was that the factors of trait EI (Well-being and Self-Control) and factors of Self-Efficacy (Classroom Management and Instructional Strategies) and Job Satisfaction provide an appropriate way to measure the experiences of teachers in the context of Nur-Sultan, Kazakhstan. Another more significant finding to emerge from this study is that there were statistically significant inter-factor correlations between Well-being and Self-control, Self-efficacy (CM) and Self-efficacy (IS), Well-being and Job satisfaction, Self-control and Job satisfaction, Self-Efficacy (IS) and Job satisfaction, and Self-Efficacy (CM) and Well-being. This provides insight into the corollaries of teacher well-being in Kazakhstan and how the general concept of well-being might be best measured in the similar Central Asian milieus. Furthermore, it was also shown that there was no strong regression-based relationship for the remaining two dependent factors of trait EI (Well-being and Self-control) with the independent variables, Self-efficacy and Job satisfaction. Therefore, there was no evidence that trait EI provided any incremental validity for teacher self-efficacy in Kazakhstan, though larger scale studies involving teachers from multiple regions of Kazakhstan and the use of additional control variables would provide a conclusive insight in this regard.

6.2 Limitations

The generalisability of these results is subject to certain limitations. For instance, the research was carried out in only one city in Kazakhstan; therefore, it might not capture the teachers' sentiment and experience in the whole country. The study is also limited by the lack of previous research on the topic trait EI, self-efficacy, and job satisfaction in the case of Kazakhstan. Thus, it was challenging to compare and contrast the results of the study with the previous works of literature and to build on previous research. In addition to these, due to the low item-factor loadings, a large number of items which were predicted as main factors were

eliminated from the general data of the study. Hence, a re-validation study with a new sample of teachers is required for further research.

6.3 Implication and Recommendations

One of the possible implications of these findings is that both the teaching of Instructional strategies and Classroom management practices should be taken into account by teacher training institutions when training pre-service teachers in order to improve their self-efficacy levels. Moreover, considering the strong correlation between trait EI (Well-being and Self-Control) and Job satisfaction, it is proposed that a key policy priority should therefore be to plan for the long-term support of the well-being and self-control (trait EI training) of teachers in Kazakhstani society so as to increase their job satisfaction levels and the retention of teachers. Besides that, due to the highly significant association between teacher self-efficacy and well-being and job satisfaction, teachers might be offered in-service training to enhance their professional self-efficacy, on the one hand. On the other hand, curricula may be adjusted to promote teachers' perceptions of professional self-efficacy since educational programs are critical for establishing personal experiences.

Based on the limited research on trait EI of teachers and self-efficacy in Kazakhstan, further research on these topics are strongly encouraged. A better understanding and exploration of the concepts may be carried out with a larger sample of teachers from multiple regions inside Kazakhstan and in other post-Soviet jurisdictions.

6.4 Overall Conclusions

The paper concludes by arguing the significance of well-being and self-control factors of trait emotional intelligence on teachers' job satisfaction levels. The examination of the inter-factor correlations revealed a strong positive correlation between Self-Efficacy (Classroom

management) and Self-Efficacy (Instructional strategies) factors, which seem consistent with previous research. In addition, another significant finding was the correlations between teacher Self-efficacy (Classroom management; Instructional strategies) and both teacher Well-being and Job satisfaction levels. The substantive finding to emerge from this study is that it seemed that Well-being, Self-control, Self-efficacy (Instructional Strategies), Self-efficacy (Classroom Management), and Job satisfaction factors, perhaps reflective of the cultural context, might best capture the experiences of teachers in the context of Kazakhstan. Though this is not conclusive, further large-scale studies in the context of Kazakhstan and Central Asia need to verify this speculative claim.

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Appendices

Appendix A

Сипаттық эмоционалдық зияткерлік сауалнамасы

1. Эмоциямды сөзбен жеткізу мен үшін қиындық тудырмайды.	1	2	3	4	5	6	7
2. Көбінесе басқа адамның көзқарасымен қарау маған қиынға соғады.	1	2	3	4	5	6	7
3. Жалпы, мен мотивациясы жоғары адаммын.	1	2	3	4	5	6	7
4. Мен әдетте өз эмоцияларымды реттей алмаймын.	1	2	3	4	5	6	7
5. Жалпы мен өмірді қызық деп санамаймын.	1	2	3	4	5	6	7
6. Мен адамдармен тиімді қарым-қатынас жасай аламын.	1	2	3	4	5	6	7
7. Мен өз ойымды жиі өзгертуге бейіммін.	1	2	3	4	5	6	7
8. Көбінесе мен қандай эмоцияны сезініп жатқанымды түсіне алмаймын.	1	2	3	4	5	6	7
9. Менде бірқатар жақсы қасиеттер бар екенін сезінемін.	1	2	3	4	5	6	7
10. Мен өз құқығымды қорғауға жиі қиналамын.	1	2	3	4	5	6	7
11. Мен әдетте басқа адамдардың сезімдеріне әсер ете аламын.	1	2	3	4	5	6	7
12. Жалпы, мен көп нәрсеге бұлыңғыр көзқараспен қараймын.	1	2	3	4	5	6	7
13. Менің жақындарым мені оларға дұрыс қарайды деп жиі шағымданады.	1	2	3	4	5	6	7
14. Мен өз өмірімді жағдайларға байланысты реттеуге жиі қиналамын.	1	2	3	4	5	6	7
15. Жалпы, мен күйзеліске төзе аламын.	1	2	3	4	5	6	7
16. Маған жақын адамдарға деген сүйіспеншілігімді көрсету қиынға соғады.	1	2	3	4	5	6	7
17. Мен әдетте «біреудің орнында болып», оның эмоцияларын сезіне аламын.	1	2	3	4	5	6	7
18. Маған әдетте мотивацияны сақтау қиынға соғады.	1	2	3	4	5	6	7
19. Егер қаласам эмоцияларымды басқарудың жолдарын таба аламын.	1	2	3	4	5	6	7
20. Жалпы, мен өз өміріме ризамын.	1	2	3	4	5	6	7
21. Мен өзімді жақсы келіссөздер жүргізушісі ретінде сипаттар едім.	1	2	3	4	5	6	7
22. Мен жағдайларға араласуға бейіммін, содан кейін олардан шыға алмайтыныма өкінемін.	1	2	3	4	5	6	7
23. Мен жиі үзіліс жасап, өз сезімдерім туралы ойлаймын.	1	2	3	4	5	6	7
24. Мен өзімнің күшті тұлға екеніме сенімдімін.	1	2	3	4	5	6	7
25. Мен өзімнің дұрыс екенімді білсем де кері шегінуге бейіммін.	1	2	3	4	5	6	7
26. Менің ойымша, мен басқа адамдардың сезімдеріне аздап болса да әсер етпеймін.	1	2	3	4	5	6	7
27. Мен өмірімде бәрі жақсы болатынына сенемін.	1	2	3	4	5	6	7
28. Маған жақын адамдармен де жақсы қарым-қатынас орнату қиынға соғады.	1	2	3	4	5	6	7
29. Жалпы, мен жаңа ортаға бейімделе аламын.	1	2	3	4	5	6	7
30. Басқалар менің сабырлылығыма таңданады.	1	2	3	4	5	6	7

Table A1. Kazakh Translation of TEIQue

Опросник черты эмоционального интеллекта

1. Мне не составляет труда выражать свои эмоции словами.	1	2	3	4	5	6	7
2. Обычно мне сложно увидеть ситуацию глазами другого человека.	1	2	3	4	5	6	7
3. В целом, я весьма мотивированный человек.	1	2	3	4	5	6	7
4. Обычно мне сложно управлять своими эмоциями.	1	2	3	4	5	6	7
5. Как правило, я не считаю жизнь приятной.	1	2	3	4	5	6	7
6. Я могу ладить с людьми.	1	2	3	4	5	6	7
7. Я склонен (склонна) часто менять свое мнение.	1	2	3	4	5	6	7
8. Часто я не могу понять, какие эмоции испытываю в данный момент.	1	2	3	4	5	6	7
9. Я думаю, что обладаю рядом хороших качеств.	1	2	3	4	5	6	7
10. Мне бывает трудно отстаивать свои права.	1	2	3	4	5	6	7
11. В целом у меня мрачные представления о многих вещах.	1	2	3	4	5	6	7
12. Мои близкие часто жалуются, что я отношусь к ним не так, как нужно.	1	2	3	4	5	6	7
13. Мне часто бывает сложно приспособить свою жизнь к обстоятельствам.	1	2	3	4	5	6	7
14. Зачастую мне сложно подстраиваться под обстоятельства.	1	2	3	4	5	6	7
15. В целом, я могу справиться со стрессом.	1	2	3	4	5	6	7
16. Часто мне бывает сложно проявлять свои чувства к близким.	1	2	3	4	5	6	7
17. Я обычно могу «почувствовать себя в чужой шкуре» и испытать чужие эмоции.	1	2	3	4	5	6	7
18. Обычно мне сложно поддерживать свою мотивацию.	1	2	3	4	5	6	7
19. Обычно, если я захочу, то способен (способна) контролировать свои эмоции.	1	2	3	4	5	6	7
20. В целом я доволен (довольна) своей жизнью.	1	2	3	4	5	6	7
21. Я характеризовал (-ла) бы себя как хорошего переговорщика.	1	2	3	4	5	6	7
22. Я склонен (склонна) ввязываться в ситуации, а потом жалеть, что не могу из них выпутаться.	1	2	3	4	5	6	7
23. Я обычно беру паузу, чтобы подумать о своих чувствах .	1	2	3	4	5	6	7
24. Я уверен (уверена), что я сильная личность.	1	2	3	4	5	6	7
25. Я склонен (склонна) отступить, даже если знаю, что прав (права).	1	2	3	4	5	6	7
26. Мне кажется, что я не имею ни малейшего влияния на чувства других людей.	1	2	3	4	5	6	7
27. Обычно я верю в то, что все в моей жизни сложится как нельзя лучше.	1	2	3	4	5	6	7
28. Мне сложно наладить связи даже с близкими людьми.	1	2	3	4	5	6	7
29. Как правило, я могу адаптироваться к новым условиям.	1	2	3	4	5	6	7
30. Другие восхищаются моим спокойствием.	1	2	3	4	5	6	7

Table A2. Russian Translation of TEIQue

Appendix B

Өзіндік тиімділік сауалнамасы

Сыныпты басқару	1. Студенттерді сынып ережелерін сақтауға шақырамын. 2. Бұзақы оқушыны тыныштандырамын. 3. Оқушылардың мінез-құлықын нақтылаймын. 4. Бұзақы мінез-құлықты бақылаймын.
Нұсқау стратегиялары	5. Оқушыларыма жақсы сұрақтар құрастырамын. 6. Өртүрлі бағалау стратегияларын қолданамын. 7. Оқушылар шатасқан кезде оларға түсініктеме беремін. 8. Өртүрлі оқыту стратегияларын керектенемін.
Оқушылардың қатысуы	9. Оқушыларға сыни тұрғыдан ойлауға көмектесемін. 10. Оқушыларға оқуды бағалауға көмектесемін. 11. Қызығушылықтары төмен оқушыларды ынталандырамын. 12. Оқушыларды жақсы жұмыс істей алатындарына сендіремін.

Table B1. Kazakh Translation of Self-Efficacy Questionnaire

Опросник самоэффективности

Управление классом	1. Заставьте учеников соблюдать правила в классе. 2. Спокойный ученик, который нарушает правила. 3. Четко сформулируйте ожидания относительно поведения. 4. Контроль деструктивного поведения.
Учебные стратегии	5. Составьте хорошие вопросы для моих учеников. 6. Используйте различные стратегии оценки. 7. Дайте альтернативные объяснения, если учащиеся запутались. 8. Разнообразьте учебные стратегии.
Участие студентов	9. Помогите учащимся мыслить критически. 10. Помогите учащимся ценить учебу. 11. Мотивируйте студентов, которые проявляют низкий интерес. 12. Убедите учащихся поверить в то, что они могут преуспеть.

Table B2. Russian Translation of Self-Efficacy Questionnaire

Appendix C

Жұмысқа қанағаттану сауалнамасы

-
1. Мұғалім болғанымға өкінемін.
 2. Басқа мамандық таңдаған дұрыс болар еді.
 3. Мұғалім болудың артықшылығы кемшіліктерден басым екені анық.
 4. Егер мен қайтадан шешім қабылдай алсам, мен әлі де мұғалім болар едім.
 5. Біздің қоғамда мұғалім мамандығы бағаланады деп ойлаймын.
 6. Жалпы мен өз жұмысыма қанағаттанамын.
-

Table C1. Kazakh Translation of Job Satisfaction Questionnaire

Опросник удовлетворенности работой

-
1. Я сожалею о том, что стал учителем.
 2. Лучше было бы выбрать другую профессию.
 3. Преимущества работы учителем явно перевешивают недостатки.
 4. Если бы я мог снова решить, я бы все равно был учителем.
 5. Считаю, что профессия учителя ценится в нашем обществе.
 6. В целом, я доволен своей работой.
-

Table C2. Russian Translation of Job Satisfaction Questionnaire

Appendix D

R Code

```
#### Akhyerkye Data Analysis ####
```

```
rm(list=ls())
```

```
# Set link to folder on computer: (set working directory)
```

```
setwd("C:/Aidka's/NUGSE/Thesis/Data")
```

```
dir()
```

```
# download main dataset
```

```
inputData <- read.csv(file="C:/Aidka's/NUGSE/Thesis/Data/Data_Akhyerkye.csv")
```

```
df <- read.csv("C:/Aidka's/NUGSE/Thesis/Data/Data_Akhyerkye.csv")
```

```
dim(df) # 107, 75
```

```
head(df)
```

```
summary(df)
```

```
colnames(df)
```

```
df <- df[, 17:ncol(df)]
```

```
head(df)

apply(df, 2, FUN=function(x)sum(is.na(x)))

# Descriptive statistics

##### AGE #####

table(df$Q1)

round(mean(df$Q1), 2)

round(sd(df$Q1), 2)

# Examine data structure

apply(df, 2, FUN=function(x)str(x))

# Recode of RU, KAZ

table(df$UserLanguage)

# EN KAZ RU

# 7 44 56

install.packages("car")

library("car")
```

```
df$UserLanguage <- car::recode(df$UserLanguage,  
    "'RU' = 1;  
    'KAZ' = 2;  
    'EN' = 3")  
  
table(df$UserLanguage)  
  
colnames(df) # remove columns 5 ("Q4") and six ("Q4_6_TEXT") for major  
  
df <- df[, -c(5,6)]  
  
colnames(df)  
  
# School type is Q7  
  
table(df$Q7) # 97 public, 10 private.  
  
# Check school number  
  
unique(df$Q8) # 69 unique schools  
  
df <- df[, -8]  
  
dim(df) # 107 cases, 56 columns  
  
apply(df, 2, FUN=function(x)str(x))
```

```
# Remove email;

df <- df[, -56]

dim(df) # 107 cases, 55 items

apply(df, 2, FUN=function(x)str(x))

#### Descriptive statistics ####

# All frequencies

apply(df, 2, FUN=function(x)table(x))

round(apply(df, 2, FUN=function(x)mean(x)), 2)

round(apply(df, 2, FUN=function(x)sd(x)), 2)

install.packages("psych")

library("psych")

round(apply(df, 2, FUN=function(x)psych::skew(x)), 2) # above |2.00| is problematic.

#### Quantitative Items ####

# Wellbeing, self-control, emotionality, and sociality
```

```
# Note, 3, 14R, and 29 18R contribute to global TIE.
```

```
##### Wellbeing: 5R, 20, 9, 24, 12R, 27
```

```
##### Self-Control: 4R, 19, 7R, 22R, 15, 30
```

```
##### Emotionality: 1, 16R, 2R, 17, 8R, 23, 13R, 28R
```

```
##### Sociality: 6, 21, 10R, 25R, 11, 26R
```

```
colnames(df)
```

```
reversal.item.logical <- colnames(df) %in% c("Q9_14", "Q9_5", "Q9_12", "Q9_4", "Q9_7",  
      "Q9_22", "Q9_16", "Q9_2", "Q9_8", "Q9_13",  
      "Q9_28", "Q9_10", "Q9_25", "Q9_26", "Q9_18")
```

```
sum(reversal.item.logical) # 15
```

```
to.reverse.item.n <- which(reversal.item.logical == T)
```

```
print(to.reverse.item.n)
```

```
colnames(df)[to.reverse.item.n]
```

```
# reverse all items at once
```



```
apply(df[to.reverse.item.n], 2, FUN=function(x)table(x))
```

```
head(df[to.reverse.item.n])
```

```
df[to.reverse.item.n] <- apply(df[to.reverse.item.n], 2, FUN=function(x)car::recode(x,"1=7;2=6;3=5;4=3;5=3;6=2;7=1"))
```

```
head(df[to.reverse.item.n])
```

```
# reverse code job satisfaction items
```

```
table(df$Q10_1)
```

```
df$Q10_1 <- car::recode(df$Q10_1, "1=4;2=3;3=2;4=1")
```

```
table(df$Q10_1)
```

```
table(df$Q10_2)
```

```
df$Q10_2 <- car::recode(df$Q10_2, "1=4;2=3;3=2;4=1")
```

```
table(df$Q10_2)
```

```
#### Actual Descriptives!! ####
```

```
round(apply(df, 2, FUN=function(x)psych::skew(x)), 2)
```

psych::describe(df) # just include columns item name, mean, sd, min, max, and skew *****

Modelling

install.packages("lavaan")

library("lavaan")

colnames(df)

MLM.2 <- 'Wellbeing =~ Q9_5 + Q9_20 + Q9_9 + Q9_24 + Q9_12 + Q9_27

Selfcontrol =~ Q9_4 + Q9_19 + Q9_7 + Q9_22 + Q9_15 + Q9_30

Emotionality =~ Q9_1 + Q9_16 + Q9_2 + Q9_17 + Q9_8 + Q9_23 + Q9_13 + Q9_28

Sociability =~ Q9_6 + Q9_21 + Q9_10 + Q9_25 + Q9_11 + Q9_26

Selfefficacy.C =~ X.Q11_1 + X.Q11_2 + X.Q11_3 + X.Q11_4

Selfefficacy.I =~ X.Q11_5 + X.Q11_6 + X.Q11_7 + X.Q11_8

Selfefficacy.E =~ X.Q11_9 + X.Q11_10 + X.Q11_11 + X.Q11_12

Jobsatisfaction =~ Q10_1 + Q10_2 + Q10_3 + Q10_4 + Q10_5 + Q10_6'

(a) Model 2 ICC and DE

```
fit2c <- lavaan::cfa(MLM.2, data=df, std.lv=TRUE, estimator = "ML") # Necessary for bi-factor model

summary(fit2c, fit.measures=TRUE, standardized = T)

estim.M1 <- parameterestimates(fit2c, standardized=TRUE)

print(estim.M1[,c(1,2,3,7,11)])

fit.summary<- summary(fit2c, fit.measures=TRUE, standardized = T)

M.fitc <- fit.summary$FIT

print(M.fitc)

install.packages("semTools")

library("semTools")

round(semTools::moreFitIndices(fit2c), 3)

# Note, 3, 14R, and 29 18R contribute to global TIE.

#### Wellbeing: 5R, 20, 9, 24, 12R, 27

#### Self-Control: 4R, 19, 7R, 22R, 15, 30

#### Emotionality: 1, 16R, 2R, 17, 8R, 23, 13R, 28R

#### Sociality: 6, 21, 10R, 25R, 11, 26R
```

#	lhs op	rhs	pvalue	std.all	
# 1	Wellbeing =~	Q9_5	0.154	0.145	# reversed
# 2	Wellbeing =~	Q9_20	0.000	0.591	
# 3	Wellbeing =~	Q9_9	0.000	0.592	
# 4	Wellbeing =~	Q9_24	0.000	0.395	
# 5	Wellbeing =~	Q9_12	0.000	0.366	
# 6	Wellbeing =~	Q9_27	0.000	0.530	
# 7	Selfcontrol =~	Q9_4	0.201	0.129	# reversed
# 8	Selfcontrol =~	Q9_19	0.000	-0.638	
# 9	Selfcontrol =~	Q9_7	0.189	0.133	# reversed
# 10	Selfcontrol =~	Q9_22	0.517	0.066	# reversed
# 11	Selfcontrol =~	Q9_15	0.000	-0.572	
# 12	Selfcontrol =~	Q9_30	0.000	-0.469	
# 13	Emotionality =~	Q9_1	0.637	-0.051	

# 14	Emotionality =~	Q9_16	0.000	-0.651	# reversed
# 15	Emotionality =~	Q9_2	0.048	-0.211	# reversed
# 16	Emotionality =~	Q9_17	0.156	0.153	
# 17	Emotionality =~	Q9_8	0.000	-0.422	# reversed
# 18	Emotionality =~	Q9_23	0.573	0.061	
# 19	Emotionality =~	Q9_13	0.000	-0.614	# reversed
# 20	Emotionality =~	Q9_28	0.000	-0.624	# reversed
# 21	Sociability =~	Q9_6	0.014	-0.239	
# 22	Sociability =~	Q9_21	0.931	-0.008	
# 23	Sociability =~	Q9_10	0.000	-0.651	# reversed
# 24	Sociability =~	Q9_25	0.001	-0.329	# reversed
# 25	Sociability =~	Q9_11	0.021	0.224	
# 26	Sociability =~	Q9_26	0.004	-0.283	# reversed
# 27	Selfefficacy.C =~	X.Q11_1	0.000	0.524	
# 28	Selfefficacy.C =~	X.Q11_2	0.000	0.607	

# 29	Selfefficacy.C =~	X.Q11_3	0.000	0.753
# 30	Selfefficacy.C =~	X.Q11_4	0.000	0.877
# 31	Selfefficacy.I =~	X.Q11_5	0.000	0.589
# 32	Selfefficacy.I =~	X.Q11_6	0.000	0.592
# 33	Selfefficacy.I =~	X.Q11_7	0.000	0.598
# 34	Selfefficacy.I =~	X.Q11_8	0.000	0.684
# 35	Selfefficacy.E =~	X.Q11_9	0.000	0.738
# 36	Selfefficacy.E =~	X.Q11_10	0.000	0.855
# 37	Selfefficacy.E =~	X.Q11_11	0.000	0.578
# 38	Selfefficacy.E =~	X.Q11_12	0.000	0.537
# 39	Jobsatisfaction =~	Q10_1	0.002	0.318
# 40	Jobsatisfaction =~	Q10_2	0.000	0.529
# 41	Jobsatisfaction =~	Q10_3	0.151	0.151
# 42	Jobsatisfaction =~	Q10_4	0.000	0.872
# 43	Jobsatisfaction =~	Q10_5	0.000	0.439

```
# 44 Jobsatisfaction =~      Q10_6 0.000 0.702

MLM.2 <- 'Wellbeing    =~ Q9_20 + Q9_9 + Q9_24 + Q9_12 + Q9_27

    Selfcontrol    =~ Q9_19 + Q9_15 + Q9_30

    Emotionality   =~ Q9_1 + Q9_17 + Q9_23

    Sociability    =~ Q9_6 + Q9_21 + Q9_11

    Selfefficacy.C =~ X.Q11_1 + X.Q11_2 + X.Q11_3 + X.Q11_4

    Selfefficacy.I =~ X.Q11_5 + X.Q11_6 + X.Q11_7 + X.Q11_8

    Selfefficacy.E =~ X.Q11_9 + X.Q11_10 + X.Q11_11 + X.Q11_12

    Jobsatisfaction =~ Q10_1 + Q10_2 + Q10_3 + Q10_4 + Q10_5 + Q10_6'
```

(a) Model 2 ICC and DE

```
fit2c <- lavaan::cfa(MLM.2, data=df, std.lv=TRUE, estimator = "ML") # Necessary for bi-factor model

summary(fit2c, fit.measures=TRUE, standardized = T)

estim.M1 <- parameterestimates(fit2c, standardized=TRUE)

print(estim.M1[,c(1,2,3,7,11)])

fit.summary<- summary(fit2c, fit.measures=TRUE, standardized = T)
```

```
M.fitc <- fit.summary$FIT
```

```
print(M.fitc)
```

```
round(semTools::moreFitIndices(fit2c), 3)
```

```
# lhs op      rhs pvalue std.all
# 1  Wellbeing =~      Q9_20 0.000 0.579
# 2  Wellbeing =~      Q9_9 0.000 0.695
# 3  Wellbeing =~      Q9_24 0.000 0.385 # too low
# 4  Wellbeing =~      Q9_12 0.104 0.165 # too low
# 5  Wellbeing =~      Q9_27 0.000 0.508

# 6  Selfcontrol =~     Q9_19 0.000 0.650
# 7  Selfcontrol =~     Q9_15 0.000 0.708
# 8  Selfcontrol =~     Q9_30 0.001 0.347 # too low

# 9  Emotionality =~    Q9_1 0.211 0.274 # too low
# 10 Emotionality =~    Q9_17 0.268 0.160 # too low
```


# 11	Emotionality =~	Q9_23	0.290	0.132	# too low (wipe out)
# 12	Sociability =~	Q9_6	0.006	0.503	
# 13	Sociability =~	Q9_21	0.096	0.166	# too low (wipe out)
# 14	Sociability =~	Q9_11	0.102	0.159	# too low (wipe out)
# 15	Selfefficacy.C =~	X.Q11_1	0.000	0.526	
# 16	Selfefficacy.C =~	X.Q11_2	0.000	0.618	
# 17	Selfefficacy.C =~	X.Q11_3	0.000	0.758	
# 18	Selfefficacy.C =~	X.Q11_4	0.000	0.866	
# 19	Selfefficacy.I =~	X.Q11_5	0.000	0.560	
# 20	Selfefficacy.I =~	X.Q11_6	0.000	0.565	
# 21	Selfefficacy.I =~	X.Q11_7	0.000	0.611	
# 22	Selfefficacy.I =~	X.Q11_8	0.000	0.718	
# 23	Selfefficacy.E =~	X.Q11_9	0.000	0.746	

24 Selfefficacy.E =~ X.Q11_10 0.000 0.840

25 Selfefficacy.E =~ X.Q11_11 0.000 0.582

26 Selfefficacy.E =~ X.Q11_12 0.000 0.542

27 Jobsatisfaction =~ Q10_1 0.003 0.305

28 Jobsatisfaction =~ Q10_2 0.000 0.525

29 Jobsatisfaction =~ Q10_3 0.148 0.152 # too low

30 Jobsatisfaction =~ Q10_4 0.000 0.873

31 Jobsatisfaction =~ Q10_5 0.000 0.437 # too low

32 Jobsatisfaction =~ Q10_6 0.000 0.707

MLM.2 <- 'Wellbeing =~ Q9_20 + Q9_9 + Q9_27

Selfcontrol =~ Q9_19 + Q9_15

Selfefficacy.C =~ X.Q11_1 + X.Q11_2 + X.Q11_3 + X.Q11_4

Selfefficacy.I =~ X.Q11_5 + X.Q11_6 + X.Q11_7 + X.Q11_8

Selfefficacy.E =~ X.Q11_9 + X.Q11_10 + X.Q11_11 + X.Q11_12

Jobsatisfaction =~ Q10_1 + Q10_2 + Q10_4 + Q10_6'

```
##### (a) Model 2 ICC and DE #####  
fit2c <- lavaan::cfa(MLM.2, data=df, std.lv=TRUE, estimator = "ML") # Necessary for bi-factor model  
summary(fit2c, fit.measures=TRUE, standardized = T)  
estim.M1 <- parameterestimates(fit2c, standardized=TRUE)  
print(estim.M1[,c(1,2,3,7,11)])  
  
fit.summary <- summary(fit2c, fit.measures=TRUE, standardized = T)  
M.fitc <- fit.summary$FIT  
print(M.fitc) # CFI is .849. Needs to be .90 or above.  
round(semTools::moreFitIndices(fit2c), 3)  
  
# correlation between Selfefficacy.I and Selfefficacy.E is r = .844, merge the two.  
  
MLM.2 <- 'Wellbeing =~ Q9_20 + Q9_9 + Q9_27  
Selfcontrol =~ Q9_19 + Q9_15'
```

$$\text{Selfefficacy.C} \sim \text{X.Q11}_1 + \text{X.Q11}_2 + \text{X.Q11}_3 + \text{X.Q11}_4$$

$$\text{Selfefficacy.IE} \sim \text{X.Q11}_5 + \text{X.Q11}_6 + \text{X.Q11}_7 + \text{X.Q11}_8 + \text{X.Q11}_9 + \text{X.Q11}_{10} + \text{X.Q11}_{11} + \text{X.Q11}_{12}$$

$$\text{Jobsatisfaction} \sim \text{Q10}_1 + \text{Q10}_2 + \text{Q10}_4 + \text{Q10}_6$$

(a) Model 2 ICC and DE

```
fit2c <- lavaan::cfa(MLM.2, data=df, std.lv=TRUE, estimator = "ML") # Necessary for bi-factor model
```

```
summary(fit2c, fit.measures=TRUE, standardized = T)
```

```
estim.M1 <- parameterestimates(fit2c, standardized=TRUE)
```

```
print(estim.M1[,c(1,2,3,7,11)])
```

```
fit.summary<- summary(fit2c, fit.measures=TRUE, standardized = T)
```

```
M.fitc <- fit.summary$FIT
```

```
print(M.fitc) # CFI is .813, even lower.
```

```
round(semTools::moreFitIndices(fit2c), 3)
```

```
# remove lowest loading item:18 Jobsatisfaction =~Q10_1 which is .315
```

```
MLM.2 <- 'Wellbeing    =~ Q9_20 + Q9_9 + Q9_27

Selfcontrol    =~ Q9_19 + Q9_15

Selfefficacy.C =~ X.Q11_1 + X.Q11_2 + X.Q11_3 + X.Q11_4

Selfefficacy.IE =~ X.Q11_5 + X.Q11_6 + X.Q11_7 + X.Q11_8 + X.Q11_9 + X.Q11_10 + X.Q11_11 + X.Q11_12

Jobsatisfaction =~ Q10_2 + Q10_4 + Q10_6'
```

(a) Model 2 ICC and DE

```
fit2c <- lavaan::cfa(MLM.2, data=df, std.lv=TRUE, estimator = "ML") # Necessary for bi-factor model
```

```
summary(fit2c, fit.measures=TRUE, standardized = T)
```

```
estim.M1 <- parameterestimates(fit2c, standardized=TRUE)
```

```
print(estim.M1[,c(1,2,3,7,11)])
```

```
fit.summary<- summary(fit2c, fit.measures=TRUE, standardized = T)
```

```
M.fitc <- fit.summary$FIT
```

```
print(M.fitc) # CFI is .821, slight improvement!
```

```
install.packages("semTools")
```

```
library("semTools")
```

```
round(semTools::moreFitIndices(fit2c), 3)
```

```
# remove X.Q11_7 as lowest loading
```

```
MLM.2 <- 'Wellbeing =~ Q9_20 + Q9_9 + Q9_27
```

```
Selfcontrol =~ Q9_19 + Q9_15
```

```
Selfefficacy.C =~ X.Q11_1 + X.Q11_2 + X.Q11_3 + X.Q11_4
```

```
Selfefficacy.IE =~ X.Q11_5 + X.Q11_6 + X.Q11_8 + X.Q11_9 + X.Q11_10 + X.Q11_11 + X.Q11_12
```

```
Jobsatisfaction =~ Q10_2 + Q10_4 + Q10_6'
```

```
##### (a) Model 2 ICC and DE #####
```

```
fit2c <- lavaan::cfa(MLM.2, data=df, std.lv=TRUE, estimator = "ML") # Necessary for bi-factor model
```

```
summary(fit2c, fit.measures=TRUE, standardized = T)
```

```
estim.M1 <- parameterestimates(fit2c, standardized=TRUE)
```

```
print(estim.M1[,c(1,2,3,7,11)])
```

```
fit.summary<- summary(fit2c, fit.measures=TRUE, standardized = T)
```

```

M.fitc <- fit.summary$FIT

print(M.fitc) # CFI is .837, slight improvement!

round(semTools::moreFitIndices(fit2c), 3)

# remove 17 Jobsatisfaction =~ Q10_2 0.000 0.508

MLM.2 <- 'Wellbeing =~ Q9_20 + Q9_9 + Q9_27
        Selfcontrol =~ Q9_19 + Q9_15
        Selfefficacy.C =~ X.Q11_1 + X.Q11_2 + X.Q11_3 + X.Q11_4
        Selfefficacy.IE =~ X.Q11_5 + X.Q11_6 + X.Q11_8 + X.Q11_9 + X.Q11_10 + X.Q11_11 + X.Q11_12
        Jobsatisfaction =~ Q10_4 + Q10_6'

##### (a) Model 2 ICC and DE #####

fit2c <- lavaan::cfa(MLM.2, data=df, std.lv=TRUE, estimator = "ML") # Necessary for bi-factor model

summary(fit2c, fit.measures=TRUE, standardized = T)

estim.M1 <- parameterestimates(fit2c, standardized=TRUE)

print(estim.M1[,c(1,2,3,7,11)])

```

```
fit.summary<- summary(fit2c, fit.measures=TRUE, standardized = T)
```

```
M.fitc <- fit.summary$FIT
```

```
print(M.fitc) # CFI is .837, slight improvement!
```

```
round(semTools::moreFitIndices(fit2c), 3)
```

```
MLM.2 <- 'Wellbeing =~ Q9_20 + Q9_9 + Q9_27
```

```
Selfcontrol =~ Q9_19 + Q9_15
```

```
Selfefficacy.C =~ X.Q11_1 + X.Q11_2 + X.Q11_3 + X.Q11_4
```

```
Selfefficacy.I =~ X.Q11_5 + X.Q11_6 + X.Q11_7 + X.Q11_8
```

```
Jobsatisfaction =~ Q10_1 + Q10_2 + Q10_4 + Q10_6'
```

```
##### (a) Model 2 ICC and DE #####
```

```
fit2c <- lavaan::cfa(MLM.2, data=df, std.lv=TRUE, estimator = "ML") # Necessary for bi-factor model
```

```
summary(fit2c, fit.measures=TRUE, standardized = T)
```

```
estim.M1 <- parameterestimates(fit2c, standardized=TRUE)
```

```
print(estim.M1[,c(1,2,3,7,11)])
```



```

fit.summary <- summary(fit2c, fit.measures=TRUE, standardized = T)

M.fitc <- fit.summary$FIT

print(M.fitc) # CFI is .841. Needs to be .90 or above.

round(semTools::moreFitIndices(fit2c), 3)

# 14 Jobsatisfaction =~ Q10_1 0.002 0.319, remove due to low loading!

MLM.2 <- 'Wellbeing =~ Q9_20 + Q9_9 + Q9_27

        Selfcontrol =~ Q9_19 + Q9_15

        Selfefficacy.C =~ X.Q11_1 + X.Q11_2 + X.Q11_3 + X.Q11_4

        Selfefficacy.I =~ X.Q11_5 + X.Q11_6 + X.Q11_7 + X.Q11_8

        Jobsatisfaction =~ Q10_2 + Q10_4 + Q10_6'

##### (a) Model 2 ICC and DE #####

fit2c <- lavaan::cfa(MLM.2, data=df, std.lv=TRUE, estimator = "ML") # Necessary for bi-factor model

summary(fit2c, fit.measures=TRUE, standardized = T)

```

```

estim.M1 <- parameterestimates(fit2c, standardized=TRUE)

print(estim.M1[,c(1,2,3,7,11)])

fit.summary <- summary(fit2c, fit.measures=TRUE, standardized = T)

M.fitc <- fit.summary$FIT

print(M.fitc) # CFI is .861. Needs to be .90 or above.

round(semTools::moreFitIndices(fit2c), 3)

# 14 Jobsatisfaction =~ Q10_2 0.000 0.508 is lowest loading. remove!

MLM.2 <- 'Wellbeing =~ Q9_20 + Q9_9 + Q9_27

Selfcontrol =~ Q9_19 + Q9_15

Selfefficacy.C =~ X.Q11_1 + X.Q11_2 + X.Q11_3 + X.Q11_4

Selfefficacy.I =~ X.Q11_5 + X.Q11_6 + X.Q11_7 + X.Q11_8

Jobsatisfaction =~ Q10_4 + Q10_6'

##### (a) Model 2 ICC and DE #####

fit2c <- lavaan::cfa(MLM.2, data=df, std.lv=TRUE, estimator = "ML") # Necessary for bi-factor model

```

```
summary(fit2c, fit.measures=TRUE, standardized = T)
```

```
estim.M1 <- parameterestimates(fit2c, standardized=TRUE)
```

```
print(estim.M1[,c(1,2,3,7,11)])
```

```
fit.summary <- summary(fit2c, fit.measures=TRUE, standardized = T)
```

```
M.fitc <- fit.summary$FIT
```

```
print(M.fitc) # CFI is .861. Needs to be .90 or above.
```

```
round(semTools::moreFitIndices(fit2c), 3)
```

```
# 12 Selfefficacy.I =~ X.Q11_7 0.000 0.584, remove
```

```
MLM.2 <- 'Wellbeing =~ Q9_20 + Q9_9 + Q9_27
```

```
Selfcontrol =~ Q9_19 + Q9_15
```

```
Selfefficacy.C =~ X.Q11_1 + X.Q11_2 + X.Q11_3 + X.Q11_4
```

```
Selfefficacy.I =~ X.Q11_5 + X.Q11_6 + X.Q11_8
```

```
Jobsatisfaction =~ Q10_4 + Q10_6'
```

```
##### (a) Model 2 ICC and DE #####

fit2c <- lavaan::cfa(MLM.2, data=df, std.lv=TRUE, estimator = "ML") # Necessary for bi-factor model

summary(fit2c, fit.measures=TRUE, standardized = T)

estim.M1 <- parameterestimates(fit2c, standardized=TRUE)

print(estim.M1[,c(1,2,3,7,11)])

fit.summary <- summary(fit2c, fit.measures=TRUE, standardized = T)

M.fitc <- fit.summary$FIT

print(M.fitc) # CFI is 0.885 Needs to be .90 or above.

round(semTools::moreFitIndices(fit2c), 3)

# 6  Selfefficacy.C =~ X.Q11_1 0.000 0.531, remove!

MLM.2 <- 'Wellbeing =~ Q9_20 + Q9_9 + Q9_27

Selfcontrol =~ Q9_19 + Q9_15

Selfefficacy.C =~ X.Q11_2 + X.Q11_3 + X.Q11_4

Selfefficacy.I =~ X.Q11_5 + X.Q11_6 + X.Q11_8'
```

Jobsatisfaction =~ Q10_4 + Q10_6'

(a) Model 2 ICC and DE

fit2c <- lavaan::cfa(MLM.2, data=df, std.lv=TRUE, estimator = "ML") # Necessary for bi-factor model

summary(fit2c, fit.measures=TRUE, standardized = T)

estim.M1 <- parameterestimates(fit2c, standardized=TRUE)

print(estim.M1[,c(1,2,3,7,11)]) ##### ***** Question 1

fit.summary <- summary(fit2c, fit.measures=TRUE, standardized = T)

M.fitc <- fit.summary\$FIT

print(M.fitc) # CFI is 0.885 Needs to be .90 or above.

round(semTools::moreFitIndices(fit2c), 3)

CTT::reliability(df[,colnames(df) %in% c("Q9_20","Q9_9","Q9_27")]) # .62

psych::alpha(df[,colnames(df) %in% c("Q9_19", "Q9_15")]) # .66

CTT::reliability(df[,colnames(df) %in% c("X.Q11_2", "X.Q11_3", "X.Q11_4")]) # .79

CTT::reliability(df[,colnames(df) %in% c("X.Q11_5", "X.Q11_6", "X.Q11_8")]) # .66

```
psych::alpha(df[,colnames(df) %in% c("Q10_4", "Q10_6")]) # .77
```

```
#####
```

```
# Structural model #
```

```
MLM.2 <- 'Wellbeing =~ Q9_20 + Q9_9 + Q9_27
```

```
    Selfcontrol =~ Q9_19 + Q9_15
```

```
    Selfefficacy.C =~ X.Q11_2 + X.Q11_3 + X.Q11_4
```

```
    Selfefficacy.I =~ X.Q11_5 + X.Q11_6 + X.Q11_8
```

```
    Jobsatisfaction =~ Q10_4 + Q10_6
```

```
    Selfefficacy.C ~ Wellbeing + Selfcontrol
```

```
    Selfefficacy.I ~ Wellbeing + Selfcontrol
```

```
    Jobsatisfaction ~ Wellbeing + Selfcontrol'
```

```
##### (a) Model 2 ICC and DE #####
```

```
fit2c <- lavaan::cfa(MLM.2, data=df, std.lv=TRUE, estimator = "ML") # Necessary for bi-factor model
```

```
summary(fit2c, fit.measures=TRUE, standardized = T)
```

```
estim.M1 <- parameterestimates(fit2c, standardized=TRUE)
```

```
print(estim.M1[,c(1,2,3,7,11)]) #***** This is for RQ3  
fit.summary <- summary(fit2c, fit.measures=TRUE, standardized = T)  
M.fitc <- fit.summary$FIT  
print(M.fitc)
```