

## **CHAPTER THREE**

### **METHODOLOGY OF THE STUDY**

#### **3.1 Introduction**

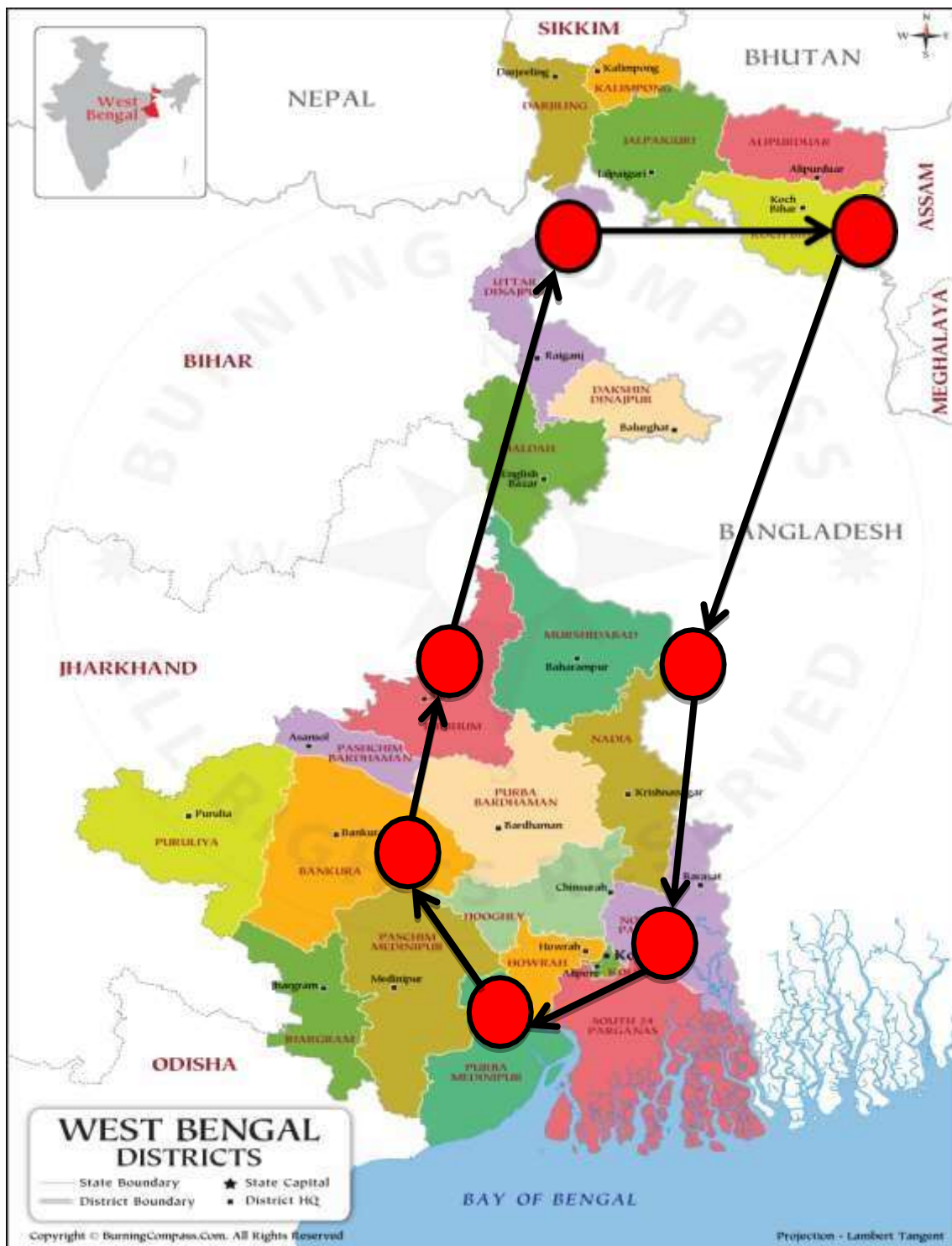
The review of the literature pertinent to this investigation was offered in the preceding chapter. Reviewing related literature enables us to get insight into how other researchers design their studies and gives us examples and models that are beneficial to our own research (Creswell, 2015). As per the review of related literature different research design identified by the researchers and those are incorporated in this chapter. One of these illustrations for researchers is research technique. The development of appropriate tools, systematic data collecting from relevant sources, method, technique and variable measurement are all governed by a set of rules and processes known as the research methodology.

#### **3.2 Context and purpose of the study**

The purpose of this study was to determine the relationship between emotional intelligence and social intelligence, as well as their impact on teaching style and professional commitment among secondary school teachers in seven districts of West Bengal, India. This study was conducted exclusively in government schools under the jurisdiction of the West Bengal Board of Secondary Education (WBBSE) in seven randomly chosen districts of West Bengal, namely Birbhum, Murshidabad, Purba Bardhamanan, Nadia, Hooghly, Cooch Behar, and North Dinajpur. Details of sample selection procedure given below (see Table 3.1). As study sample groups, only male and female teachers in the novice, experienced, and expert categories were considered. Figure 3.1 depicts the location map, which identifies where the study was conducted.

Figure 3.1

Location map



Overall, the purpose of this study was to identify teachers' emotional intelligence and social intelligence, as well as the impact of these two types of intelligence on teaching style and teacher dedication. However, none of the variables were directly or indirectly influenced, manipulated, or controlled. The present study examined gender differences in emotional and social intelligence. In addition, this research assessed the state of emotional and social intelligence in relation to teaching experience. Teaching experiences are professional teaching experiences. Here, novice teachers are those with 0 to 5 years of experience, experienced teachers have 5 to 10 years of experience, and expert teachers have more than 10 years of experience. The literature review revealed the need for emotional intelligence and social intelligence in the teaching profession, as well as the impact of these two types of intelligence on teaching styles and teacher dedication. Thus, pupils achieve personal and professional success. Due to this vacuum in the literature, the primary objective of this study was to investigate the link between emotional intelligence, social intelligence, teaching style, and teachers' professional dedication.

### **3.3 Roadmap of the Chapter**

Methodology chapter is most important chapter because it describes the processes used in the current investigation. The section of research primarily investigates the "why" and "how" of the choices made with regard to the sampling techniques, sample, population, research methods used for the study. This portion also explores the research philosophy, research design, research approach, data analysis strategies and procedures. It is also helps to look after the measurement of the variables associated with the study. The "research onion" framework (Saunders, Lewis & Thornhill, 2019) was applied in this case.

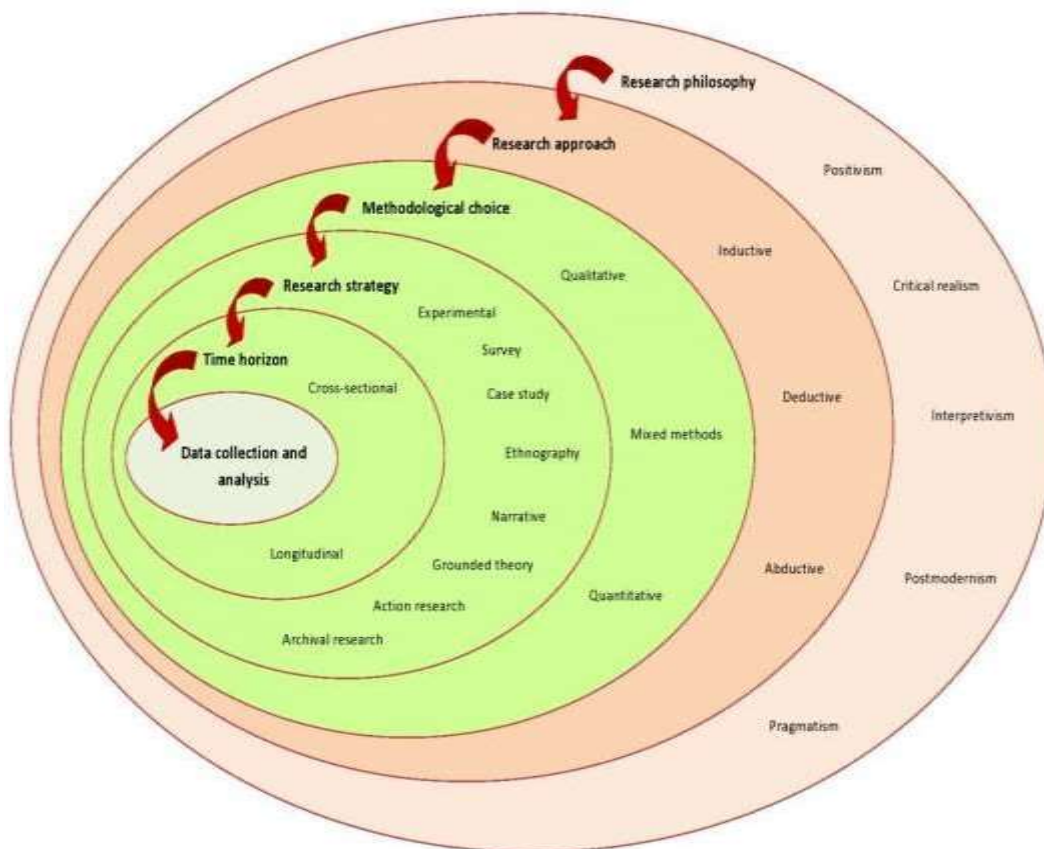
#### **3.3.1 Philosophical and methodological choices**

There are significant methodological choices are made to address the research questions of this study. This was accomplished using the "Research onion" structure (Saunders, Lewis, & Thornhill, 2019). Research onion facilitates the development of methodology and research design. It allows for the defence of each option and facilitates the formation of a consensus. The "research onion" paradigm explains how to select the optimal type of research to address specific research problems. This

"research onion" paradigm included six progressive layers (Saunders, Lewis, & Thornhill, 2019) (see Figure 3.2): i) research philosophy, ii) approach to theory building, iii) methodological choice(s), iv) research strategies, v) time horizon, and vi) tools and processes for data collection and data analysis. Significantly, every option made about the study must be in agreement with the objectives, questions, and purpose of the research. For the purpose of answering the study questions, these options must all be compatible.

**Figure 3.2**

*The "Research Onion" adapted from Saunders, Lewis, and Thornhill (2019, p. 130)*



### 3.3.2 Research paradigm and Research philosophy

The most essential components of research technique are the research paradigm and research philosophy. Understanding this research paradigm and philosophy is crucial for understanding the history of research. The three terms

comprising research philosophy are epistemology, ontology, and axiology. Epistemology is the study of the sources of information used to comprehend reality and truth. Ontology is the way of seeing reality and truth, while axiology is the contribution to inquiry. Axiology was composed of ethics and aesthetics. The research philosophy must describe the study's objectives and research questions. So, this research sought objective and quantifiable replies. This study's primary objective was to determine the relationship between emotional intelligence, social intelligence, teaching styles, and professional commitment. Therefore, positivism appears more appropriate (Mill, 1907). Positivism is associated with scientific processes and maintains that there is only one reality or truth. Positivism requires its adherents to study with impartiality and objectivity. Positivism emphasizes theories or hypotheses that can be tested via numerical analysis. According to the positivist paradigm, the ideas, opinions, and perceptions of study participants are gathered and measured with the belief that respondents' perceptions may reveal a great deal about how individuals think, behave, and act in a given scenario.

### **3.3.3 Research methodology**

This research is quantitative since it included factors that could be measured quantitatively. The systematic analysis of occurrences is achieved by the collection of measurable data and the use of statistical, mathematical, and quantitative study. Quantitative research, for instance, obtains data from samples using sampling techniques and the distribution of online questionnaires, polls, and surveys. While doing quantitative outcome research, the social sciences rely mostly on the aforementioned statistical methods to acquire quantitative data from the research study. In this research method, statisticians and researchers use mathematical theories and frameworks pertinent to the number being examined. Often, the templates for quantitative research are extensive, detailed, and even investigative. This study's methodology yielded accurate, statistical, and understandable results. Under the process of structured data gathering, bigger samples that correctly represent the total population were used. Due to the fact that the research questions were based on gaps in the corpus of literature, the gathered data were used to test ideas. Thus, this research used a logical methodology. In addition, the quantitative data obtained is used to verify hypotheses and test hypotheses using the deductive method employed in the confirmatory research technique.

### **3.3.4 Methodological alternatives**

According to the "research onion" layer, the researcher may decide the number of data analysis techniques to be employed in this inquiry. The research approach helps academics to methodically address research topics. The objective of this study was to assess the degree or strength of the relationship between the quantifiable research variables. By explaining the quantitative links between the study variables, the researcher was able to statistically quantify the viewpoint and respond to research questions. The researcher employed quantitative methodologies to address the study topics. This research aims to evaluate the effect of emotional intelligence and social intelligence on the teaching style and professional commitment of secondary school teachers, as well as the interrelationships between the two variables and how they influence teachers' teaching style and commitment. Obviously, the majority of the study's objectives are descriptive in nature. Since descriptive research is a fact-finding study with suitable and accurate data interpretation, it was used in this investigation. It emphasises the topic in hand, such as current situations, customs, conditions, or occurrences. In this study, no variables were altered by the researcher. In order to answer the research questions and meet the objectives of the study, a descriptive survey methodology was used.

This study methodology was judged appropriate owing to its capacity to explain the relationship between emotional intelligence, social intelligence, teaching style, and professional commitment. The descriptive method is used to describe observable relationships and circumstances. In addition, this technique is reasonable given the size of the population studied. According to the researchers, this technique is useful since it broadens the scope, depth, and importance of the study's findings. After a descriptive approach, a quantitative method was used to discover the interrelationships between the variables of the research. Using the Survey Research Method, the researcher will describe the current state of emotional and social intelligence among secondary school teachers and investigate the interaction between emotional and social intelligence, as well as their influence on teaching styles and professional commitment among secondary school teachers in West Bengal.

### **3.3.5 Research method**

Research strategy addresses the visible and practical aspects of research decision-making. In this descriptive research project, a survey was done on a sample that was supposed to be representative of a broader population. Do descriptive research to characterise the characteristics of a wider group of interest. A kind of study, descriptive research describes a population, circumstance, or phenomena. It focuses on answering the questions of how, what, when, and where. This is partly due to the fact that it is essential to know the scope of a study topic before investigating its root reasons. A descriptive investigation was conducted to establish the nature of the phenomenon. Survey research assists in the collection, summarization, presentation, and interpretation of data gathered over time. The primary objective of the cross-sectional study was to determine the state of emotional intelligence and social intelligence and their influence on teaching style and professional dedication.

### **3.3.6 Time horizon**

For the purpose of describing how individuals felt about a particular subject at that time, practically the entire data gathering for this research occurred over a single timeframe. As the influence of time is not being explored, it was considered that a cross-sectional survey would be acceptable for the research. A cross-sectional study may be seen as an immediate picture of a certain population. In contrast to longitudinal studies, which track a group of individuals across time, cross-sectional studies concentrate on the present. This form of study is often used to identify the traits that distinguish a group at a certain period.

This section of the "Research Onion" addresses the particulars of data collection, including how data were collected, what processes were followed during fieldwork, and how data were processed. Consent was obtained from both the institution's leader and the individual instructors in order to collect the replies. Next, before to submitting their comments, the instructors were strongly encouraged to use the research materials and follow the rules. Hence, data gathering was conducted both offline and online. Hence, offline data collection was conducted in a classroom environment utilising paper and pencil. Using a Google form, data were gathered

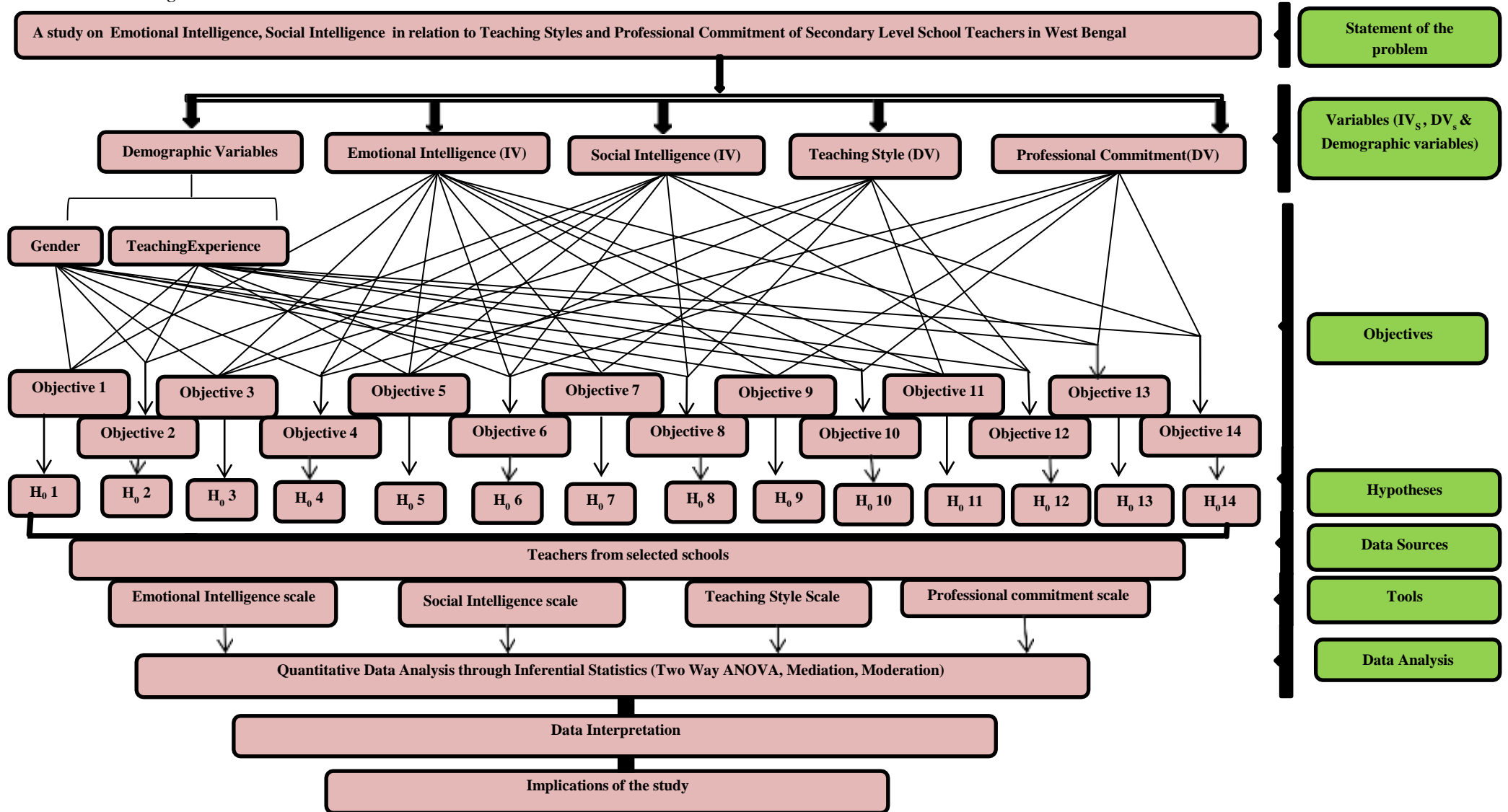
online. In addition, teachers were notified that their replies would be kept anonymous and used only for research purposes. In this chapter on methodology, the details and methods of the data gathering procedure were reviewed. In addition, a variety of inferential tests were conducted on the acquired data using the statistical software SPSS. To examine the hypotheses H<sub>01</sub> and H<sub>02</sub>, a two-way ANOVA was utilised. The hypotheses H<sub>03</sub>, H<sub>04</sub>, H<sub>05</sub>, and H<sub>06</sub> were tested using mediation analysis, whereas the hypotheses H<sub>07</sub>, H<sub>08</sub>, H<sub>09</sub>, H<sub>010</sub>, H<sub>011</sub>, H<sub>012</sub>, H<sub>013</sub> and H<sub>014</sub> were tested using moderation analysis.

### **3.4 Research design**

This study used correlational research design, a quantitative, non-experimental research approach. Using a correlational methodology, the degree and intensity of the association between emotional intelligence, social intelligence, teaching style, and professional dedication were characterised, investigated, and explained. The inquiry was done on class IX-X government secondary school teachers in West Bengal who are members of the WBBSE. The researcher had no control over the variables or the environment of data collection from the instructors. In this study, the researcher employed a quantitative research design to test the hypotheses by measuring the study variables and collecting data on a variety of scales, which were then analysed using statistical methods (Creswell, 2009). The use of statistical, mathematical, or computational approaches to perform a systematic empirical research of observable occurrences is a further consideration (Surendran, 2019). This research methodology was acceptable for the study's objectives, which included studying the influence of emotional intelligence and social intelligence on teaching style and professional dedication (see Figure 3.3). In addition, the variables of the study—emotional intelligence and social intelligence—were evaluated in their natural circumstances, without manipulation or outside interference (Belli, 2008). The purpose of this research was to get a deeper understanding of how teachers' emotional intelligence and social intelligence influence their professional dedication and teaching style, which in turn impacts their personal and professional success. In order to answer the research questions and achieve the study's aims, a descriptive survey technique was used in the present investigation.



**Figure 3.3**  
*Research design*



This design was determined to be suitable for the study because the main objective of these investigations continues to be the exploration of already-known facts and the discovery of correlations between various variables in an environment free from controls. Furthermore, fact generalization is another area of emphasis for descriptive research.

### **3.4.1 Population, sampling procedures and sample of the study**

This study is undertaken mostly in West Bengal secondary schools under the West Bengal Board of Secondary Education. Principal research subjects are school instructors. Every school conformed to a standardised curriculum and assessment procedures. At each of the selected schools, Bengali was used for both teaching and communication. For data gathering, a multistage sampling method was adopted. The population of the research consists of all Secondary School Teachers in the districts of Birbhum, Murshidabad, Purba Bardhaman, Nadia, Hooghly, Cooch Behar, and North Dinajpur in West Bengal who teach classes IX-X in various schools.

There are 23 districts in the state of West Bengal. The researcher has picked 30 percent of the population, or seven districts in West Bengal. For data gathering, a multistage random sampling approach was used. All ninth- and tenth-grade instructors from the chosen secondary schools will comprise the study's final sample. Figure 3.4 illustrates the sampling plan, while Table 3.1 provides demographic information about the participants. In the second phase, six schools from each district were selected at random from the school. Three variables were considered in the selection of the sample: (1) the geographical distribution of schools in West Bengal; (2) the gender of teachers; (3) teaching experiences; (4) the West Bengal Board of Secondary Education; and (5) the medium of instruction is Bengali. (6) Secondary education Teachers who teach classes nine to ten.

A total of 42 schools were picked at random from seven districts in West Bengal. All secondary school instructors who instruct classes IX-X are chosen at random. 48 instructors did not react to one instrument, 27 teachers did not provide accurate demographic information, and 33 teachers did not complete the provided scale. In all, 632 class IX-X teachers correctly completed the whole scale. Using a multi-stage sampling procedure, all IX-X secondary school teachers from 42 government-aided secondary schools in West Bengal were included in the study's

sample (Figure 3.4). Principally distinct sample steps include the random selection of districts and schools.

According to their gender and teaching experience, the majority of data was obtained from 260 male instructors and 372 female teachers. From male instructors, novice teachers= 82, experienced teachers= 87, and expert teachers= 91 were chosen based on their teaching experience (Table 3.1). There are 114 novice teachers, 122 experienced teachers, and 136 expert teachers dispersed over the seven districts of West Bengal, India, based on their level of teaching experience. According to research (such as Krejcie& Morgan, 1970), a sample size of 384 is enough to represent a population of at least 10,000,000 respondents. In contrast, the present research is a survey that generalises its results over a large population. Hence, a larger sample size is recommended.

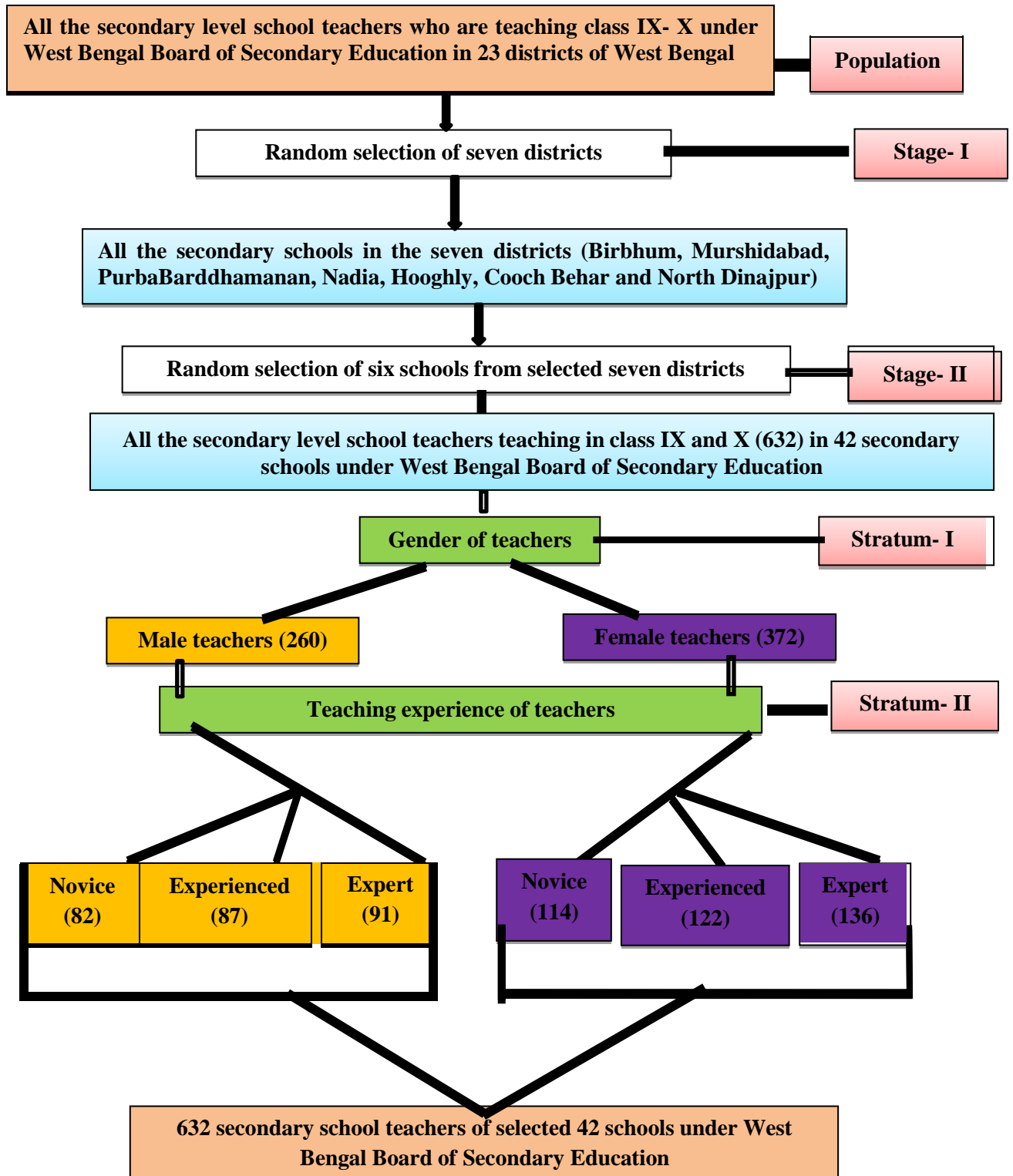
**Table 3.1**

*Demographic profile of the participants*

	<b>Sample</b>	
	<b>(632 participants)</b>	
	<b>N</b>	<b>%</b>
<i>Gender</i>		
<b>Female</b>	372	58.860
<b>Male</b>	260	41.139
<i>Teaching experience</i>		
<b>Novice</b>	196	31.012
<b>Experienced</b>	209	33.069
<b>Expert</b>	227	35.917
<i>Geographical location (Districts)</i>		
<b>Birbhum</b>	97	15.348
<b>Murshidabad</b>	93	14.715
<b>PurbaBardwan</b>	79	12.500
<b>Nadia</b>	96	15.189
<b>Hooghly</b>	88	13.924
<b>Cooch Behar</b>	82	12.975
<b>North Dinajpur</b>	97	15.348

**Figure 3.4**

*Sampling design*



### **3.5 Measurements and Research instruments**

The major purpose of this research was to investigate the relationship between emotional intelligence, social intelligence, teaching style, and professional commitment. Thus, the following research instruments were employed to quantitatively analyse the study variables in order to answer the study's research questions: Emotional intelligence was tested by an emotional intelligence scale, social intelligence by a social intelligence scale, teaching style by a teaching style scale, and professional commitment by a professional commitment scale. Relevant data will be collected using the Emotional Intelligence Measure, the Social Intelligence Scale, the Teaching Style Scale, and the Professional Commitment Scale. Due to the fact that the research instruments had both positively and negatively phrased questions, reverse scoring was used prior to statistical analysis. For each instrument, the researcher included demographic questions, including gender and teaching experience.

#### **a) Emotional intelligence scale (EIS)**

Emotional intelligence scale consisted with 28-item scale (18 negative) consisted of five dimensions those were self-perception (positive items- 3, negative items- 4), self-regulation (positive items- 2, negative items- 3), self-drive (positive items- 2, negative items- 3), Empathy (positive items - 1, negative items- 4), social- motive (positive items - 2, negative items- 4). Emotional intelligence scale was a five- point Likert scale from 1= "Strongly disagree" to 5= "Strongly agree" with 3= "Neutral" as the midpoint. Some items were as follows: I become angry whenever a student commits a mistake. I always behave as per the situations. I feel uneasy to work with my colleagues. I always enjoy working together with my colleagues. This emotional intelligence scale was standardized on 595 secondary level school teachers of randomly selected different districts of West Bengal. The Cronbach's Alpha values for the emotional intelligence sub-scales were 0.90, 0.87, 0.85, 0.88, 0.87 for self- perception, self-regulation, self-drive, empathy, social-motive respectively, whereas, the Cronbach's Alpha value for the overall scale was found to be 0.89.

#### **b) Social intelligence scale (SIS)**

Social intelligence scale consisted with 29-item scale (14 negative) consisted of five dimensions those were Social Awareness (positive items - 2, negative items- 4),

Social Adaptability (positive items- 3, negative items- 3), Social Cooperation (positive items- 4, negative items- 3), Social Expressivity (positive items- 2, negative items- 3), Interpersonal Relationship (positive items- 3, negative items- 2). Social intelligence scale was a five-point Likert scale from 1= “*Strongly disagree*” to 5= “*Strongly agree*” with 3= “*Neutral*” as the midpoint. Some items were as follows: I understand when students become inattentive in Class. Sometimes I make decisions without anticipating their impact. I often discuss with my colleagues regarding different innovative methods of teaching. I feel a burden to take assigned work from higher authorities. This social intelligence scale was standardized on 645 secondary level school teachers of randomly selected different districts of West Bengal. The Cronbach’s Alpha values for the emotional intelligence sub-scales were 0.85, 0.88, 0.90, 0.83 and 0.87 for social awareness, social adaptability, social cooperation, social expressivity and interpersonal relationship respectively, whereas, the Cronbach’s Alpha value for the overall scale was found to be 0.89.

**c) Teaching style scale (TSS)**

After going through several numbers of tools on teaching style, it was found that teaching style scale developed by Dr. Sapna Sharma and Divya Saran is more suitable for the present study as the items of the tool and the standardization procedure is very much relevant and related to the present study. This tool was standardized on secondary level school teachers in Indian context in 2017 which is also allied to the present study. Hence, the tool has been adopted as it is without modifying any single item. Details of following standardized tool are given below. Teaching style scale was developed by Dr. Sapna Sharma and Divya Saran. This scale consisted with 60-item scale (16 negative) consisted of five dimensions those were expert (positive items - 11, negative items- 4), formal-authority (positive items - 9, negative items- 6), demonstration (positive items - 7, negative items- 3), facilitator (positive items - 8, negative items- 2), delegator (positive items - 9, negative items- 1). Emotional intelligence scale was a five-point Likert scale from 1= “*Strongly disagree*” to 5= “*Strongly agree*” with 3= “*Neutral*” as the midpoint. Some items were as follows: I feel fatigue when I continuously teach for 2 or 3 periods. I continuously assess my teaching. I cannot describe content according to need. I accept it correct to teach based on pre-decided objectives. The reliability of the

scale was found by split-half (odd-even) method on the score of 250 teachers. The reliability correlation of coefficient got was 0.84, which is significant at 0.01 levels. The scale has face validity for which the scale was examined by expert and on their opinion, it was revised. For content validity the scale was item analyzed and only those item were selected which had the discriminative power. In this way from the first draft of 90 items, 30 items were dropped and the final form of the scale contained 60 items.

**d) Professional commitment scale (PCS)**

After going through several numbers of tools on professional commitment, it was found that professional commitment scale developed by Dr. Ravinder Kaur, Dr. Sarbjit Kaur Ranu, and Mrs. Sarvjeet Kaur Brar is more suitable for the present study as the items of the tool and the standardization procedure is very much relevant and related to the present study. This tool was standardized on secondary level school teachers in Indian context in 2011 which is also allied to the present study. Hence, the tool has been adopted as it is without modifying any single item. Details of following standardized tool are given below. Professional commitment scale for teachers was developed by Dr. RavinderKaur, Dr. Sarbjit Kaur Ranu, and Mrs. Sarvjeet Kaur Brar. This scale consisted with 45-item scale (24 negative) consisted of five dimensions those were commitment to learner (positive items - 3, negative items- 6), commitment to society (positive items - 5, negative items- 4), commitment to profession (positive items - 3, negative items- 6), commitment to attain excellence (positive items - 3, negative items- 6), commitment to basic human values (positive items - 7, negative items- 2). Emotional intelligence scale was a five-point Likert scale from 1= “Strongly disagree” to 5= “Strongly agree” with 3= “Neutral” as the midpoint. Some items were as follows: I find it impossible to pay equal attention to all students. I feel no need for planning and preparing for teaching. I get upset when anyone speaks ill of teaching profession. Test-retest reliability was administered and the value was found to be 0.76 which was significant at 0.01 levels. Face and content validity was established from different experts of school and teacher education.

**e) Gender**

Teachers reported their gender in the specified columns in both of the above-mentioned tools. For the entire dataset, males were coded as 1 and females as 2.

## **f) Teaching experience**

Teachers reported their teaching experiences in the specified columns in both of the above-mentioned tools. Novice teacher means the teacher who have 0 to 5 years of experiences, experienced teachers means the teachers who have 5 to 10 years teaching experiences, expert teachers means the teacher who have more than 10 years of teaching experiences. For the entire dataset, novice teachers were coded as 1 and experienced teachers were coded as 2, expert teachers were coded as 3

## **3.6 Measurements and Research instruments**

Based on research objectives, to measure the latent variables the following tools were used. Rating is appropriate as perception/opinion is measured (Curran, West, and Finch, 1996).

### **3.6.1 Development and validation of emotional intelligence scale (EIS)**

Emotional intelligence (EI) is a crucial psychological concept and element in education (Meyers, 2009), especially in school education. According to Goleman (1995), emotional intelligence accounts for 80% of achievement. Emotional intelligence is essential for both personal and professional success. Emotional intelligence is a person's innate ability to recognise, interpret, and effectively regulate emotions, be aware of his surroundings, and use these emotions with tact and empathy. Emotional intelligence is recognising one's own emotions, differentiating between them, and managing these emotions in order to engage in appropriate behaviour (Goleman, 1995). Mayer and Salovey said in 1997 that emotional regulation is essential for both emotional and intellectual growth. It is the ability to confront and overcome daily hurdles in order to achieve personal and professional success (Bar-On, 2000).

Emotional intelligence is an essential tool for overall personality development. It improves teacher effectiveness, teaching role, motivation, teachers' personal well-being, cooperation, and leadership abilities (Mérida-Lo'pez & Extremere, 2017) in order for them to reach their professional life goals (Brockbank & McGill, 2007). The importance of emotionally intelligent instructors for student learning, teacher-student interactions, the learning environment, the teaching and learning process, and academic performance cannot be overstated (Gallardo, Tan & Gindidis, 2019).



The idea, organization, and evaluation of emotional intelligence vary throughout the many studies. There are very few studies that examine the emotional intelligence of educators. Finally, it will be important to construct an emotional intelligence scale for teachers, considering the notion as a regulatory tool for enhancing the personal and professional lives of teachers. Ultimately, the variations in the assessment of emotional intelligence concept need a legitimate and trustworthy instrument that precisely evaluates the emotional intelligence of teachers, especially in the setting of school education in India.

Although there are a number of disagreements on the components and measurements of emotional intelligence (Zeidner, 2017), the diversity of methodologies and instruments for evaluating emotional intelligence poses an additional challenge. Several researches utilized the Emotional Intelligence Inventory (Sala, 2002), Questionnaire (Petrides, 2009), Test (Brackett & Salovey, 2006), and Survey (Wong & Law, 2002) for the same purpose. Emotional intelligence is, according to the majority of thinkers, a complex notion (Goleman, 1995; Mayer And Salovey, 1997; Bar-On, 2000). Unknown are the number and nature of emotional intelligence's dimensions, although the majority of theorists think it is a multidimensional phenomenon. After a thorough analysis of relevant literature, table 3.2 illustrate several contradictory emotional intelligence measures.

#### **3.6.1.1 *Item writing:***

Following a comprehensive assessment of standardized, published instruments for evaluating emotional intelligence (Goleman, 1995; Goleman&Boyatzis, 2017; Petrides and Furnham, 2001; Bar-On, 2000), the instruments' items were strung. The primary objective of this scale preparation was to gather content coverage, item variety, and range measurement data. So, a variety of instruments were evaluated regardless of factorial structure (e.g., 3-factor model, 4-factor model, 5-factor model, 9-factor model), measurement method, etc (e.g. Scale, Inventory, test, questionnaire, survey).

Initially, 126 elements on emotional intelligence were composed. In addition, five anchor points were established for grading the items on the scale, ranging from "strongly disagree" (1) to "strongly agree" (5). (5). Since seven-point Likert scales are long and might confuse respondents, five-point Likert scales were used to decrease

respondents' discomfort and increase response rates (Pai & Huang, 2011). The tests had items that reflected a number of emotional intelligence characteristics established in prior research, and the following dimensions were developed: Self-awareness, mood management, self-motivation, empathy, relationship management, self-regulation, and social skill management of stress regulate others' emotional signals emotive evaluation using emotion Emotional evaluation of one's feelings (see Table 3.2).

**Table 3.2**

*Emotional intelligence scales used in previous studies*

<b>Existing</b>	<b>standardized</b>	<b>Indicators of Emotional Intelligence</b>
<b>Tools</b>		
Goleman, 1995		Self-Awareness, Self-Regulation, Motivation, Empathy, Social Skill
Robbins & Judge, 2009		Detect Emotions In others, Manage Emotional Cues, Be Self-Aware and Information
Mayer & salovey, 1997		Understanding Emotions, Managing Emotions, Perceiving Emotions, Using Emotions To Facilitate Thought,
Petrides, 2009		Self-Control, Emotionality, Wellbeing and Sociability

### **3.6.1.2 Initial Tryout:**

First of all initial try-out was conducted to write different items under five dimensions of emotional intelligence. The initial try-out was carried out to make sure that all sections of the construct were covered by the items available in the tools, the items are consistent with the context of the current study, and there are no items representing either antecedents or consequences left in the original draught. Expert tryout, individual tryout and group tryout were included under initial tryout. These tryouts are explained below:

#### **a) Experts Tryout:**

Emotional intelligence scale consisted with 126 items were sent to different 27 experienced (Ikart, 2019) educational psychology experts (Lambie et al., 2017) for their further suggestions. After getting suggestions from different experts 42 items were deleted from emotional intelligence scale while other items were modified. After

a predetermined, repeating procedure, the elements that were solely emotional intelligence's antecedents and outcomes were eliminated. Next, a collection of 84 questions (25 negative items) was kept as the first draught for the intended emotional intelligence assessment instrument. This version of the emotional intelligence scale has five anchor points ranging from "strongly disagree" to "strongly agree." Ultimately, the Departmental Research Committee approved this plan (DRC). This allowed the researcher to use the instrument for the pre-test (individual try-out).

**b) Individual Tryout (Pre-test and pilot study)**

In order to decrease measurement error, 84 items of the draught emotional intelligence scale were pretested on 35 secondary school teachers who were not included in the final sample (Perneger, Courvoisier, Hudelson, & Gayet-Ageron, 2015; Kumar, Talib, & Ramayah, 2013). The major objective of pre-testing was to evaluate if any of the questions were unclear, badly sequenced, and confusing in meaning (Sekaran, 2003), double-barreled, and whether the participants were sufficiently informed (Kumar et al., 2013).

After receiving the results, it was determined that the variance and skewness of scores relative to the mean score for 12 scale items were low. These items were removed from the emotional intelligence scale. Nevertheless, prior to doing calculations, negative item scores were reversed. In addition, six unambiguous and unclear questions as well as seven items with a social desirability bias were removed. Moreover, eleven items were deleted as a result of common method bias. So, these items are eliminated or modified to accommodate the latest findings. Individual testing led to the rejection of thirty-six items and the modest alteration of fifteen others.

The modified emotional intelligence scale with 48 items was subjected to a second round of pre-testing (Memon, Ting, Ramayah, Chuah, & Cheah, 2017), after which it was concluded that no more item revisions were required. Later, a 48-component rating system was developed based on the views of secondary school teachers. This 48-item instrument was eventually piloted by 30 teachers (Polit, Beck, & Hungler, 2001; Teijlingen van, Rennie, Hundley, & Graham, 2001). This is required to ensure its continued sustainability and sufficiency (Teijlingen van, Rennie, Hundley,

Graham, 2001). In addition, a reliability analysis was conducted on each item. After getting the results of the reliability research, it was found that the reliability analysis was sufficient, as the Cronbach alpha value for all emotional intelligence construct components was 0.89. During early testing, this result supported the modification one. Yet, after further data analysis, the factorial structure of the emotional intelligence scale, as well as its validity and dependability, were tested.

### **c) Group Tryout**

The 48-item Emotional Intelligence Scale was given to 595 secondary school teachers. There are 372 female teachers (62.52%) and 260 male teachers (43.69%) out of 595 secondary school instructors. These instructors are picked at random from secondary schools in the district of Birbhum, West Bengal. Each subject instructors and the institution's director were asked for permission to get responses from them. In addition, teachers were informed that their replies would be kept anonymous and neither reviewed nor released for any reason other than study. The instructors were then given a rating scale for emotional intelligence to complete. In addition, they were advised that their replies would neither be assessed nor shared. The results for Strongly Agree, Agree, Undecided, Disagree, and Strongly Disagree were 5, 4, 3, 2, and 1 for each item, respectively. For the negative items, the scoring technique was done in reverse. The overall score for each responder was computed by aggregating the subscale scores for each emotional intelligence component. Lower overall score values showed a lower degree of emotional intelligence, while higher total score values suggested a greater level of emotional intelligence among instructors.

#### **3.6.1.3 Item analysis**

From the responses obtained from Group Tryout, individual scores were calculated and were arranged in descending order. Then, respondents belonging to the top 27% group (N= 132) and bottom 27% (N= 132) group were identified. Then, the data of 132 subjects belonging to the top 27% group and 132 belonging to the bottom 27% group were analyzed for 48 scale items to determine the Discrimination Index of the items. The results are given in Table 3.3:

**Table 3.3***Item-wise M, SD, and t-values*

<b>Item No.</b>	<b>M<sub>1</sub></b>	<b>SD<sub>1</sub></b>	<b>M<sub>2</sub></b>	<b>SD<sub>2</sub></b>	<b>t-value</b>	<b>p-value</b>	<b>Remark</b>
1	3.01	0.78	3.17	0.24	-3.15	<0.01	Selected
2	3.12	0.87	3.16	0.76	-1.44	0.09	Rejected
3	3.18	0.81	3.23	0.73	-2.03	0.04	Selected
4	3.16	0.95	3.30	0.77	-3.11	<0.01	Selected
5	3.15	0.86	3.24	0.79	-2.41	0.03	Selected
6	3.14	0.83	3.36	0.88	-3.92	<0.01	Selected
7	3.13	0.84	3.54	0.83	-1.99	0.02	Selected
8	3.17	0.85	2.94	0.64	1.23	0.07	Rejected
9	3.28	0.96	2.96	0.69	2.69	<0.01	Selected
10	3.13	0.88	2.92	0.63	1.11	0.08	Rejected
11	3.21	0.87	3.04	0.77	1.48	0.06	Rejected
12	3.10	0.83	3.06	0.76	2.76	<0.01	Selected
13	3.31	0.91	3.05	0.65	2.31	0.04	Selected
14	3.34	0.99	2.92	0.67	3.67	<0.01	Selected
15	3.20	0.92	3.06	1.06	1.21	0.09	Rejected
16	3.14	0.77	3.07	0.71	1.49	0.07	Rejected
17	3.27	0.83	2.98	0.72	2.15	0.03	Selected
18	3.26	0.75	2.89	0.90	1.82	0.06	Rejected
19	3.31	0.71	3.21	0.95	4.12	<0.01	Selected
20	3.30	0.73	3.02	1.05	1.16	0.08	Rejected
21	3.41	0.82	3.23	1.06	2.46	0.02	Selected
22	3.32	0.80	3.04	1.04	3.13	<0.01	Selected
23	3.13	0.91	3.26	0.68	1.25	0.09	Rejected
24	3.14	0.89	2.67	0.79	4.78	<0.01	Selected
25	3.05	0.84	2.99	0.89	1.34	0.06	Rejected
26	2.76	1.21	3.34	1.15	2.22	0.04	Selected
27	2.77	0.86	2.99	0.63	3.63	<0.01	Selected
28	2.98	0.94	2.91	0.68	1.74	0.08	Rejected
29	2.99	0.86	2.86	0.68	3.92	<0.01	Selected

30	3.20	0.81	2.77	0.74	1.82	0.07	Rejected
31	2.71	0.80	2.99	0.70	2.29	0.02	Selected
32	3.22	0.82	2.18	1.06	1.12	0.07	Rejected
33	3.23	0.74	2.41	0.79	2.25	0.03	Selected
34	3.34	0.77	3.17	0.87	3.81	<0.01	Selected
35	2.65	1.26	3.08	1.06	1.44	0.06	Rejected
36	2.86	0.94	3.24	1.02	1.36	0.09	Rejected
37	2.94	0.92	3.06	1.03	2.88	<0.01	Selected
38	3.04	0.73	2.59	1.21	1.19	0.06	Rejected
39	3.06	0.81	2.71	1.16	2.52	0.03	Selected
40	3.19	0.92	3.18	0.81	-3.21	<0.01	Selected
41	2.87	1.03	2.92	0.63	-1.77	0.08	Rejected
42	3.19	1.06	2.63	1.25	-1.67	0.09	Rejected
43	3.12	0.26	2.64	0.77	-3.33	<0.01	Selected
44	3.15	0.84	2.79	0.79	-1.57	0.06	Rejected
45	2.21	0.81	2.91	0.71	-2.51	0.04	Selected
46	3.23	0.88	2.16	1.06	-1.28	0.07	Rejected
47	3.24	0.82	2.47	0.77	-3.01	<0.01	Selected
48	3.35	0.85	3.19	0.81	-2.35	0.02	Selected

From the Table 1, it is clear that t-values for the items at serial numbers 1, 3, 4, 5, 6, 7, 9, 12, 13, 14, 17, 19, 21, 22, 24, 26, 27, 29, 31, 33, 34, 37, 39, 40, 43, 45, 47, 48 are significant either at 0.01 level ( $p < 0.01$ ) or at 0.05 level ( $p < 0.05$ ). These items were found to discriminate between the respondents belonging to the top 27% group and the bottom 27% group. Thus, these 28 scale items (10 positive items) were kept in the instrument for further analysis.

#### **3.6.1.4 Final Tryout**

Data were compiled from two independent randomized sub-samples in order to undertake exploratory factor analysis and confirmatory factor analysis. Both the first and second sub-samples of secondary school pupils in West Bengal's seven districts (Birbhum, Murshidabad, Purba Bardhaman, Nadia, Hooghly, Cooch Behar, and North Dinajpur) contained 562 (346 females) and 595 (310 females), respectively. None of the samples were used in the study's final data collection. In all of the chosen schools, Bengali served as the primary language of instruction

and communication. Both the institution's head and the students' consents were required in order to obtain the responses. The Emotional Intelligence Scale was then distributed to each student, and they were instructed to complete it as instructed. They were also told that the information they provided would be kept private and would only be utilized for study.

### 3.6.1.5 Preliminary descriptive analysis

After determining whether the data met the requirements for statistical analysis, statistical analysis was performed. In addition, measures of central tendency and variability were taken for each scale item (see Table 3.4). In addition, skewness and kurtosis were evaluated for each item in order to determine whether the data were connected with a normal probability curve. All values were found to be within the statistically acceptable range (kurtosis<sup>7</sup> and skewness<sup>2</sup>; Curran, West, and Finch, 1996).

#### A. Results of Preliminary descriptive analysis

Different measures like Mean, SD, skewness and kurtosis of the 28 scale items given in Table no.3.4:

**Table 3.4**

*Mean, SD, skewness and kurtosis of the 28 emotional intelligence scale items*

Items	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
q1	3.21	0.83	-0.008	0.1	0.242	0.2
q2	3.17	0.904	-0.183	0.1	0.081	0.2
q3	3.22	0.867	-0.182	0.1	0.239	0.2
q4	3.21	0.901	-0.232	0.1	0.221	0.2
q5	3.19	0.859	-0.32	0.1	0.547	0.2
q6	3.34	0.896	-0.576	0.1	0.312	0.2
q7	3.36	0.886	-0.605	0.1	0.135	0.2
q8	3.12	0.99	-0.272	0.1	-0.25	0.2
q9	3.09	0.877	0.088	0.1	-0.227	0.2
q10	3.08	0.924	0.003	0.1	-0.47	0.2
q11	3.10	0.892	-0.188	0.1	-0.273	0.2
q12	3.06	0.871	-0.09	0.1	-0.193	0.2
q13	3.25	0.902	0.042	0.1	0.028	0.2
q14	3.30	0.88	-0.291	0.1	0.099	0.2
q15	3.27	0.928	-0.313	0.1	-0.198	0.2
q16	3.29	0.924	0.032	0.1	-0.083	0.2

q17	3.26	0.925	-0.156	0.1	-0.048	0.2
q18	3.06	0.885	-0.13	0.1	-0.012	0.2
q19	3.03	0.896	-0.218	0.1	0.078	0.2
q20	3.03	0.941	-0.203	0.1	-0.089	0.2
q21	3.17	0.999	-0.379	0.1	-0.207	0.2
q22	3.21	0.993	-0.434	0.1	-0.314	0.2
q23	3.11	0.998	-0.523	0.1	-0.06	0.2
q24	3.08	1.009	-0.264	0.1	-0.02	0.2
q25	3.12	1.067	-0.528	0.1	-0.237	0.2
q26	3.09	0.962	-0.418	0.1	0.114	0.2
q27	3.16	1.035	-0.233	0.1	-0.04	0.2
q28	3.19	1.023	-0.245	0.1	0.025	0.2

**Note.** SP=Self-Perception, SR=Self-Regulation, SD=Self-Drive, EM=Empathy, SM=Social Motive

**Table 3.5**

*Item-Total Statistics*

Questions	Corrected Item-Total Correlation	Questions	Corrected Item-Total Correlation
q1	0.40	q15	0.47
q2	0.40	q16	0.44
q3	0.40	q17	0.50
q4	0.43	q18	0.48
q5	0.40	q19	0.43
q6	0.36	q20	0.46
q7	0.38	q21	0.48
q8	0.51	q22	0.41
q9	0.50	q23	0.50
q10	0.48	q24	0.44
q11	0.53	q25	0.43
q12	0.50	q26	0.54
q13	0.44	q27	0.40
q14	0.44	q28	0.42



**Table 3.6**  
*Inter item correlation matrix of fivefold emotional intelligence scale*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
1	1.00																												
2	0.54	1.00																											
3	0.58	0.57	1.00																										
4	0.51	0.51	0.53	1.00																									
5	0.53	0.51	0.54	0.57	1.00																								
6	0.14	0.13	0.16	0.15	0.13	1.00																							
7	0.10	0.08	0.12	0.07	0.04	0.06	1.00																						
8	0.16	0.12	0.17	0.11	0.07	0.08	0.53	1.00																					
9	0.15	0.14	0.17	0.11	0.08	0.11	0.57	0.61	1.00																				
10	0.15	0.12	0.13	0.08	0.09	0.06	0.51	0.58	0.54	1.00																			
11	0.04	0.09	0.14	0.08	0.03	0.07	0.39	0.42	0.40	0.45	1.00																		
12	0.09	0.07	0.07	0.08	0.07	0.09	0.39	0.42	0.39	0.43	0.38	1.00																	
13	0.10	0.02	0.10	0.08	0.01	0.08	0.44	0.46	0.45	0.45	0.43	0.59	1.00																
14	0.08	0.09	0.10	0.07	-0.01	0.04	0.38	0.41	0.42	0.44	0.43	0.59	0.56	1.00															
15	0.18	0.08	0.16	0.14	0.11	0.12	0.31	0.34	0.36	0.32	0.28	0.47	0.48	0.44	0.49	1.00													
16	0.17	0.17	0.17	0.15	0.11	0.14	0.21	0.19	0.18	0.19	0.19	0.13	0.14	0.15	0.18	0.32	1.00												
17	0.16	0.15	0.18	0.16	0.15	0.16	0.17	0.14	0.11	0.14	0.13	0.06	0.06	0.09	0.09	0.23	0.55	1.00											
18	0.13	0.14	0.17	0.14	0.12	0.12	0.22	0.13	0.14	0.18	0.17	0.11	0.09	0.12	0.11	0.28	0.59	0.56	1.00										
19	0.12	0.12	0.12	0.12	0.12	0.13	0.18	0.14	0.13	0.17	0.15	0.05	0.08	0.11	0.11	0.24	0.59	0.56	0.61	1.00									
20	0.09	0.06	0.09	0.09	0.09	0.08	0.13	0.10	0.07	0.07	0.10	0.06	0.06	0.13	0.08	0.24	0.58	0.53	0.61	0.67	1.00								
21	0.12	0.12	0.15	0.13	0.11	0.12	0.18	0.18	0.15	0.19	0.15	0.10	0.12	0.14	0.10	0.26	0.27	0.28	0.25	0.36	0.32	1.00							
22	0.09	0.09	0.12	0.11	0.11	0.13	0.14	0.13	0.12	0.11	0.12	0.05	0.10	0.11	0.09	0.23	0.20	0.26	0.22	0.29	0.31	0.68	1.00						
23	0.13	0.16	0.11	0.11	0.19	0.12	0.16	0.14	0.12	0.14	0.18	0.08	0.10	0.11	0.09	0.11	0.17	0.18	0.18	0.26	0.25	0.51	0.48	1.00					
24	0.12	0.13	0.12	0.14	0.10	0.13	0.19	0.21	0.16	0.20	0.22	0.14	0.17	0.20	0.19	0.31	0.34	0.30	0.28	0.29	0.32	0.61	0.64	0.49	1.00				
25	0.06	0.08	0.05	0.03	0.07	0.05	0.14	0.18	0.14	0.22	0.21	0.15	0.16	0.17	0.13	0.11	0.12	0.18	0.14	0.20	0.10	0.47	0.41	0.54	0.51	1.00			
26	0.05	0.05	0.06	0.02	0.06	0.05	0.15	0.21	0.16	0.24	0.23	0.22	0.17	0.20	0.13	0.11	0.18	0.17	0.15	0.25	0.19	0.47	0.43	0.46	0.46	0.69	1.00		
27																													
28																													

## **B. Main Analysis**

SPSS 26.0 (IBM Corp., Armonk, NY, US) was used for data analysis (IBM Corp., Armonk, NY, US). A number of Confirmatory Factor Analyses (CFA) was conducted to confirm the already-established dimensions. Then, a zero-order 1-factor model was applied to the whole set of 28 elements, which were then loaded with a single factor. Then, three 2-factor models were examined by treating any one of the five elements (self-awareness, self-regulation, motivation, empathy, and social competence) as a separate factor and combining the items for the other four factors. Finally, a 5-factor, first-order model was studied. After this, the five measurement models were compared using the following model fit indices: 2 statistic and associated Parsimonious Normed Fit Index (PNFI), Parsimonious Comparative Fit Index (PCFI), Tucker Lewis Index (TLI), Goodness-of-Fit Index (GFI), p-value, (CFI), Standardized Root-Square Residual (SRMR), Root Mean Square Error of Approximation (RMSEA), where the threshold values for CFI are 0.05 and SRMR and RMSEA are 0.05 and 0.01, respectively. The concept's validity was determined based on the results of the CFA. In addition, the mean scores of the four dimensions of emotional intelligence were compared to see whether the evaluation of the components varied dependent on the gender and teaching experience of the instructors. In spite of this, sample size has a substantial effect on the chi-square statistic and is thus considered as a weak parameter for the model-fit index. In cases where values less than 2 are regarded acceptable,  $2/df$  was thus calculated (Levy & Marshall, 2004). In addition, the CFA results were used to evaluate the concept validity. In addition, the mean scores of the emotional intelligence dimensions were analysed to determine if the evaluation of the components differed based on the gender and teaching experience of the instructors. Using Pearson's product-moment correlations, the intercorrelations between the construct's dimensions were computed.

### **3.6.1.6 Construction of the measuring model**

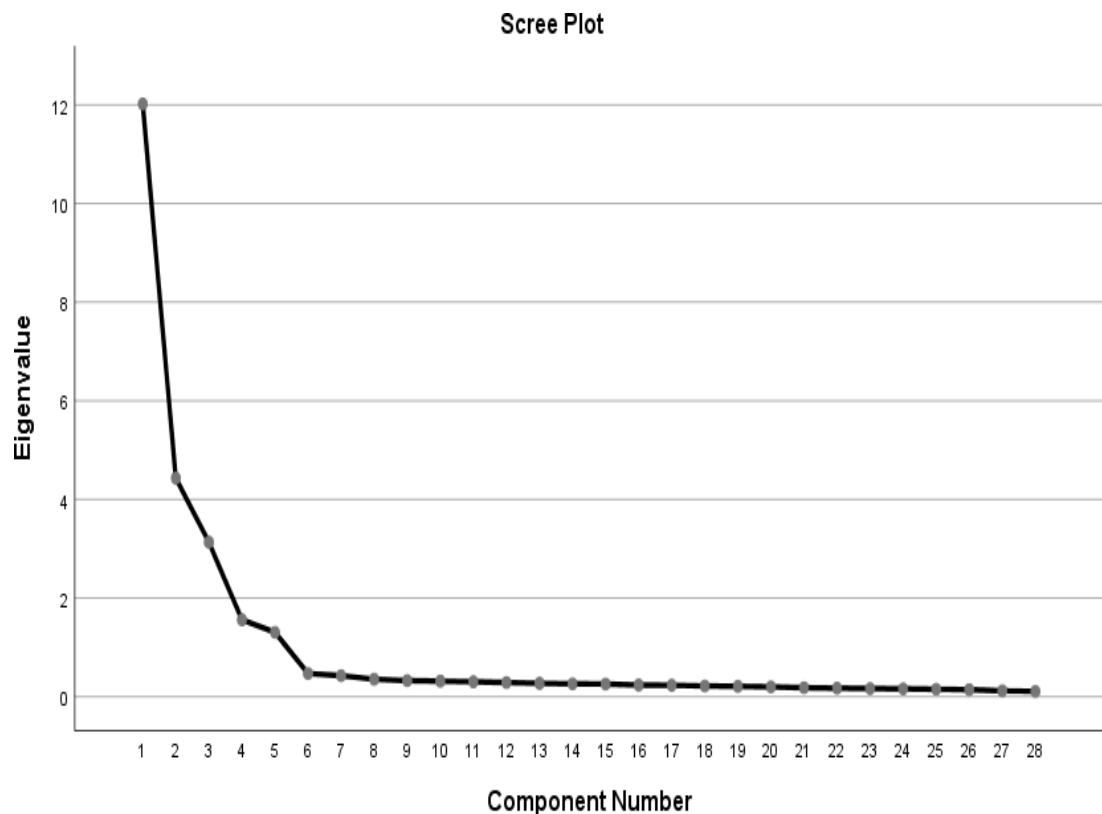
To study the factor structure of the latent construct, an exploratory factor analysis (EFA) using varimax rotation and principal components analysis as extraction techniques was done. We assessed the components having Eigen values greater than 1. Exploratory factor analysis (EFA) basics are addressed. The Kaiser-

Meyer-Olkin measure of sample adequacy was  $>0.6$  (0.943), and the Bartlett's Sphericity Test was statistically significant ( $\chi^2=15986.944$ ,  $p = .001$ ).

Objects were allocated to each scale dimension based on their loading patterns. Self-Perception (7 items), Self-Regulation (5 items), Self-Drive (5 items), Empathy (5 pieces), and Social motivation (5 items) are the 28 components of the five-factor model (6 items). Self- Perception (items SP1 to SP7), Self-Regulation (items SR8 to SR12), Self-Drive (items SD13 to SD17), Empathy (items EM18 to EM22), and Social Motivation (items SM23 to SM28) comprise the Self-Perception subscale (see Table 3.8). In addition, the positive definiteness criterions were met by the non-zero determinant value of the correlation matrix.

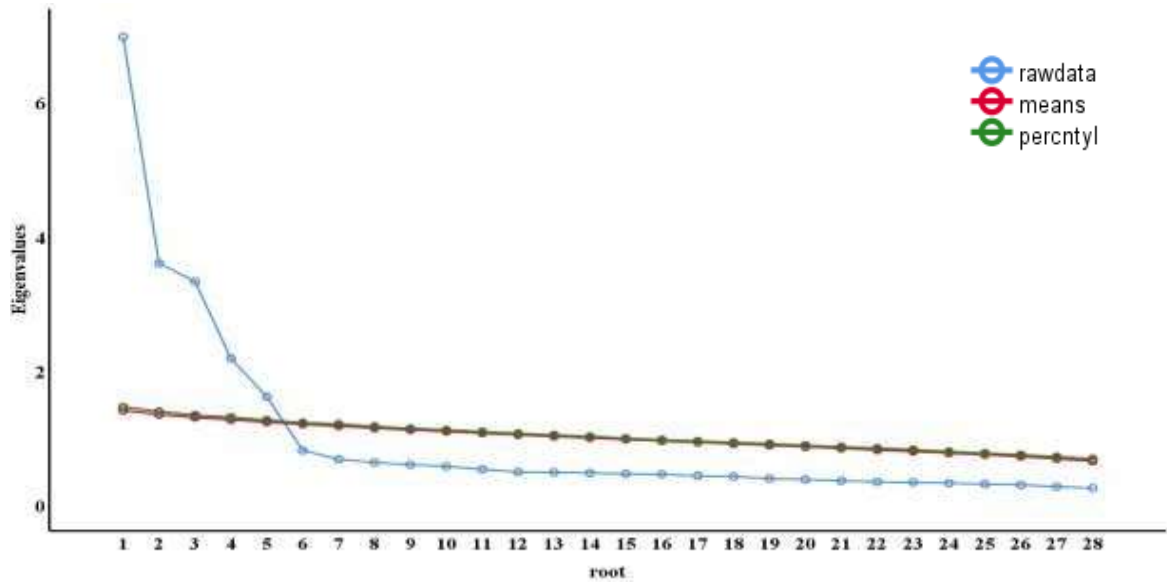
**Figure 3.5**

*Scree plot for five factors of emotional intelligence of exploratory factor analysis*



**Figure 3.6**

*Tsplot of Raw Data Eigenvalues, & Mean & (95<sup>th</sup>) Percentile Random Data Eigenvalues*



**Table 3.7**

*Raw Data Eigenvalues, & Mean & (95<sup>th</sup>) Percentile Random Data Eigenvalue*

Root	Raw Data Eigenvalues	Means of Eigenvalues	(95 <sup>th</sup> ) Percentile Eigenvalues
1	6.973	1.409	1.461
2	3.598	1.347	1.390
3	3.328	1.305	1.339
4	2.185	1.268	1.304
5	1.610	1.233	1.262
6	0.812	1.201	1.225
7	0.680	1.175	1.203
8	0.632	1.144	1.168
9	0.510	1.117	1.137
10	0.575	1.094	1.116
11	0.529	1.069	1.090
12	0.489	1.045	1.063
13	0.484	1.020	1.041

14	0.476	0.998	1.019
15	0.461	0.975	0.992
16	0.455	0.954	0.970
17	0.433	0.932	0.949
18	0.423	0.911	0.931
19	0.392	0.889	0.909
20	0.377	0.866	0.886
21	0.359	0.844	0.865
22	0.342	0.820	0.845
23	0.335	0.797	0.822
24	0.323	0.773	0.793
25	0.301	0.749	0.770
26	0.298	0.722	0.747
27	0.271	0.690	0.717
28	0.250	0.652	0.688

The EFA (eigenvalue>1; Cattell, 1966) led to a five-factor solution that satisfied the Kaiser Criterion. An examination of the scree plot provided evidence in favor of the five-factor solution. To determine how many factors will be kept in the measurement model, parallel analysis was also carried out. When the eigenvalues of the raw data from EFA were compared to the 95th percentile of random eigenvalues, three components were proposed to be maintained (see Figure 3.6). Additionally, the results of Wayne Velicer's Minimum Average Partial (MAP) test (Velicer, 1976; 2000) were similar to those of the scree test (see Figure 3.5), indicating that the five-factor structure of emotional intelligence construct met both the lowest Bayesian information criterion (BIC) suggested by the parallel analysis and a Bayesian information criterion (BIC) of a factor-by-factor design.

The EFA yielded a five-factor solution which explained 64.157% of the variation in the latent construct as a whole. According to the rotated component matrix (see table 3.8), the standardised factor loadings for all the items on the associated latent factors were more than |.45| (Hair, Tatham, Anderson, and Black, 1998). Hence, model is very suited. Self-Perception included seven questions and accounted for 15. 668 % of the variation in emotional intelligence. I am irritated

everytime a pupil makes a mistake, yet I maintain my composure under pressure. The second component, namely Self-Regulation, was comprised of five more items and explained 16.969% of the total variation in the construct. This component comprised statements such as "I do not care about my coworkers' difficulties and I always respond appropriately." Five items comprised the Self-Drive subscale, which accounted for 14.336% of the variation. Among the example statements are, "I am entirely devoted to my job and I find it difficult to work with my coworkers." The fourth subscale (Empathy) included five items and explained 15.136% of the variation. Examples include, "I always assist people make judgements when necessary, and I don't care about others' issues." The Social motivation subscale had five items and accounted for 13.028% of the variance. Among the example statements are, "I usually love working with my colleagues, and I do not readily disclose my connections." In conclusion, the Cronbach's values for Self-Perception, Self-regulation, Self-Drive, Empathy, and Social Motivation were 0.90, 0.87, 0.85, 0.88, and 0.87, respectively, and 0.89 for the whole scale, indicating that the measuring scale was highly reliable. The Rotated Component Matrix for the last 28 items is shown in table 3.8.

**Table 3.8**

*Rotated Component Matrix: Standardized factor loadings of of emotional intelligence construct through exploratory factor analysis*

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
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**Self- Perception Items**

I am aware of my strengths and weaknesses.	0.79
I try to learn from my mistakes.	0.77
I become angry whenever a student commits a mistake.*	0.77
I remain calm even in stress.*	0.79
I remain enthusiastic about student progress.	0.82

I avoid taking challenging tasks. *	0.76
I am unable to control my negative thoughts about my colleagues. *	0.76
Self- Regulation Items	
I balance between my personal and professional life.	0.72
My anger goes beyond control in any disturbing situations. *	0.78
I often get diverted from my work. *	0.74
I do not bother about my colleagues problems. *	0.77
I always behave as per the situations.	0.74
Self- Drive Items	
I avoid others opinion. *	0.76
When students commit a mistake, I criticize them in front of others. *	0.76
I am fully committed to my work.	0.69
I feel uneasy to work with my colleagues. *	0.74
I always motivate the students for their progress.	0.71
Empathy Items	
It is not important for me to solve student's problems. *	0.78
I always help others to take decisions whenever the need.	0.75
I don't bother about others' problems. *	0.81
I do not consider others point of view. *	0.81
I do not have extra time for the students beyond classroom. *	0.82
Social motive Items	
I am unable to build rapport with my colleagues. *	0.76

I attend different social events despite of my busy schedule.	0.75
I don't like to be in contact with others. *	0.74
I don't like the people who criticize me. *	0.74
I always enjoy working together with my colleagues.	0.79
I do not share my contacts easily. *	0.75

*Note.* \*negative items of emotional intelligence scale

**Table 3.9**

*Factor inter-correlations of dimensions of emotional intelligence scale*

	SP	SR	SD	EM	SM
SP	---				
SR	<b>.27**</b>	---			
SD	<b>.20**</b>	<b>.67**</b>	---		
EM	<b>.37**</b>	<b>.49**</b>	<b>.38**</b>	---	
SM	<b>.32**</b>	<b>.54**</b>	<b>.39**</b>	<b>.66**</b>	---

\*\* Correlation is significant at the 0.01 level (2-tailed). \**Negative scale items*, \*\* $p < .01$

SP=Self-Perception, SR=Self-Regulation, SD=Self- Drive, EM=Empathy, SM=Social Motive

The product-moment correlational analysis of Pearson was used to determine whether or not the latent variables of emotional intelligence were connected. As a consequence, positive bivariate correlation coefficients were determined to be statistically significant. Empathy was significantly more linked with self-regulation ( $r = 0.49$ ,  $p < 0.01$ ) than with self-perception ( $r = 0.37$ ,  $p < 0.01$ ) and self-motivation ( $r = 0.38$ ,  $p < 0.01$ ). Furthermore, the association between self-regulation and self-drive was stronger ( $r = 0.67$ ,  $p < 0.01$ ) than that between self-perception and self-regulation ( $r = 0.20$ ,  $p < 0.01$ ). The relationship between self-perception and self-regulation is modest ( $r = 0.27$ ,  $p < 0.01$ ). Social motivation is much more strongly associated with empathy ( $r = 0.66$ ,  $p < 0.01$ ) than self-perception ( $r = 0.32$ ,  $p < 0.01$ ), self-regulation ( $r = 0.54$ ,  $p < 0.01$ ), and self-drive ( $r = 0.39$ ,  $p < 0.01$ ) (see Table 3.9). After doing this study, it can be concluded that all dimensions are interconnected. Low levels of Cohen's d coefficients



(Cohen, 1988) indicate that intra-construct correlations were quite minimal. This suggests that emotional intelligence construct aspects are substantially interrelated. So, it may be said that emotional intelligence is a crucial psychological concept.

### 3.6.1.7 Final scale

The final emotional intelligence scale consisted with 28 items (10 positively worded and 18 negatively worded). The dimension-wise distribution of serial number-wise items has been depicted in Table 3.10

**Table 3.10**

*Serial Number-wise distribution of items in each dimension and types of items*

Sl No.	Dimensions	Nature of Items	No. of Items	Total No. of Items	Total
1.	Self-Perception	Positive	3	1,2,5	7
		Negative	4	3,4,6,7	
2.	Self-Regulation	Positive	2	8,12	5
		Negative	3	9,10,11	
3.	Self-Motive	Positive	2	15,17	5
		Negative	3	13,14,16	
4.	Empathy	Positive	1	19	5
		Negative	4	18,20,21,22	
5.	Social Motive	Positive	2	24,27	6
		Negative	4	23,25,26,28	
<b>Positive Items=10 + Negative Items=18</b>				<b>Total</b>	<b>28Items</b>

### 3.6.1.8 Confirmation of the measurement model

A first-order confirmatory factor analysis (Byrne, 2005) with the final 28 scale items under the five factors (SP, SR, SD, EM and SM) of emotional intelligence was conducted. The model fit level highly satisfactory supported the 5-factor model (see Figure 3.11):  $\chi^2$  (df) = 775.977,  $p < 0.001$ ,  $\chi^2/df = 2.28$ , CFI = 0.947, GFI=0.874, TLI = 0.937, PCFI=0.993, PNFI= 0.962, SRMR = 0.053, RMSEA=0.46 (see Table 3.11). Standardized Regression Weights are also depicted below (see Table 3.12)

**Table 3.11**

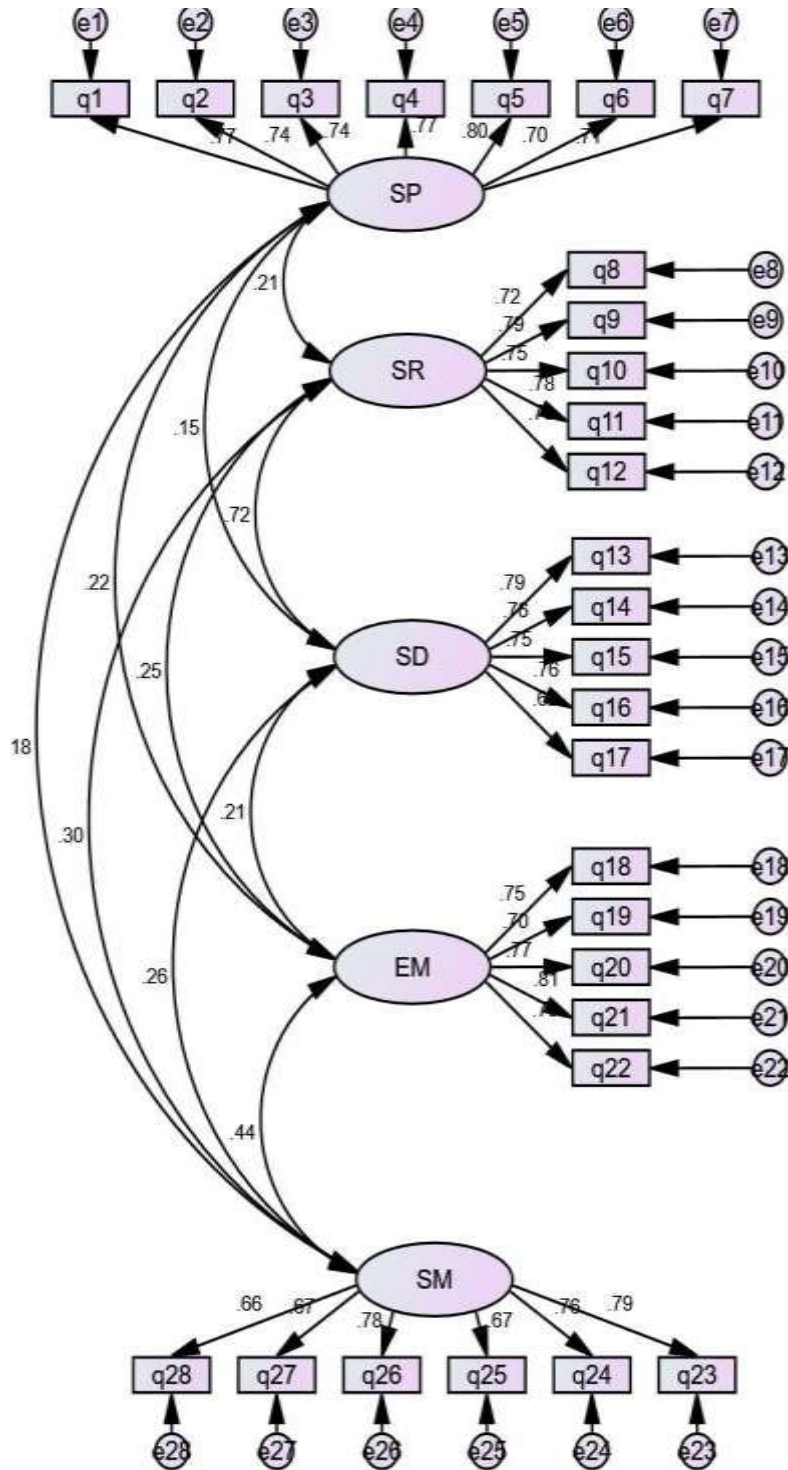
*Model fit indices of 5-factor model from confirmatory factor analyses*

<b>5-factor model</b>	$\chi^2$ (df)	<b>P</b>	<b>df</b>	$\chi^2/df$	<b>CFI</b>	<b>GFI</b>	<b>TLI</b>	<b>PCFI</b>	<b>PNFI</b>	<b>SRMR</b>	<b>RMSEA</b>
<b>SP+SR</b>		<.00	3	2.2	0.9	.8	.9	.99	.96	0.05	.04
<b>+SD+E</b>	775.977	1	4	8	47	74	37	3	2	3	6
<b>M+SM</b>			0								

<sup>a</sup>Note. A single fivefold emotional intelligence scale. The ‘+’ sign was used to mean distinct factors.

**Figure 3.7**

*Structural Model of Five Factors of Emotional Intelligence Scale (standardized coefficient)*



**Table 3.12***Standardized Regression Weights*

<b>Regression Path</b>	<b>Estimate</b>
q1<---SP	0.768
q2<---SP	0.739
q3<---SP	0.736
q4<---SP	0.773
q5<---SP	0.797
q6<---SP	0.699
q7<---SP	0.713
q8<---SR	0.720
q9<---SR	0.792
q10<---SR	0.751
q11<---SR	0.784
q12<---SR	0.728
q13<---SD	0.786
q14<---SD	0.757
q15<---SD	0.752
q16<---SD	0.759
q17<---SD	0.618
q18<---EM	0.750
q19<---EM	0.704
q20<---EM	0.773
q21<---EM	0.810
q22<---EM	0.787
q23<---SM	0.788
q24<---SM	0.760
q25<---SM	0.666
q26<---SM	0.780
q27<---SM	0.674
q28<---SM	0.656

### **3.6.1.9 Validity**

The scale has face validity because it was assessed by specialists and changed in accordance with their recommendations. Item analysis was done for content validity, and only the items with statistically significant discriminative power were kept. First-order Confirmatory Factor Analysis was also used to test the scale's Factorial Validity. The outcomes are presented in Rotated Component Matrix (see Figure 3.8) for the five component model of the emotional intelligence scale. On the basis of Table 3.8, the 7 items with item no. 1, 6, 11, 17, 22, 25 and 28 were placed under component 1: Self-Perception, the 5 items with item no. 4, 8, 13, 19 and 27 were placed under component 2: Self-Regulation, and the 5 items with item no. 3, 7, 14, 20 and 24 were placed under component 3: Self-Drive the 5 items with item no. 5, 10, 15, 18 and 23 were placed under component 4: Empathy the 6 items with item no. 2, 9, 12, 16, 21 and 26 were placed under component 5: Social Motive

#### **A) Factorial validity**

##### **a) Convergent validity**

Using standardized factor loadings, which should be less than 0.55, the link between the observed variables and the corresponding distinct latent variable was examined (Hair et al. 2017, Comrey and Lee 1992; Harrington, 2008; Anderson and Gerbing, 1988). All of the standardized factor loadings in the five factor model were statistically significant ( $p < 0.001$ ). Although the self-perception, self-regulation, self-drive, empathy, and social motivation composite reliability (CR) coefficients were 0.90, 0.87, 0.87, 0.88, and 0.87, respectively (see Table 3.13); they showed a satisfactory value over 0.70. (Fornell, 1982). However, the average variance extracted (AVE) for each dimension (Self-Perception, Self-Regulation, Self-Drive, Empathy, Social Motive, was 0.56, 0.57, 0.54, 0.59 and 0.52 respectively (see Table 3.13), was greater than 0.50 (Bagozzi and Yi 1988; Fornell 1982) means it indicates greater common variance was got by each and every construct than the variance due to the measurement error.

**Table 3.13***Convergent validity of emotional intelligence scale*

<b>Factors</b>	<b>CR</b>	<b>AVE</b>	<b>AVE&gt;0.5</b>	<b>CR&gt;0.7</b>	<b>CR&gt;AVE</b>	<b>Convergent validity</b>
<b>SP</b>	0.90	0.56	Satisfied	Satisfied	Satisfied	Established
<b>SR</b>	0.87	0.57	Satisfied	Satisfied	Satisfied	Established
<b>SD</b>	0.87	0.54	Satisfied	Satisfied	Satisfied	Established
<b>EM</b>	0.88	0.59	Satisfied	Satisfied	Satisfied	Established
<b>SM</b>	0.87	0.52	Satisfied	Satisfied	Satisfied	Established

Note. SP=Self-Perception, SR=Self-Regulation, SD=Self-Drive, EM=Empathy, SM=Social Motive, CR=Composite reliability, AVE=Average variance extracted

According to these findings, each dimension meets the criteria for convergent validity (CR>0.70, AVE>0.5, CR>AVE; Hair et al., 2017). The Cronbach's values for Self-Perception, Self-Regulation, Self-Drive, Empathy, and Social Motivation for the entire scale were 0.900, 0.870, 0.850, 0.880, 0.870, and 0.890, respectively, which above the statistically admissible range (>.7; Hair et al., 2017). This demonstrated the instrument's dependability.

#### **b) Discriminant validity**

Further, maximum shared variance (MSV) (for Self Perception=0.05, Self-Regulation=0.52, Self-Drive=0.52, Empathy=0.19, and Social Motive=0.19) and average shared variance (ASV) (for Self Perception=0.04, Self-Regulation=0.14, Self-Drive=0.11, Empathy=0.08, and Social Motive=0.09) were calculated from intra-construct correlation coefficients in the 5-factor measurement model via rotated component matrix for each latent construct (see Table: 3.8). For each latent component, MSV and ASV were shown to be quantitatively smaller than AVE. Hence, each component meets the criteria for discriminant validity (Fornell & Larcker, 1981; Hair, Black, Babin, Anderson, & Tatham, 2014). Convergent and discriminated validity is given in below table 3.13 and table 3.14 of emotional intelligence scale.

**Table 3.14***Discriminant validity of emotional intelligence scale*

<b>Factors</b>	<b>AVE</b>	<b>MSV</b>	<b>ASV</b>	<b>AVE&gt;MSV</b>	<b>AVE&gt;ASV</b>	<b>Discriminant validity</b>
<b>SP</b>	0.56	0.05	0.04	Satisfied	Satisfied	Established
<b>SR</b>	0.57	0.52	0.14	Satisfied	Satisfied	Established
<b>SD</b>	0.54	0.52	0.11	Satisfied	Satisfied	Established
<b>EM</b>	0.59	0.19	0.08	Satisfied	Satisfied	Established
<b>SM</b>	0.52	0.19	0.09	Satisfied	Satisfied	Established

Note. SP=Self-Perception, SR=Self-Regulation, SD=Self- Drive, EM=Empathy, SM=Social Motive, AVE=Average variance extracted, MSV=Maximum shared variance, ASV=Average shared variance

CFA findings verified the construct (convergent and discriminant) validity and internal consistency reliability of the five-factor measuring model of emotional intelligence. The fifth element, which has been supported by earlier researchers, is validated by the present study, which also validates the proposed factorial structure of the emotional intelligence construct.

### **B) Reliability**

The idea that a high number indicates that a group of items is unidimensional is perhaps the most pervasive and popular fallacy concerning the Cronbach's alpha. However, assuming the unidimensionality of those things, Cronbach's alpha becomes a valid indicator of the reliability of a set of items (Graham, 2006). It is obvious that high does not support unidimensionality. As a result, until it has been proven that the items assess a single construct, should not be reported as a measure of the dependability of a set of observed scores. Then, the internal consistency of the emotional intelligence was calculated using Cronbach's Alpha for each sub-scale and for the overall scale based on the scores of 595 respondents.

The reliability coefficients are given in Table 3.15. The Cronbach's  $\alpha$  value for Self-Perception=0.90, Self-Regulation=0.87, Self- Drive=0.85, Empathy=0.88 and

Social Motive= 0.87 were respectively (see Table 3.15), and 0.890 for the overall scale was higher than the statistically acceptable figures ( $\alpha > .7$ ; Hair et al., 2017). This demonstrated the instrument's high level of dependability. Additionally, the item total correlation and the inter-item correlations for every item were calculated; the findings are shown in Tables 3.5 and 3.6, respectively. Additionally, the scale's Split-Half Reliability was determined using the odd-even approach and the scores of 595 teachers. The Spearman-Brown Prophecy method was used to calculate the students' scores on items with odd and even numbers, yielding the emotional intelligence Scale's Split-Half Reliability Coefficient of 0.89, which is significant at 0.01 levels.

**Table 3.15**

*Reliability coefficient of the overall scale and dimensions of emotional intelligence scale*

<b>Sl. No.</b>	<b>Dimensions</b>	<b>Number of items</b>	<b>Cronbach's Alpha</b>
1	<b>Self-Perception</b>	7	0.90
2	<b>Self-Regulation</b>	5	0.87
3	<b>Self- Drive</b>	5	0.85
4	<b>Empathy</b>	5	0.88
5	<b>Social Motive</b>	6	0.87
	<b>Overall Emotional Intelligence Scale</b>	<b>28</b>	<b>0.89</b>

### **C) Norms**

On the basis of the statistical results presented in Table 3.17, scoring procedure (see Table 3.16) z-Score Norms dimension-wise and for the overall scale have been developed and presented as: Dimension-wise Norms in Table 3.18, Table 3.19, Table 3.20, Table 3.21 and Table 3.22 whereas for the overall scale in Table 3.23



respectively. Norms for interpretation the level of each dimension and overall emotional intelligence Scale have been presented in Table 3.24.

#### D) Scoring procedures

**Table 3.16**

*Scoring system*

<b>Nature of item</b>	<b>Strongly agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly disagree</b>
<b>Positive</b>	5	4	3	2	1
<b>Negative</b>	1	2	3	4	5

The final scale with five key dimensions and 28 scale items were administered on a randomly selected 595 secondary level school teachers under West Bengal Board of Secondary Education (WBBSE). The schools were situated in the seven districts (Cooch Behar, PurbaBardhaman, Nadia, Murshidabad, Birbhum, North 24 Parganas and Hooghly) of West Bengal. After scoring the 595 answer sheet, the statistical results obtained are as given in Table 3.17:

**Table 3.17**

*Statistical results of emotional intelligence scale*

<b>Sl. No.</b>	<b>Sub-scales</b>	<b>N</b>	<b>M</b>	<b>SD</b>
1	<b>Self-Perception</b>	595	22.69	4.84
2	<b>Self-Regulation</b>	595	15.45	3.69
3	<b>Self- Drive</b>	595	16.36	3.62
4	<b>Empathy</b>	595	15.49	3.86
5	<b>Social Motive</b>	595	18.75	4.73
<b>Overall scale</b>			<b>88.73</b>	<b>13.14</b>

On the basis of the statistical results presented in Table 4, z-Score Norms dimension-wise and for the overall scale have been developed and presented as: Dimension-wise Norms in Table 3.18, Table 3.19, Table 3.20, Table 3.21 and Table 3.22 whereas for the overall scale in Table 3.23, respectively. Norms for interpretation the level of each dimension and overall emotional intelligence Scale have been presented in Table 3.24.

**Table 3.18**

*Z-score norms for Self-Perception sub-scale*

<b>M= 22.69</b>		<b>SD= 4.84</b>		<b>N= 595</b>	
<b>Raw score</b>	<b>Z-score</b>	<b>Raw score</b>	<b>Z-score</b>	<b>Raw score</b>	<b>Z-score</b>
<b>9</b>	-2.83	<b>18</b>	-0.97	<b>27</b>	+0.89
<b>10</b>	-2.62	<b>19</b>	-0.76	<b>28</b>	+1.10
<b>11</b>	-2.42	<b>20</b>	-0.56	<b>29</b>	+1.30
<b>12</b>	-2.21	<b>21</b>	-0.35	<b>30</b>	+1.51
<b>13</b>	-2.00	<b>22</b>	-0.14	<b>31</b>	+1.72
<b>14</b>	-1.80	<b>23</b>	+0.06	<b>32</b>	+1.92
<b>15</b>	-1.59	<b>24</b>	+0.27	<b>33</b>	+2.13
<b>16</b>	-1.38	<b>25</b>	+0.48	<b>34</b>	+2.34
<b>17</b>	-1.18	<b>26</b>	+0.68		

**Table 3.19***Z-score norms for Self-Regulation sub-scale*

<b>M= 15.45</b>		<b>SD= 3.69</b>		<b>N= 595</b>	
<b>Raw score</b>	<b>Z-score</b>	<b>Raw score</b>	<b>Z-score</b>	<b>Raw score</b>	<b>Z-score</b>
<b>7</b>	-2.29	<b>13</b>	-0.66	<b>19</b>	+0.96
<b>8</b>	-2.02	<b>14</b>	-0.39	<b>20</b>	+1.23
<b>9</b>	-1.75	<b>15</b>	-0.12	<b>21</b>	+1.50
<b>10</b>	-1.48	<b>16</b>	+0.15	<b>22</b>	+1.78
<b>11</b>	-1.21	<b>17</b>	+0.42	<b>23</b>	+2.05
<b>12</b>	-0.93	<b>18</b>	+0.69	<b>24</b>	+2.32

**Table 3.20***Z-Score Norms for Self- Drive Sub-Scale*

<b>M= 16.36</b>		<b>SD= 3.62</b>		<b>N= 595</b>	
<b>Raw score</b>	<b>Z-score</b>	<b>Raw score</b>	<b>Z-score</b>	<b>Raw score</b>	<b>Z-score</b>
<b>9</b>	-2.03	<b>14</b>	-0.65	<b>19</b>	+0.73
<b>10</b>	-1.76	<b>15</b>	-0.38	<b>20</b>	+1.01
<b>11</b>	-1.48	<b>16</b>	-0.10	<b>21</b>	+1.28
<b>12</b>	-1.20	<b>17</b>	+0.18	<b>22</b>	+1.56
<b>13</b>	-0.93	<b>18</b>	+0.45	<b>23</b>	+1.83
<b>24</b>	+2.11				

**Table 3.21***Z-score norms for Empathysub-scale*

<b>M= 15.49</b>		<b>SD= 3.86</b>		<b>N= 595</b>	
<b>Raw score</b>	<b>Z-score</b>	<b>Raw score</b>	<b>Z-score</b>	<b>Raw score</b>	<b>Z-score</b>
<b>7</b>	-2.20	<b>13</b>	-0.65	<b>19</b>	+0.91
<b>8</b>	-1.94	<b>14</b>	-0.39	<b>20</b>	+1.17
<b>9</b>	-1.68	<b>15</b>	-0.13	<b>21</b>	+1.43
<b>10</b>	-1.42	<b>16</b>	+0.13	<b>22</b>	+1.69
<b>11</b>	-1.16	<b>17</b>	+0.39	<b>23</b>	+1.95
<b>12</b>	-0.90	<b>18</b>	+0.65	<b>24</b>	+2.20

**Table 3.22***Z-score norms for Social Motive sub-scale*

<b>M= 18.75</b>		<b>SD= 4.73</b>		<b>N= 595</b>	
<b>Raw score</b>	<b>Z-score</b>	<b>Raw score</b>	<b>Z-score</b>	<b>Raw score</b>	<b>Z-score</b>
<b>8</b>	-2.27	<b>16</b>	-0.58	<b>24</b>	+1.11
<b>9</b>	-2.06	<b>17</b>	-0.37	<b>25</b>	+1.32
<b>10</b>	-1.85	<b>18</b>	-0.16	<b>26</b>	+1.53
<b>11</b>	-1.64	<b>19</b>	+0.05	<b>27</b>	+1.74
<b>12</b>	-1.43	<b>20</b>	+0.26	<b>28</b>	+1.96
<b>13</b>	-1.22	<b>21</b>	+0.48	<b>29</b>	+2.17
<b>14</b>	-1.00	<b>22</b>	+0.69		
<b>15</b>	-0.79	<b>23</b>	+0.90		

**Table 3.23***Z-score norms for overall emotional intelligence scale*

M= 88.73		SD= 13.14		N= 595	
Raw score	Z-score	Raw score	Z-score	Raw score	Z-score
50	-2.95	73	-1.20	96	+0.55
51	-2.87	74	-1.12	97	+0.63
52	-2.80	75	-1.04	98	+0.71
53	-2.72	76	-0.97	99	+0.78
54	-2.64	77	-0.89	100	+0.86
55	-2.57	78	-0.82	101	+0.93
56	-2.49	79	-0.74	102	+1.01
57	-2.41	80	-0.66	103	+1.09
58	-2.34	81	-0.59	104	+1.16
59	-2.26	82	-0.51	105	+1.24
60	-2.19	83	-0.44	106	+1.31
61	-2.11	84	-0.36	107	+1.39
62	-2.03	85	-0.28	108	+1.47
63	-1.96	86	-0.21	109	+1.54
64	-1.88	87	-0.13	110	+1.62
65	-1.81	88	-0.06	111	+1.69
66	-1.73	89	+0.02	112	+1.77
67	-1.65	90	+0.10	113	+1.85
68	-1.58	91	+0.17	114	+1.92
69	-1.50	92	+0.25	115	+2.00
70	-1.43	93	+0.32	116	+2.08
71	-1.35	94	+0.40	117	+2.15
72	-1.27	95	+0.48	118	+2.23

**Table 3.24**

*Norms for interpretation of the levels of emotional intelligence: Dimension-wise and overall scale*

Sl. No.	Raw score range							Z-score range	Levels of Emotional Intelligence
	Dimension-wise raw score range						Overall		
	SP	SR	SD	EM	SM	Scale			
1	33 & above	23 & above	24	24	29	116 & above	+2.01 & above	& Very high	
2	29 to 32	21 & 22	21 & 22	21 & 23	25-28	106-115	+1.26 & +2.00	to High	
3	26 to 28	18 to 20	19-20	19-20	21-24	96-105	+0.51 & +1.25	to Moderately high	
4	21 to 25	14 to 17	15-18	14-18	17-20	83-95	-0.50 & +0.50	to Average	
5	17 to 20	11 to 13	12-14	11-13	13-16	73-82	-1.25 to -0.51	Moderately low	
6	13 to 16	9 to 10	10-11	8-10	10-12	63-72	-2.00 to -1.26	Low	
7	12 & below	8 & below	9	7	9 & below	62 & below	-2.01 & below	& Very low	

Note: SP=Self-Perception, SR=Self-Regulation, SD=Self-Drive, EM=Empathy, SM=Social Motive

### 3.6.2 Construction and Validation of Social Intelligence Scale (SIS)

Based on research objectives, to measure the latent variables the following tools were used. Rating is appropriate as perception/opinion is measured.

Social intelligence (SI) is a very significant psychological construct for all round development of personality and helps to be successful in life. Social intelligence and academic intelligence are two parts of a same coin and they support each other (Ford, & Tisak, 1983; Albrecht, 2006). In the process of socialization and professional development Social intelligence plays an important role. Social intelligence helps in interpersonal relationship (Ford & Tisak, 1983) to achieve desired goal (Yermentayeva & Uaidullakzy, 2014). Social intelligence helps to improve communicative competence (Yermentayeva & Uaidullakzy, 2014), mental health (Prathima & Kulsum, 2013), Professional Performance (Widodo, Suendarti & Hasbullah, 2020), leadership qualities (Garg & Gera, 2019), Academic Achievement (Meijs, Antonius, Cillessen, Scholte, Segers & Spijkerman, 2010), Classroom Discipline Strategies (Jeloudar, & Yunus, 2011), metacognition of adolescents (Sekar, 2016), Self-Regulation (Hashem, 2021), social competences (Monnier, 2015), Creative Behavior (Kriemeen & Hajaia, 2017), Teachers' Continuous Improvement (McQuade, 2013), Teacher Student Interaction (Krcmar, 2018). So, it has a very important role in the field of education especially school education.

Classroom is a social laboratory wherein teacher must build a web of communication which becomes a medium for bilateral transaction between the teachers and taught which is driven by the social intelligence of the teachers. Teacher must possess social skills to make the teaching learning process more interactive. There was a difficulty in definition of social intelligence over years (Guilford, 1967; Thorndike, 1920; Ford & Tisak, 1983). Social intelligence is part of general intelligence such as interpersonal processes and social perception (Thorndike, 1920), ability of adapting the individual and social need (Eysenck, 1985), ability to judging everyone properly, adapting qualities in every situation (Allport, 1937), social attitudes is the ability to evaluate one (Myers, 1995) total combination and regulating the cognitive processes that related social facilities (Guilford, 1967), it is kind of mental abilities with helps in solving different societal problem (Ford and Tisak, 1983).

Social intelligence is the combination of social awareness, social dynamics, interpersonal relationship and interpersonal communication i.e. different social situations (Prathima & Kulsum, 2013), social cooperation with others (Albrecht, 2006), effective interpersonal communication in every situations (Goleman and

Boyatzis 2008), attainment of significant social goals in specific socio-cultural contexts (Ford, 1982), ability to deal others with adapted social skills, social cooperation, interpretational relationship, communication ability with different unknown persons in different unexpected situations (Vernon, 1933). Different psychologist generally agree about social intelligence is a multi-dimensional Social intelligence is undoubtedly a multifaceted construct. Different dimensions are unclear and very conflicting.

The concept, dimensions, and measurement of social intelligence are inconsistent, as shown by a comprehensive analysis of several researches. Students and executives in a global environment have access to a variety of instruments for assessing social intelligence. Yet, there are relatively few studies that assess the social intelligence of instructors. The researcher was unable to locate any modern instruments for measuring school teachers' social intelligence. Mostly two instruments, the Tromso social intelligence scale from 2001 in the worldwide context for students and the Chadda and Ganesan scale from 1986 for students solely in the Indian setting. Ultimately, it will be necessary to build a social intelligence scale for teachers, seeing the construct as a regulatory mechanism for improving the quality of teachers' personal and professional lives. Therefore, such anomalies in the measurement of the social intelligence concept need a robust and dependable instrument that would reliably test the social intelligence of instructors, primarily in the setting of school education.

The multitude of methods for measuring social intelligence utilising distinct instruments is an additional obstacle for numerous aspects. To measure social intelligence there were some specific modes like Self-report (Silvera, Martinussen, & Dahl, 2000; Miller & Ross, 1975), observation schedule (Wong, Day, Maxwell & Meara, 1995); Scale (Silvera, Martinussen, & Dahl, 2001; Moss et al., 1955), Inventory (Lacanlale, 2013); test (O'Sullivan & Guilford, 1966; Moss, et.al., 1949; 1955) used for the same purpose. Some aspects are murky and very contradictory. After a thorough review of related literature different indicators of social intelligence are depicted in Table 3.25.



### 3.6.2.1 *Item writing*

Following a thorough review of the relevant literature (Silvera et al., 2001; Goleman, 2006; Buzan, 2002; O'Sullivan & Guilford, 1975; Prathima & Kulsum, 2013; Chadha & Ganesan, 1986), where the majority of items for the instruments were developed, a number of standardised instruments were developed to measure social intelligence. The primary objective of this scale's creation was to get the range measurement, item varieties, and content coverage. Hence, only a small number of instruments with mostly two factorial structures (e.g., 3-factor model, 8-factor model) and modes of measurement were evaluated (e.g. Scale, Inventory, test, observation schedule, self-report). First, 108 articles on social intelligence were composed. The things that were just social intelligence's antecedents and outcomes were eliminated via a predetermined, iterative procedure.

Then, initially, 126 articles on social intelligence were composed. In addition, five anchor points were established for grading the items on the scale, ranging from "strongly disagree" (1) to "strongly agree" (5). Since seven-point Likert scales are long and might confuse respondents, five-point Likert scales were used to decrease respondents' discomfort and increase response rates (Pai & Huang, 2011). The tests had items that represented several emotional intelligence traits that had been discovered in earlier investigations and following dimensions were evolved (see Table 3.25).

**Table 3.25**

*Social intelligence scale used in previous studies*

Existing standardized Tools	Indicators of Social Intelligence
Silvera, Martinussen and Dahl, 2001	social knowledge, social awareness, and social skill
Silberman, 2000	expressing emotions, expressing needs, understanding other people, social communication and feedback generation, motivating others, generating creative solutions in intricate situations
Buzan, 2002	verbal and nonverbal communication, active listening skills, sociability, inducement, active social medium, negotiation,

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	and social problem solving,
	impressing others, interpersonal behavior
Sullivan & Guilford, 1966	Social awareness, comprehending social situations, understanding facial expressions, social expressivity, changing ability, managing behavioral events, and prediction.
Goleman, 2008	find solutions by discussing, establishing personal connections, being able to organize social groups, making social analysis
Hampel, Weis, Hiller and Witthöft, 2001 Prathima &	social memory, social perception, and social flexibility
Umme Kulsum, 2013	Self-Development, Empathy, Self-awareness, Value Orientation, and Social Stability

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### 3.6.2.2 *Initial Tryout:*

First of all initial try-out was conducted to write different items under five dimensions of emotional intelligence. The initial try-out was carried out to make sure that all sections of the construct were covered by the items available in the tools, the items are consistent with the context of the current study, and there are no items representing either antecedents or consequences left in the original draught. Expert tryout, individual tryout and group tryout were included under initial tryout. These tryouts are explained below:

#### **a) Experts Tryout**

The 108-item social intelligence scale was submitted to 25 seasoned educational psychology specialists (Lambie et al., 2017) for further feedback. After receiving input from a variety of specialists, 39 items were removed from the social intelligence test, while others were adjusted. Using a predetermined, repeating procedure, the things that were essentially precursors and outcomes of social intelligence were eliminated. Then, a group of 69 questions (37 negative items) was kept as the first draught for the intended social intelligence assessment instrument. This social intelligence test prototype had a five-point rating scale ranging from "strongly disagree" to "strongly agree". Ultimately, the Departmental Research Committee approved this plan (DRC). This allowed the researcher to use the instrument for the pre-test (individual try-out).

### **b) Individual Tryout (Pre-test and pilot study)**

Initially, pre-testing was conducted with 69 items of a draught social intelligence scale for 25 secondary level school teachers (Pernegeret al., 2015) teaching class-IX and Class-X (Kumar et al., 2013). The primary purpose of pre-testing was to determine if any of the questions were double-barreled, ambiguous, poorly sequenced, and confusing in meaning (Sekaran, 2003) and whether the participants were adequately trained. Several elements on the social intelligence scale were deleted. Low variability and skewness of scores relative to the mean score were noted for eight scale items. At the time of computation, the scores for negative elements were inverted. In addition, six unambiguous items and seven questions with social desirability bias were eliminated. In addition to this, eleven items were eliminated owing to frequent technique biases. So, these 32 things are adjusted to make them suitable for the current research. So, 37 elements were preserved in the tool's early edition. In addition, the Cronbach alpha value of 0.95 indicated that the reliability study yielded good dependability. This is necessary to ensure its viability and sufficiency (Teijlingen & Hundley, 2002).

### **c) Group Tryout**

First of all, 645 secondary school teachers were handed a 37-item social intelligence measure. There are 300 female teachers (46.51%) and 345 male teachers (53.48%) among the 645 secondary school instructors. All secondary school teachers are picked at random from the Birbhum district in West Bengal. Individual instructors and the institution's head were asked for their consent prior to receiving replies from them. Teachers were told that replies would be kept secret, neither assessed nor revealed, and used only for research. Teachers were then given the rating scale for social intelligence to complete. Strongly Agree, Agree, Undecided, Disagree, and Strongly Disagree, with scores of 5, 4, 3, 2, and 1 corresponding to these grading categories. Negative items underwent the same inverted scoring technique as positive ones. Each respondent's total score was determined by aggregating the scores for each subscale of social intelligence.

#### **3.6.2.3 Item analysis**

After getting responses from teachers through individual and group try-out scores arranged in a descending order after calculation. The respondent belonging to

the top 27% group (N= 167) and bottom 27% (N= 167) group were identified. Then they are arranged for 37 scale items (see Table 3.26) to determine discrimination index of the items.

**Table 3.26**

*Item-wise M, SD, and t-values*

**N= 334**

<b>Item No.</b>	<b>M<sub>1</sub></b>	<b>SD<sub>1</sub></b>	<b>M<sub>2</sub></b>	<b>SD<sub>2</sub></b>	<b>t-value</b>	<b>p-value</b>	<b>Remark</b>
1	3.04	0.71	3.14	0.29	-3.55	0.01	Selected
2	3.58	0.18	3.66	0.17	-1.41	0.17	Rejected
3	3.13	0.84	3.47	0.66	-2.44	0.58	Selected
4	3.12	0.43	3.69	0.34	-1.55	0.09	Selected
5	3.19	0.42	3.44	0.84	-0.67	0.47	Selected
6	3.13	0.64	3.93	0.47	-2.29	0.39	Selected
7	3.11	0.14	3.74	0.93	-2.61	0.17	Rejected
8	3.16	0.74	2.69	0.74	1.66	0.16	Selected
9	3.21	0.81	2.38	0.69	2.77	0.95	Selected
10	3.22	0.82	2.61	0.67	1.23	0.24	Selected
11	3.23	0.73	3.71	0.71	1.74	0.34	Selected
12	3.16	0.14	3.92	0.47	0.69	0.73	Selected
13	3.71	0.56	3.88	0.69	2.74	0.58	Rejected
14	3.42	0.94	2.76	0.44	3.94	0.32	Selected
15	3.91	0.91	3.84	1.17	1.71	0.46	Selected
16	3.73	0.77	3.73	0.25	1.36	0.71	Rejected
17	3.29	0.84	2.53	0.36	3.87	0.09	Selected
18	3.17	0.73	2.77	0.47	3.71	0.16	Selected

19	3.62	0.77	3.71	0.67	1.26	0.34	Selected
20	3.12	0.76	3.64	1.17	2.88	0.04	Rejected
21	3.26	0.14	3.93	1.35	1.33	0.37	Selected
22	3.71	0.80	3.17	1.46	2.17	0.06	Selected
23	3.36	0.94	3.74	0.94	-0.74	0.72	Selected
24	3.17	0.47	2.94	0.28	4.71	0.03	Selected
25	3.04	0.36	2.87	0.77	1.28	0.71	Rejected
26	2.14	1.94	3.39	1.69	-3.91	0.03	Selected
27	2.69	0.86	2.88	0.77	-1.88	0.06	Selected
28	2.17	0.75	2.36	0.17	0.71	1.14	Selected
29	2.91	0.88	2.74	0.37	0.73	0.37	Selected
30	3.26	0.81	2.73	0.92	4.87	0.58	Rejected
31	2.74	0.94	2.99	0.61	-1.49	0.34	Selected
32	3.25	0.73	2.46	1.41	8.58	0.74	Selected
33	3.23	0.76	2.42	0.69	7.38	0.58	Selected
34	3.39	0.72	3.17	0.34	1.64	0.71	Selected
35	2.64	1.25	3.08	1.27	-2.36	0.73	Rejected
36	2.81	0.88	3.46	1.63	-3.72	0.28	Selected
37	2.47	0.74	3.36	1.99	-0.47	0.64	Selected

From the Table 3.26, it is clear that t-values for the items at serial numbers 1, 3, 4, 5, 6, 8, 9, 10, 11, 12, 14, 15, 17, 18, 19, 21, 22, 23, 24, 26, 27, 28, 29, 31, 32, 33, 34, 36, 37 are significant either at 0.01 level ( $p < 0.01$ ) or at 0.05 level ( $p < 0.05$ ). These items were found to discriminate between the respondents belonging to the top 27% group and the bottom 27% group. Thus, these 29 scale items were kept in the instrument for further analysis.

#### **3.6.2.4 Final Tryout**

Two independent random subsamples were used to gather data for Exploratory Factor Analysis and Confirmatory Factor Analysis. The first sub-sample contained 627 (312 females) and second sub-sample contained 645 (300 females) secondary school students in the seven districts (Cooch Behar, PurbaBardhaman, Nadia, Murshidabad, Birbhum, North Dinajpur and Hooghly) of West Bengal. None of the samples was included in the final data collection of the study. Bengali was the medium of instruction and communication in all the selected schools. Consents were taken from both the head of the institutions and of the students for getting the responses. Then, each student was provided with one copy of the Emotional Intelligence Scale and was asked to follow the instructions. In addition, students were assured that their replies would be kept anonymous and utilized only for research.

Two independent random subsamples were used to collect data for exploratory factor analysis and confirmatory factor analysis. Both the first and second sub-samples of secondary school pupils in West Bengal's seven districts (Birbhum, Murshidabad, PurbaBarddhamanan, Nadia, Hooghly, Cooch Behar, and North Dinajpur) contained 627 (312 females) and 645 (300 females) respectively. None of the samples were used in the study's final data collection. In all of the chosen schools, Bengali served as the primary language of instruction and communication. Both the institution's head and the students' consents were required in order to obtain the responses. The social Intelligence Scale was then distributed to each student, and they were instructed to complete it as instructed. They were also told that the information they provided would be kept private and would only be utilized for study.

#### **3.6.2.5 Preliminary descriptive analysis**

All item values fell within the statistically acceptable range (kurtosis<sup>7</sup> and skewness<sup>2</sup>; Curran et al., 1996). After the statistical analysis was completed, the data were examined. Skewness and kurtosis were examined for each item to see if the results were compatible with a normal probability curve. In addition, measures of central tendency and variability were taken for each scale item.

##### **A. Results of Preliminary descriptive analysis**

For 29 scale items, a descriptive analysis of the values on the 5-point Likert scale ranging from strongly disagree to strongly agree was conducted. A reliability

study was undertaken to determine the internal consistency of all scale items. In addition, the Cronbach's alpha score for the total scale was 0.95, indicating a good reliability coefficient (0.95) (DeVellis, 2003). The standardised value (Z) of the skewness and kurtosis was also computed. After this, the mean and standard deviations were determined to vary from 3.11 to 3.57 and 1.053 to 1.308, respectively. No value of the scale item exceeded the statistical criterion for skewness (-3 to +3) and kurtosis (-10 to +10), as stated by the Kline guideline (2011). The item-total scale correlation coefficients and individual scale items with the overall scale were statistically significant for all 29 items (see Table 3.27).

**Table 3.27**

*Mean, SD, skewness, and kurtosis of the 29 scale items*

Items	Std.					
	Mean Statistic	Deviation Statistic	Skewness		Kurtosis	
			Statistic	Std. Error	Statistic	Std. Error
Item 1	3.28	1.076	-.349	.099	-.467	.197
Item 2	3.23	1.120	-.345	.099	-.520	.197
Item 3	3.26	1.115	-.431	.099	-.492	.197
Item 4	3.37	1.156	-.633	.099	-.419	.197
Item 5	3.46	1.164	-.633	.099	-.475	.197
Item 6	3.57	1.244	-.775	.099	-.380	.197
Item 7	3.37	1.260	-.591	.099	-.729	.197
Item 8	3.38	1.259	-.449	.099	-.812	.197
Item 9	3.37	1.262	-.672	.099	-.642	.197
Item 10	3.33	1.232	-.521	.099	-.718	.197
Item 11	3.44	1.291	-.563	.099	-.733	.197
Item 12	3.44	1.288	-.539	.099	-.753	.197
Item 13	3.33	1.053	-.227	.099	-.381	.197
Item 14	3.31	1.109	-.295	.099	-.515	.197
Item 15	3.34	1.068	-.315	.099	-.387	.197
Item 16	3.32	1.107	-.337	.099	-.464	.197

Item 17	3.31	1.064	-.332	.099	-.274	.197
Item 18	3.41	1.068	-.684	.099	-.132	.197
Item 19	3.45	1.055	-.723	.099	-.127	.197
Item 20	3.29	1.159	-.326	.099	-.556	.197
Item 21	3.25	1.106	-.057	.099	-.604	.197
Item 22	3.24	1.114	-.088	.099	-.709	.197
Item 23	3.22	1.101	-.216	.099	-.522	.197
Item 24	3.21	1.097	-.151	.099	-.493	.197
Item 25	3.14	1.238	-.152	.099	-.902	.197
Item 26	3.15	1.286	-.349	.099	-.985	.197
Item 27	3.17	1.269	-.338	.099	-1.003	.197
Item 28	3.18	1.264	-.183	.099	-.943	.197
Item 29	3.11	1.308	-.229	.099	-1.075	.197

**Table 3.28**

*Item-Total Statistics*

<b>Items</b>	<b>Corrected Item- Total Correlation</b>	<b>Items</b>	<b>Corrected Item- Total Correlation</b>
<b>q1</b>	0.45	<b>q16</b>	0.46
<b>q2</b>	0.43	<b>q17</b>	0.49
<b>q3</b>	0.46	<b>q18</b>	0.43
<b>q4</b>	0.43	<b>q19</b>	0.43
<b>q5</b>	0.42	<b>q20</b>	0.39
<b>q6</b>	0.29	<b>q21</b>	0.45
<b>q7</b>	0.48	<b>q22</b>	0.40
<b>q8</b>	0.44	<b>q23</b>	0.43
<b>q9</b>	0.48	<b>q24</b>	0.41
<b>q10</b>	0.49	<b>q25</b>	0.46
<b>q11</b>	0.41	<b>q26</b>	0.44
<b>q12</b>	0.39	<b>q27</b>	0.42
<b>q13</b>	0.45	<b>q28</b>	0.41
<b>q14</b>	0.46	<b>q29</b>	0.46
<b>q15</b>	0.48		



**Table 3.29**

*Inter item correlation matrix of social intelligence scale*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30				
1	1																																	
2	0.55	1																																
3	0.56	0.53	1																															
4	0.55	0.40	0.66	1																														
5	0.53	0.46	0.66	0.44	1																													
6	0.44	0.33	0.39	0.33	0.44	1																												
7	0.22	0.27	0.26	0.22	0.22	0.22	1																											
8	0.55	0.67	0.74	0.61	0.88	0.61	0.88	1																										
9	0.66	0.55	0.37	0.62	0.24	0.40	0.40	0.11	1																									
10	0.33	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.66	0.44	1																							
11	0.36	0.67	0.74	0.51	0.93	0.39	0.39	0.00	0.00	0.00	0.00	1																						
12	0.11	0.17	0.16	0.11	0.11	0.11	0.11	0.11	0.55	0.44	0.55	0.11	1																					
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1																				
14	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.55	0.44	0.55	0.66	0.11	0.11	1																			
15	0.23	0.31	0.56	0.66	0.51	0.88	0.51	0.88	0.44	0.44	0.44	0.66	0.44	0.66	0.44	1																		
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1																	
17	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	1																
18	0.23	0.27	0.26	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	1															
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1														
20	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	1													
21	0.23	0.31	0.56	0.66	0.51	0.88	0.51	0.88	0.44	0.44	0.44	0.66	0.44	0.66	0.44	0.66	0.44	0.66	0.44	0.66	0.44	1												
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1											
23	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	1										
24	0.23	0.27	0.26	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	1									
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1								
26	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	1							
27	0.23	0.31	0.56	0.66	0.51	0.88	0.51	0.88	0.44	0.44	0.44	0.66	0.44	0.66	0.44	0.66	0.44	0.66	0.44	0.66	0.44	0.66	0.44	0.66	0.44	0.66	0.44	1						
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1					
29	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	1				
30	0.23	0.31	0.56	0.66	0.51	0.88	0.51	0.88	0.44	0.44	0.44	0.66	0.44	0.66	0.44	0.66	0.44	0.66	0.44	0.66	0.44	0.66	0.44	0.66	0.44	0.66	0.44	0.66	0.44	0.66	0.44	0.66	0.44	0.66

## **B. Main analysis**

SPSS 26.0 (IBM Corp., Armonk, NY, USA) was used for data analysis (IBM Corp., Armonk, NY, USA). For all statistical comparisons, the 5% significance level serves as the benchmark. First, Exploratory Factor Analysis (EFA) was conducted utilising the 29 scale components to develop the social intelligence assessment model. Before doing analysis, the negative items were carefully reverse-scored. A number of Confirmatory Factor Analyses (CFA) was conducted to confirm the already-established dimensions.

The measurement model developed by EFA and Confirmatory Factor Analyses (CFA) was then assessed and tested. A 5-factor, first-order model was investigated. The five measurement models were then compared using the following model fit indices: 2 statistic and associated Parsimonious Comparative Fit Index (PCFI), Parsimonious Normed Fit Index (PNFI), Goodness-of-Fit Index (GFI), Tucker Lewis Index (TLI), p-value, (CFI), Standardized Root-mean-square Residual (SRMR), (AIC), and (BIC), where the threshold values for CFI, TLI, and SRMR The concept's validity was determined based on the results of the CFA. Moreover, idea validity was assessed using CFA results.

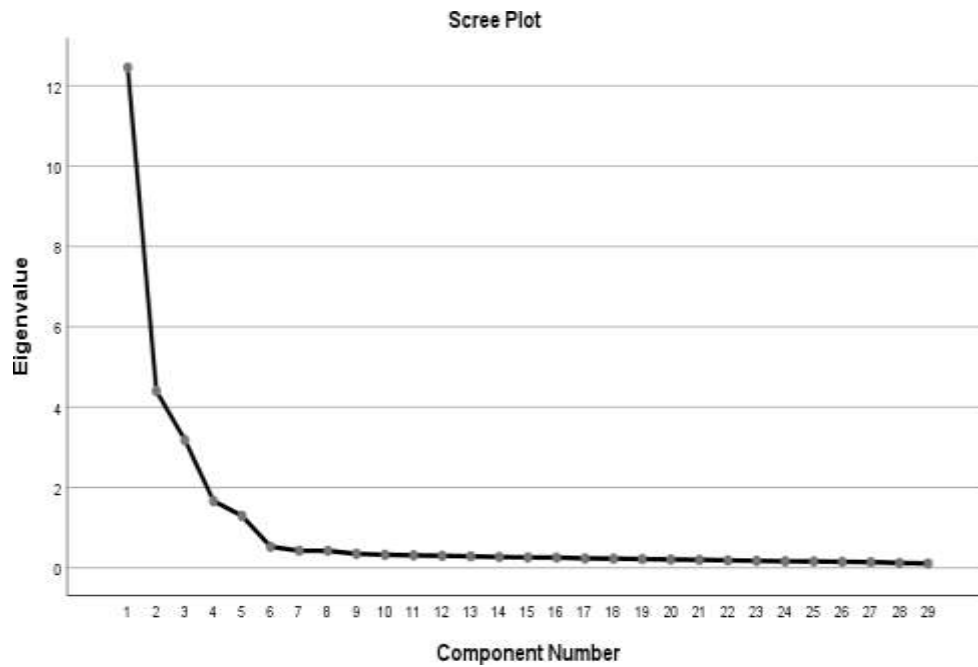
### **3.6.2.6 *Development of the measurement model***

To study the factor structure of the latent construct, an exploratory factor analysis (EFA) was performed using varimax rotation and principal components analysis as a factor extraction approach. Some Eigenfactors were assigned Eigenvalues greater than 1 by the factors. Exploratory factor analysis (EFA) basics are addressed. Kaiser-Meyer-measure Olkin's of sample adequacy (0.864) above 0.6, and Bartlett's Sphericity Test were statistically significant ( $\chi^2 = 1126.43$ ,  $p < .001$ ). Objects were allocated to each scale dimension based on their loading patterns. The 29-item five-factor model consisted of Social-Awareness (six items), Social Adaptability (six items), Social Collaboration (seven items), Social Expressivity (five items), and Interpersonal Connection (five items) (5 items). Social-Awareness (SAw) (item no. SAw1 to SAw6), Social Adaptability (SAd) (item no. SAd7 to SAd12), Social Cooperation (SCo) (item no. SCo13 to SCo19), and Social Expressivity (SEx) (item no. SEx 20 to SEx 24) (see Table 3.31). In addition, the correlation matrix's non-zero determinant value satisfied the positive definiteness criteria. Scree plot (see

Figure 3.8) reveals that the social intelligence construct contains five plots with steep slopes, confirming a five-factor social intelligence model.

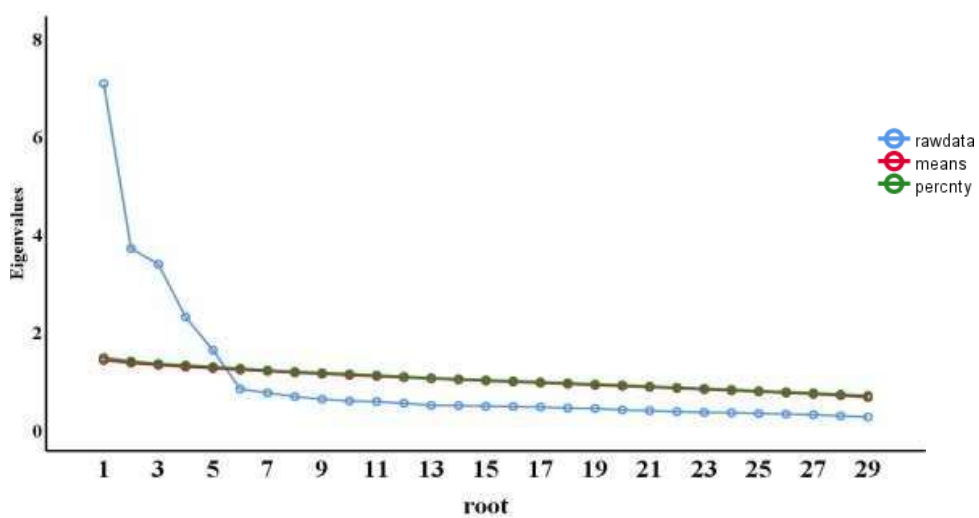
**Figure 3.8**

*Scree plot for five factors of social intelligence construct*



**Figure 3.9**

*Tsplot of Raw Data Eigenvalues, & Mean & (95<sup>th</sup>) Percentile Random Data Eigenvalues*



**Table 3.30***Raw Data Eigenvalues, & Mean & (95<sup>th</sup>) Percentile Random Data Eigenvalues*

<b>Root</b>	<b>Raw Data Eigenvalues</b>	<b>Means of Eigenvalues</b>	<b>(95<sup>th</sup>) Percentile Eigenvalues</b>
1	7.064	1.408	1.462
2	3.695	1.353	1.389
3	3.374	1.309	1.338
4	2.292	1.273	1.309
5	1.616	1.244	1.277
6	0.821	1.213	1.243
7	0.742	1.184	1.207
8	0.666	1.155	1.178
9	0.611	1.129	1.153
10	0.576	1.103	1.130
11	0.563	1.079	1.104
12	0.529	1.056	1.075
13	0.486	1.033	1.049
14	0.481	1.009	1.027
15	0.469	0.987	1.005
16	0.461	0.966	0.985
17	0.453	0.944	0.965
18	0.429	0.923	0.945
19	0.423	0.899	0.920
20	0.392	0.880	0.901
21	0.377	0.857	0.878
22	0.358	0.835	0.855
23	0.342	0.811	0.834
24	0.335	0.789	0.810
25	0.322	0.765	0.783
26	0.308	0.741	0.762
27	0.295	0.717	0.741
28	0.271	0.687	0.710
29	0.249	0.651	0.685

The EFA (eigenvalue>1; Cattell, 1966) led to a five-factor solution that satisfied the Kaiser Criterion. An examination of the scree plot provided evidence in favor of the five-factor solution. To determine how many factors will be kept in the measurement model, parallel analysis was also carried out. When the eigenvalues of the raw data from EFA were compared to the 95th percentile of random eigenvalues, three components were proposed to be maintained (see Figure 3.30). Additionally, the results of Wayne Velicer's Minimum Average Partial (MAP) test (Velicer, 1976; 2000) were similar to those of the scree test (see Figure 3.8), indicating that the five-factor structure of social intelligence construct met both the lowest Bayesian information criterion (BIC) suggested by the parallel analysis and a Bayesian information criterion (BIC) of a factor-by-factor design.

Here, 82.37% of the total variance in the latent construct was explained using a five-factor solution, as determined by the EFA's principal findings. The rotated component matrix revealed that the standard factor loadings for all items on their respective latent factors were more than  $|\lambda| \geq .45$  (Hair et al., 1998). Hence, the model is very suited. The first subscale (Social-Awareness) was comprised of six items and explained 18.85% of the overall variation in social intelligence. Examples are, "I sometimes feel unreasonably upset with people" and "I understand my responsibilities as a teacher." Social Adaptability, the second component, was comprised of six more items and accounted for 16.04% of the total variation in the construct. This component contained statements such as "I cannot adapt to unanticipated events" and "I motivate pupils to study diligently."

Seven items comprised the third subscale (Social Cooperation), which accounted for 16.02% of the variation. Among the example statements are "I do not like social events" and "I always welcome visitors to my house." The Social Expressivity subscale had five items and accounted for 14.93% of the variation. Among the example statements are "I dislike social gatherings" and "I find it burdensome to accept assignments from higher authority." The fifth subscale (Interpersonal Connection) had five items and explained 13.45% of the variation. Among the example items are "I never disclose my family issue with my coworkers" and "I often discuss with my coworkers various new teaching approaches." In conclusion, the Cronbach's values for Social-Awareness, Social adaptation, social collaboration, social expressivity, and Interpersonal Connection were 0.85, 0.88, 0.90,

0.83, and 0.87, 0.89 for the whole scale, showing that the assessment scale was highly reliable. The rotated Component Matrix of the final 29 items (see Table 3.31) is given below:

**Table 3.31**

*Rotated component matrix: standardized factor loadings of 29 items in five dimensions of the social intelligence scale*

Sl. No	Scale Items	Components				
		Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
<b>(A) Social-Awareness</b>						
1.	I understand when students become inattentive in Class.			0.76		
2.	I know my duties as a teacher.			0.69		
3.	It is difficult to understand people by their gestures.*			0.77		
4.	Sometimes I become angry with others unreasonably.*			0.79		
5.	I do not like others' suggestions on my activity.*			0.80		
6.	Sometimes I make decisions without anticipating their impact.*			0.64		
<b>(B) Social Adaptability</b>						
7.	I cannot adjust myself to unpredictable situations.*		0.81			
8.	I hesitate to interact with unknown people.*		0.77			
9.	I do not discuss with students beyond any academic issues.*		0.69			
10.	I motivate each student to speak in my class.		0.78			
11.	I inspire students to work hard.		0.76			

---

12. I respect others' opinions. 0.76

**(C) Social Cooperation**

13. I adapt my communications according to others' need. 0.78
14. I do not like to be in social gatherings.\* 0.78
15. I help my colleagues to organize co-curricular activities in school. 0.74
16. I never go beyond social norms. 0.79
17. I always welcome people who come to my home. 0.81
18. I never misbehave with students even though I remain mentally disturbed.\* 0.75
19. I feel uncomfortable with some of my colleagues.\* 0.75

**(D) Social**

**Expressivity**

20. Students remain inattentive in my class.\* 0.66
21. I like to provide financial support to the needy students. 0.76
22. I interact with the parents' whenever needed. 0.71
- I feel a burden to take assigned work from higher authorities.\* 0.79
23. I always ensure my benefit before helping others.\* 0.76
- 24.

**(E) Interpersonal Relationship**

25. I always listen to the students. 0.81
-

26.	I do not bother about students' progress.*	0.77
27.	I never discuss my family problem with my colleagues.*	0.79
28.	I call every student by their name.	0.78
29.	I often discuss with my colleagues regarding Different innovative methods of teaching.	0.74

**Table 3.32**

*Factor inter-correlations of dimensions of the Social intelligence scale*

<b>Factor inter-correlation</b>					
	<b>SAw</b>	<b>SAd</b>	<b>SCo</b>	<b>SEx</b>	<b>IR</b>
<b>SAw</b>	1				
<b>Sad</b>	.66**	1			
<b>SCo</b>	.37**	.33**	1		
<b>Sex</b>	.49**	.54**	.27**	1	
<b>IR</b>	.39**	.40**	.20**	.67**	1

\*Negative scale items, \*\* $p < .01$

Pearson's product-moment correlational analysis was used to assess whether or not the latent variables of emotional intelligence were interrelated. As a result, it was discovered that positive bivariate correlation coefficients were statistically significant. Self-Cooperation was more highly linked with Social-Awareness ( $r = 0.37$ ,  $p < 0.01$ ) than Social-Adaptability ( $r = 0.33$ ,  $p < 0.01$ ). Social-adaptability correlates significantly more strongly with Social Expressivity ( $r = 0.54$ ,  $p < 0.01$ ) than with Social-Awareness ( $r = 0.49$ ,  $p < 0.01$ ) or Social-Cooperation ( $r = 0.27$ ,  $p < 0.01$ ). Social Expressivity and Interpersonal Connections were more closely related ( $r = 0.67$ ,  $p < 0.01$ ) than Social-adaptability ( $r = 0.40$ ,  $p < 0.01$ ), Social-Awareness ( $r = 0.39$ ,  $p < 0.01$ ), and Social-Cooperation ( $r = 0.20$ ,  $p < 0.01$ ). The conclusion of this research is that all dimensions are interrelated. Cohen's  $d$  coefficients at low levels (Cohen, 1988) imply that intra-



construct correlations were modest. This shows that the components of the idea of social intelligence are closely inter connected. Thus, emotional intelligence is a fundamental psychological term.

### 3.6.2.7 Final scale

The final social intelligence consisted with 29 items (14 positively worded and 15 negatively worded). The dimension-wise distribution of serial number-wise items has been depicted in Table 3.33:

**Table 3.33**

*Serial Number-wise distribution of items in each dimension and types of items*

SI No.	Dimensions	Nature of Items	No of Items	Items	Total
1	Social-Awareness	Positive	2	1,2,	6
		Negative	4	3,4,5,6	
2	Social Adaptability	Positive	3	10,11,12	6
		Negative	3	7,8,9	
3	Social Cooperation	Positive	4	13,15,16, 17	7
		Negative	3	14,18,19	
4	Social Expressivity	Positive	2	21,22	5
		Negative	3	20,23,24	
5	Interpersonal Relationship	Positive	3	25,28, 29	5
		Negative	2	26,27	
<b>Positive Items=14 + Negative Items=15</b>			<b>Total Items</b>		<b>29</b>

### 3.6.2.8 Confirmation of the measurement model

A first-order confirmatory factor analysis (Byrne, 2005) was undertaken using the final 28 scale items under the five emotional intelligence components (SAw or SAd or SCo or SEx or IR). Very acceptable model fit supported the 5-factor model: 2 (df) = 767.838; p0.001; 2/df = 2.092; CFI = 0.954; GFI = 0.92; TLI = 0.949; PCFI = 0.86; PNFI = 0.82; SRMR = 0.033; RMSEA = 0.41. Figure 3.10 depicts the Structural

Model of the Five Components of the Social Intelligence Scale (standardised coefficient). Table 3.35 also includes the Standardized Regression Weights.

**Table 3.34**

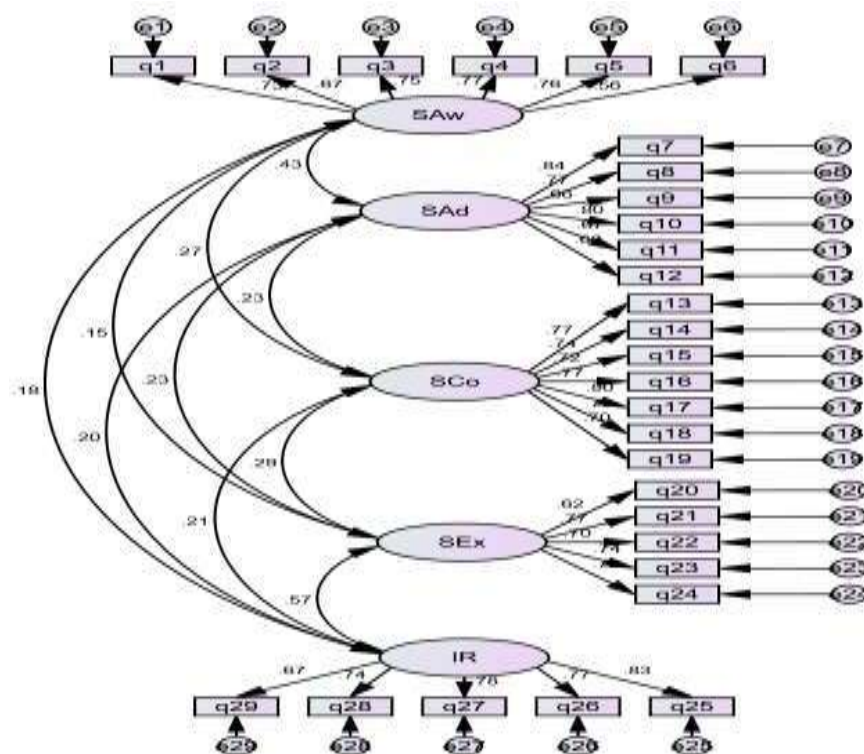
*Model fit indices of 5-factor model of social intelligence from confirmatory factor analyses*

Five factor model	$\chi^2$ (df)	P	df	$\chi^2$ / df	CFI	GF I	TL I	PC FI	PN FI	SR MR	RMS EA
SAw+SAAd+SCo+	767.8	<	36	2.0	0.9	0.9	0.9	0.8	0.8	0.03	0.041
SEx+IR	38	00	7	92	54	21	49	62	28	3	
		1									

<sup>a</sup>Note. A single fivefold social intelligence scale refers to a distinct factor. The ‘+’ sign was used to mean distinct factors.

**Figure 3.10**

*Structural Model of Five Factors of social Intelligence Scale (standardized coefficient)*



**Table 3.35***Standardized Regression Weights*

<b>Regression Path</b>	<b>Estimate</b>
q1<---SAw	0.732
q2<---SAw	0.671
q3<---SAw	0.746
q4<---SAw	0.770
q5<---SAw	0.765
q6<---SAw	0.558
q7<---SAd	0.837
q8<---SAd	0.768
q9<---SAd	0.662
q10<---SAd	0.802
q11<---SAd	0.669
q12<---SAd	0.664
q13<---SCo	0.766
q14<---SCo	0.745
q15<---SCo	0.719
q16<---SCo	0.771
q17<---SCo	0.797
q18<---SCo	0.701
q19<---SCo	0.704
q20<---SEx	0.622
q21<---SEx	0.767
q22<---SEx	0.698
q23<---SEx	0.743
q24<---SEx	0.720
q25<---IR	0.826
q26<---IR	0.769
q27<---IR	0.779
q28<---IR	0.742
q29<---IR	0.667

## **A. Validity**

The scale has face validity because it was assessed by specialists and changed in accordance with their recommendations. Item analysis was done for content validity, and only the items with statistically significant discriminative power were kept. First-order Confirmatory Factor Analysis was also used to test the scale's Factorial Validity. The outcomes are presented in Rotated Component Matrix (see Table 3.31) for the five component model of the emotional intelligence scale. On the basis of Table 3, the 6 items with item no. 3, 7, 12, 19, 26, 29 were placed under component 1: Social-Awareness,, the 6 items with item no. 1, 10, 14, 16, 27, 28 were placed under component 2: Social-adaptabilityand the 7 items with item no. 2, 5, 8, 11, 18, 21 23, were placed under component 3: Social-Cooperation the 5 items with item no. 4, 9, 20, 22 and 25 were placed under component 4: Social Expressivity the 5 items with item no. 6, 13, 15, 17 and 24 were placed under component 5: Interpersonal Relationship

### **Factorial validity**

#### **a) Convergent validity**

Using standardized factor loadings, which should be less than 0.55, the link between the observed variables and the corresponding distinct latent variable was examined (Hair et al. 2017, Comrey and Lee 1992; Harrington, 2008; Anderson and Gerbing, 1988). All of the standardized factor loadings in the five factor model were statistically significant ( $p < 0.001$ ). Although the Social-Awareness, Social-adaptability, Social-Cooperation, Social Expressivity, Interpersonal Relationship Composite reliability (CR) coefficients were 0.90, 0.92, 0.97, 0.90, and 0.96 respectively (see Table 3.36), they showed a satisfactory value over 0.70 (Fornell, 1982). However, the average variance extracted (AVE) for each dimension (Social-Awareness, Social-adaptability, Social-Cooperation, Social Expressivity, Interpersonal Relationship was 0.67, 0.77, 0.70, 0.74, 0.76 respectively) was greater than 0.50 (Bagozzi and Yi 1988; Fornell 1982) means it indicates greater common variance was got by each and every construct than the variance due to the measurement error.

**Table 3.36***Convergent validity of social intelligence scale*

<b>Factors</b>	<b>CR</b>	<b>AVE</b>	<b>AVE&gt;0.5</b>	<b>CR&gt;0.7</b>	<b>CR&gt;AVE</b>	<b>Convergent validity</b>
SAw	0.90	0.67	Satisfied	Satisfied	Satisfied	Established
SAd	0.92	0.77	Satisfied	Satisfied	Satisfied	Established
SCo	0.97	0.70	Satisfied	Satisfied	Satisfied	Established
SEx	0.9	0.74	Satisfied	Satisfied	Satisfied	Established
IR	0.96	0.76	Satisfied	Satisfied	Satisfied	Established

Note. SAw =Social-Awareness, SAd =Social-adaptability, SCo = Social-Cooperation, SEx =Social Expressivity, IR=Interpersonal Relationship, CR=Composite Reliability, AVE=Average Variance Extracted

According to these findings, each dimension meets the criteria for convergent validity (CR>0.70, AVE>0.5, CR>AVE; Hair et al., 2017). The Cronbach's values for Social-Awareness, Social-adaptability, Social-Cooperation, Social Expressivity, and Interpersonal Partnership were 0.85, 0.88, 0.90, 0.83, 0.87, and 0.89, respectively, which exceeded the statistically acceptable numbers (>.7; Hair et al., 2017). This demonstrated the instrument's dependability.

**b) Discriminant validity:**

Further, maximum shared variance (MSV) (for Social-Awareness = 0.48, Social-adaptability = 0.49, Social-Cooperation = 0.14, Social Expressivity = 0.46, Interpersonal Relationship = 0.47) and average shared variance (ASV) (for Social-Awareness = 0.24, Social-adaptability = 0.27, Social-Cooperation = 0.13, Social Expressivity = 0.29, Interpersonal Relationship = 0.14) for each latent construct were calculated from intra-construct (see Table: 3.31). For each latent component, MSV and ASV were shown to be quantitatively smaller than AVE. Hence, each component meets the criteria for discriminant validity (Fornell & Larcker, 1981; Hair, Black, Babin, Anderson, &Tatham, 2014). The convergence and discrimination validity of the social intelligence scale are shown in tables 3.36 and 3.37 below.

**Table 3.37***Discriminant validity of social intelligence scale*

<b>Factors</b>	<b>AVE</b>	<b>MSV</b>	<b>ASV</b>	<b>AVE&gt;MSV</b>	<b>AVE&gt;ASV</b>	<b>Discriminant validity</b>
<b>Saw</b>	0.66	0.48	0.24	Satisfied	Satisfied	Established
<b>Sad</b>	0.78	0.49	0.27	Satisfied	Satisfied	Established
<b>SCo</b>	0.71	0.14	0.13	Satisfied	Satisfied	Established
<b>Sex</b>	0.74	0.46	0.29	Satisfied	Satisfied	Established
<b>IR</b>	0.77	0.47	0.14	Satisfied	Satisfied	Established

Note. SAw =Social-Awareness, SAd =Social-Adaptability, SCo = Social-Cooperation, SEx =Social Expressivity, IR=Interpersonal Relationship, AVE=Average variance extracted, MSV=Maximum shared variance, ASV=Average shared variance

The construct (convergent and discriminant) validity and internal consistency reliability of the five-factor measuring model of social intelligence were therefore validated by the CFA results. The fifth element, which has been backed up by previous researchers, is supported by the current study, which also sustains the factorial structure of the social intelligence construct as put forth by prior researchers.

### **B. Reliability**

The idea that a high number indicates that a group of items is unidimensional is perhaps the most pervasive and popular fallacy concerning the Cronbach's alpha. However, assuming the unidimensionality of those things, Cronbach's alpha becomes a valid indicator of the reliability of a set of items (Graham, 2006). It is obvious that high does not support unidimensionality. As a result, until it has been proven that the items assess a single construct, should not be reported as a measure of the dependability of a set of observed scores. Additionally, estimates dependability less accurately than does McDonald's when critical tau-equivalence is broken (i.e., a group of items or a scale is congeneric) (Green & Yang, 2009; Trizano-Hermosilla& Alvarado, 2016). As a result, it is advised to report before computing. In this study, the values of McDonald's  $\omega$  for Social-Awareness= 0.82, Social-Adaptability=0.79, Social-Cooperation=0.77, Social Expressivity=0.81, Interpersonal Relationship=0.86 were respectively. Then, the internal consistency of the emotional intelligence was

calculated using Cronbach's Alpha for each sub-scale and for the overall scale based on the scores of 645 respondents.

The reliability coefficients are given in Table 3.38. The Cronbach's  $\alpha$  value for The Cronbach's  $\alpha$  value for Social-Awareness, Social-adaptability, Social-Cooperation, Social Expressivity, Interpersonal Relationship were 0.85, 0.88, 0.90, 0.83, 0.87 and 0.89 (see Table 3.38) for the overall scale was higher than the statistically acceptable figures ( $\alpha > .7$ ; Hair et al., 2017). This demonstrated the instrument's high level of dependability. Additionally, the item total correlation and the inter-item correlations for every item were calculated; the findings are shown in Tables 3.32 and 3.29, respectively. Additionally, the scale's Split-Half Reliability was determined using the odd-even approach and the scores of 645 teachers. The Spearman-Brown Prophecy method was used to calculate the students' scores on items with odd and even numbers, yielding the social intelligence Split-Half Reliability Coefficient of 0.89, which is significant at 0.01 levels.

**Table 3.38**

*Reliability coefficient of the overall scale and dimensions of social intelligence scale*

<b>Sl. No.</b>	<b>Dimensions</b>	<b>Number of items</b>	<b>Cronbach's Alpha</b>
1	<b>Social-Awareness</b>	6	0.85
2	<b>Social-Adaptability</b>	6	0.88
3	<b>Social-Cooperation</b>	7	0.90
4	<b>Social Expressivity</b>	5	0.83
5	<b>Interpersonal Relationship</b>	5	0.87
	<b>Overall Social intelligenceScale</b>	29	0.89

### C. Norms

On the basis of the statistical results (see Table 3.40) and scoring procedure (see Table 3.39) presented, z-Score Norms dimension-wise and for the overall scale have been developed and presented as: Dimension-wise Norms in Table 3.41, Table 3.42, Table 3.43, Table 3.44 and Table 3.45 whereas for the overall scale in Table 3.46 respectively. Lower value means low social intelligence where as higher value means high social intelligence of secondary level school teachers. Norms for interpretation the level of each dimension and overall social intelligence Scale have been presented in Table 3.47.

### D. Scoring procedures

**Table 3.39**

*Scoring system*

<b>Nature of item</b>	<b>Strongly agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly disagree</b>
<b>Positive</b>	5	4	3	2	1
<b>Negative</b>	1	2	3	4	5

The final scale with five key dimensions and 29 scale items were administered on a randomly selected 645 secondary level school teachers under West Bengal Board of Secondary Education (WBBSE). The schools were situated in the seven districts (Birbhum, Murshidabad, Purba Bardhaman, Nadia, Hooghly, Cooch Behar and North Dinajpur) of West Bengal. After scoring the 645 answer sheet, the statistical results obtained are as given in Table 3.40:



**Table 3.40***Statistical results*

<b>Sl. No.</b>	<b>Sub-scales</b>	<b>N</b>	<b>M</b>	<b>SD</b>
1	<b>Social-Awareness</b>	645	19.15	4.15
2	<b>Social-adaptability</b>	645	18.64	4.09
3	<b>Social-Cooperation</b>	645	23.17	4.87
4	<b>Social Expressivity</b>	645	16.51	3.16
5	<b>Interpersonal Relationship</b>	645	15.86	3.81
<b>Overall scale</b>			93.48	12.59

On the basis of the statistical results presented in Table 4, z-Score Norms dimension-wise and for the overall scale have been developed and presented as: Dimension-wise Norms in Table 3.41, Table 3.42, Table 3.43, Table 3.44, and Table 3.45 where as for the overall scale in Table 3.46, respectively. Norms for interpretation the level of each dimension and overall social intelligence Scale have been presented in Table 3.47.

**Table 3.41***Z-score norms for Social-Awarenesssub-scale*

<b>M= 19.15</b>		<b>SD= 4.15</b>		<b>N= 645</b>	
<b>Raw score</b>	<b>Z-score</b>	<b>Raw score</b>	<b>Z-score</b>	<b>Raw score</b>	<b>Z-score</b>
7	-2.93	15	-1.00	23	0.93
8	-2.69	16	-0.76	24	1.17

9	-2.45	17	-0.52	25	1.41
10	-2.20	18	-0.28	26	1.65
11	-1.96	19	-0.04	27	1.89
12	-1.72	20	0.20	28	2.13
13	-1.48	21	0.45	29	2.37
14	-1.24	22	0.69	30	2.61

**Table 3.42**

*Z-score norms for Social-adaptability sub-scale*

<b>M=18.64</b>		<b>SD= 4.09</b>		<b>N= 645</b>	
<b>Raw score</b>	<b>Z-score</b>	<b>Raw score</b>	<b>Z-score</b>	<b>Raw score</b>	<b>Z-score</b>
7	-2.85	15	-0.89	23	1.07
8	-2.60	16	-0.65	24	1.31
9	-2.36	17	-0.40	25	1.56
10	-2.11	18	-0.16	26	1.80
11	-1.87	19	0.09	27	2.04
12	-1.62	20	0.33	28	2.29
13	-1.38	21	0.58	29	2.53
14	-1.13	22	0.82		

**Table 3.43***Z-Score Norms for Social-Cooperation Sub-Scale*

<b>M=23.17</b>		<b>SD= 4.87</b>		<b>N= 645</b>	
<b>Raw score</b>	<b>Z-score</b>	<b>Raw score</b>	<b>Z-score</b>	<b>Raw score</b>	<b>Z-score</b>
9	-2.91	18	-1.06	27	0.79
10	-2.70	19	-0.86	28	0.99
11	-2.50	20	-0.65	29	1.20
12	-2.29	21	-0.45	30	1.40
13	-2.09	22	-0.24	31	1.61
14	-1.88	23	-0.03	32	1.81
15	-1.68	24	0.17	33	2.02
16	-1.47	25	0.38	34	2.22
17	-1.27	26	0.58		

**Table 3.44***Z-score norms for Social Expressivity sub-scale*

<b>M=16.51</b>		<b>SD= 3.16</b>		<b>N= 645</b>	
<b>Raw score</b>	<b>Z-score</b>	<b>Raw score</b>	<b>Z-score</b>	<b>Raw score</b>	<b>Z-score</b>
8	-2.69	14	-0.79	20	1.10
9	-2.38	15	-0.48	21	1.42
10	-2.06	16	-0.16	22	1.74
11	-1.74	17	0.16	23	2.05
12	-1.43	18	0.47	24	2.37
13	-1.11	19	0.79		

**Table 3.45***Z-score norms for Interpersonal relationship sub-scale*

<b>M=15.86</b>		<b>SD= 3.81</b>		<b>N= 645</b>	
<b>Raw score</b>	<b>Z-score</b>	<b>Raw score</b>	<b>Z-score</b>	<b>Raw score</b>	<b>Z-score</b>
6	-2.59	13	-0.75	20	1.09
7	-2.33	14	-0.49	21	1.35
8	-2.06	15	-0.23	22	1.61
9	-1.80	16	0.04	23	1.87
10	-1.54	17	0.30	24	2.14
11	-1.28	18	0.56		
12	-1.01	19	0.82		

**Table 3.46***Z-score norms for overall social intelligence scale*

<b>M= 93.48</b>		<b>SD= 12.59</b>		<b>N= 645</b>	
<b>Raw score</b>	<b>Z-score</b>	<b>Raw score</b>	<b>Z-score</b>	<b>Raw score</b>	<b>Z-score</b>
57	-2.90	80	-1.07	103	0.76
58	-2.82	81	-0.99	104	0.84
59	-2.74	82	-0.91	105	0.92
60	-2.66	83	-0.83	106	0.99
61	-2.58	84	-0.75	107	1.07
62	-2.50	85	-0.67	108	1.15
63	-2.42	86	-0.59	109	1.23

64	-2.34	87	-0.51	110	1.31
65	-2.26	88	-0.44	111	1.39
66	-2.18	89	-0.36	112	1.47
67	-2.10	90	-0.28	113	1.55
68	-2.02	91	-0.20	114	1.63
69	-1.94	92	-0.12	115	1.71
70	-1.86	93	-0.04	116	1.79
71	-1.79	94	0.04	117	1.87
72	-1.71	95	0.12	118	1.95
73	-1.63	96	0.20	119	2.03
74	-1.55	97	0.28	120	2.11
75	-1.47	98	0.36	121	2.19
76	-1.39	99	0.44	122	2.27
77	-1.31	100	0.52	123	2.34
78	-1.23	101	0.60		
79	-1.15	102	0.68		

**Table 3.47**

*Norms for interpretation of the levels of social intelligence: Dimension-wise and overall scale*

Sl. No.	Raw score range									z-score range	Levels of social Intelligence		
	Dimension-wise raw score range											Overall	
	SAw	SAd	SCo	SEx	IR	Scale							
1	28	&	27	&	33	&	23	&	24	119	&	+2.01	Very high
	above		above		above		above			above		&	above

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2	25	To	24	to	30	to	21	to	21	to	110	to	+1.26	High
	27		26		32		22		23		118		to +2.00	
3	22	To	21	to	26	to	19	to	18	to	100	to	+0.51	Moderately high
	24		23		29		20		20		109		to +1.25	
4	18	To	17	to	21	to	15	to	14	to	88 to 99		-0.50 to	Average
	21		21		25		18		17				+0.50	
5	14	To	14	to	18	to	13	to	12	to	78 to 87		-1.25 to	Moderately low
	17		16		20		14		13				-0.51	
6	11	To	11	to	12	to	11	to	9 to 11		67 to 77		-2.00 to	Low
	13		13		17		12						-1.26	
7	10	&	10	&	13	&	10	&	8	&	68	&	-2.01 &	Very low
	below		below		below		below		below		below		below	

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Note. SAw =Social-Awareness, SAd =Social-adaptability, SCo = Social-Cooperation, SEx =Social Expressivity, IR=Interpersonal Relationship

### 3.7 Procedures of data collection

In this study, the fields' data were collected from the secondary level school teachers who are teaching class IX-X from the 42 selected secondary government aided schools to test hypotheses 1 to 14. The following protocols were maintained during data collection. To get permissions for collecting data, the headmasters of the selected schools were contacted and acquainted with the purposes of the present study and were requested to provide their compliance and co-operation in the due course of action. Then, the secondary level school teachers of each school were informed about the study. All the secondary level school teachers who are teaching classes IX-X of randomly selected 42 schools were sample of this study and were requested to fill the research tools. They were asked to provide their responses about their emotional intelligence, social intelligence, teaching style and professional commitment. They were instructed to provide their responses to each item only after completing their

demographic information. All the sessions were executed in school settings under the supervision of the investigator. Further, to minimize social desirability bias, students were also instructed that their responses were neither going to be evaluated nor to be disclosed elsewhere. Additionally, the students were requested to reflect on their honest perceptions. However, teachers were not entertained with any kind of incentives for providing their responses.

The entire process of data collection was executed in district wise. Total seven districts were selected on random basis. Before giving the tools to the teachers, a planned guideline was followed. Firstly, the participants provided their consent after knowing the details of the study from the investigation. Then, the participants were clearly instructed to provide responses. Further, to elevate the rate of honest responses reducing social desirability bias, students were also intimated that their responses will not be evaluated as right or wrong. The participants were also informed that all the responses will be kept confidential. The tools were given only to the students who participated voluntarily. They were asked to complete their demographic information before going to the scale items. However, no incentives were provided for filling the scale. This formal investigation was executed in a classroom setting and the entire session was supervised by the investigators. Finally, a sample of 632 participants was obtained who completed both scales. Out of the sample, 372 participants (58.86%) were females and the rest 260 participants (41.14%) were males. Out of the total sample, participants 196 (31.01%) were novice, 209 (33.07%) were experienced and the rest 227 participants (35.92%) were expert teacher. In summary, the researcher collected data through using emotional intelligence scale, social intelligence scale, teaching style scale and professional commitment scale from secondary level school teachers.

### **3.8 Data analysis strategy**

In this study, SPSS (IBM Corp., Armonk, NY, United States), Version 26.0 for the entire data analysis and AMOS 23.0 was used to perform Confirmatory factor analysis of the measurement models of emotional intelligence and social intelligence. The statistical significance level was set at  $\alpha=0.05$  for all the statistical comparisons.  $H_01$  and  $H_02$  were analyzed using 2 ways ANOVA. However,  $H_03-6$  were tested using

mediation analysis, whereas, H07-14 were examined with the help of moderation analysis. The mediation and moderation hypotheses were tested PROCESS macro for SPSS (developed by Prof. Andrew F. Hayes, 2013).