



INTRAPERSONAL INTELLIGENCE AND DECISION-MAKING ABILITY OF HIGHER SECONDARY SCHOOL STUDENTS

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The study aims to explore the level and relationship between intrapersonal intelligence and the decision-making ability of higher secondary school students. The study employed a survey-based quantitative method. The sample includes 500 higher secondary level school students in West Bengal, India. The investigators applied two self-made questionnaires, one for measuring intrapersonal intelligence and another for measuring decision-making ability. The results reveal that gender (3.22, $p < 0.01$) and stream (4.05, $p < 0.001$) have significant influences on the intrapersonal intelligence of the higher secondary school students. Decision-making Ability has a statistically significant and positive association with intrapersonal intelligence (0.42, $p < 0.001$). Results show that all the four dimensions of intrapersonal intelligence, i.e., self-awareness (2.871, $p < 0.01$), self-retrospection (2.540, $p < 0.01$), self-regard (5.265, $p < 0.001$), and self-adaptation (4.983, $p < 0.001$) significantly increase the decision-making ability of the higher secondary school students.

KEYWORDS: Intrapersonal Intelligence, Decision Making Ability, Higher Secondary School Students

INTRODUCTION

Man is the greatest creation of this universe. Man makes himself unique as compared to other animals by using his talent and intelligence. Since the beginning of the human civilization, man is able to solve his problems by applying his intelligence. Man takes various decisions and solves many problems of his life by applying his intelligence. The amount of intelligence may vary from man to man.

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Gardner has classified human intelligence into eight categories based on their special qualities in different aspects or areas of human endeavour. These are: (i) Linguistic/Verbal Intelligence, (ii) Spatial/Visual Intelligence, (iii) Bodily Kinaesthetic Intelligence, (iv) Musical Intelligence, (v) Mathematical/Logical Intelligence, (vi) Interpersonal Intelligence, (vii) Intrapersonal Intelligence and (viii) Naturalistic Intelligence [Gardner \(2011\)](#). Gardner in his theory of multiple intelligence very clearly explained that each and every category of intelligence helps us to do our specific functions. As for example, one can be a mathematician with his tremendous level of mathematical intelligence. On the other hand, one makes himself a musician because of his high level of musical intelligence [Gardner \(2011\)](#).

One of the most important but sometimes neglected categories of intelligence of Gardner's theory of multiple intelligence is intrapersonal intelligence. But this type of intelligence is very much needed for everyone. Because intrapersonal intelligence helps an individual to make his personal judgments about his own thoughts, emotions, strengths and weaknesses, to build appropriate mental models of themselves for making decisions about their own lives ([González-Treviño, Núñez-Rocha, Valencia-Hernández, & Arrona-Palacios, 2020](#); [Mowat, 2011](#); [Perez & Ruz, 2014](#)). Intrapersonal Intelligence comprises many unique aspects such as (i) awareness of self-feelings, (ii) awareness of self-strengths and weaknesses, (iii) self-understanding, (iv) self-confidence, (v) self-aspiration, (vi) ability of doing self-discipline, (vii) self-temperament, (viii) self-motivation as well as (ix) self-attention ([Gardner, 2011](#)).

Intrapersonal intelligence is the ability to understand oneself, judging one's strengths and weaknesses, recognizing and controlling emotions, and the ability to solve conflicts between many things for getting psychological balance ([Perez & Ruz, 2014](#)). Intrapersonal intelligence is the intelligence which is strongly associated with awareness and knowledge of oneself ([Sholikhati, Mardiyana, & Saputro, 2017](#)). On the other hand, [W. W. Tien and Chien \(2001\)](#), [Mowat \(2011\)](#), and [González-Treviño et al. \(2020\)](#) stated that intrapersonal intelligence is ability to self-aware, self-examine, self-regard and self-adapt. In other words, it is said that intrapersonal intelligence is one kind of capacity for self-reflection which helps us to constitute our self-knowledge by judging our strengths and weaknesses, feelings, emotions and thought processes. Intrapersonal intelligence helps individuals to differentiate their emotions in order to build mental models of themselves while making decisions regarding their lives ([Boo & Kim, 2020](#); [Chuang, Lee, & Kwok, 2020](#); [DiFabio & Kenny, 2010](#); [Storme, Celik, & Myszkowski, 2017](#); [Vertsberger & Gati, 2015](#)).

Gardner in his famous book 'Frames of Mind' described two intelligences

as personal intelligence (Gardner, 2011). First one is interpersonal intelligence which is also called social intelligence. Second one is intrapersonal intelligence which comprises abilities like self-awareness and emotional expressiveness. He explained that children with high levels of intrapersonal intelligence know their emotions, strengths, and weaknesses very well, can easily interpret contradictory and complex emotions, and can exhibit their talents in many areas like creative writing and visual arts. These two types of intelligences are sometimes also called emotional intelligence (Goleman, 1995, 2000). On the other hand, W. Tien and Chien (2000) stated that intrapersonal, interpersonal, and interactive abilities are the basic elements of personal intelligence. Personal intelligence concerns with understanding about our own personality. It is concerned with some mental aspects and functions i.e., our motive, emotions, thoughts, knowledge, plan of action, self-awareness and self-control which are also related to our intrapersonal intelligence (J. Mayer, Caruso, & Panter, 2019; J. D. Mayer, 2009).

It is said that for success in life it is very important for every person to take a right decision in right time. We must take decisions at every stage in our life. Our students are not exception in this regard. They have also to take many decisions regarding their academic life as well as their future career. But it is very difficult and problematic for our younger generation to take a right decision in a right time regarding their academic life and career also. For doing this task effectively, students must have adequate level of self-understanding, awareness about their strengths and weaknesses, power of controlling their emotions, good mission and vision, power of rational thinking, career Decision-Making self-efficacy, etc. In this regard, DiFabio, Palazzeschi, Asulin-Peretz, and Gati (2012) pointed out that career decision-making self-efficacy is a significant factor which affects our career decision-making process extensively. The career decision-making self-efficacy (CDMSE) helps to overcome the problem of career decision-making difficulties (CDD) as well as career indecision (Boo & Kim, 2020; Chuang et al., 2020; Storme et al., 2017; Vertsberger & Gati, 2015). In the same line, many studies reported a negative correlation between self-efficacy and indecision in career decision-making (Bullock-Yowell, Mcconnell, & Schedin, 2014; Gadassi, Gati, & Dayan, 2012; Gadassi, Gati, & Wagman-Rolnick, 2013; Gati et al., 2010; Gati, Ryzhik, & Vertsberger, 2013; Xu & Tracey, 2015). Many scholars observed and explained that career confusion and career indecision is one of the most significant factors behind the student's decision to withdraw themselves from a college education (Hull-Blanks et al., 2005; Noel, Levitz, & Saluri, 1986; Nutt, 2003).

Decision-Making is a process which is taken because of interaction between emotion and reason. It is observed through many research studies that emotions control our decision-making process. Negative emotions like stress, anx-

iety, depression etc. adversely affect our decision-making process in operational context (Driskell & Salas, 2016). Acht (2016) in his article reported that the few negative emotions like fear, anger, disgust and sadness had a very significant influence on the domains of judgments and choices which lead our decision-making process. Koshkaki and Solhi (2016) also reported that negative emotions significantly influence the decision-making behaviour. Sometimes the negative moods and emotions interferes our ability to process information. It is said that decisions taken by us being influenced by negative moods and emotions are mostly controlled by our mind, not by our heart. As a result, sometimes decisions may not be right as well as good for us (Bucurean, 2018). Therefore, it can be said that emotions can have a significant impact on Decision-Making process and solving a problem (Mulder, 2017). According to Goleman one of the most important components of emotional intelligence is intrapersonal understanding which encompasses many factors like emotional awareness, assertiveness, self-image, purposefulness, and independence. Independence means the ability to take decisions independently (Goleman, 1995).

Therefore, it is assumed that the strength and development of intrapersonal intelligence can be a vital factor in the selection of better career and future advancement. Because intrapersonal intelligence helps us to plan our future career clearly and decide accordingly. Gardner, in his theory of multiple intelligence stated that intrapersonal understanding is very essential element which helps an individual to judge his own strengths and weaknesses and take a decision effectively. Through the research studies it is found that the persons who have low self-understanding they are very confused about their career and suffering from indecision related problem. Many research findings showed that self-esteem, self-image and self-confidence of an individual can play a vital role in making a decision. All these aspects of an individual are closely related to his intrapersonal intelligence. In this regard, Gardner (2011) stated that having an accurate model of oneself is very much important for making a decision effectively. This is also an essential element of intrapersonal intelligence.

REVIEW OF RELATED LITERATURE

W. W. Tien (2001) conducted a study on 620 students regarding Conception and Appraisal of Personal Intelligence and explored that there was a statistically significant difference between boys and girl students with respect to their intrapersonal intelligence. The study showed that girls had comparatively more intrapersonal intelligence as compared to boys. Brown, George-Curran, and Smith (2003) through their study explored that empathy, handling relationships, self-control, and utilization of feelings - all these factors of emotional intelligence were positively associated with career Decision-Making

self-efficacy. The study also reported that the two factors i.e., Self-Control and Utilization of Feelings were inversely associated with vocational exploration and commitment.

Sevdalis, Petrides, and Harvey (2007) through their study also reported that trait Emotional Intelligence was positively associated with affective over prediction. Chauhan and Chauhan (2007) through their study revealed that a high level of emotional intelligence can have a positive contribution towards effective decision making. It was found that Decision-Making efficacy was positively correlated with emotional intelligence. Hess and Bacigalupo (2011) through their study explored that organizations as well as individuals may be benefitted from the development and utilization of behaviours ascribed to emotional intelligence. They reported that the practical application of the skills of emotional intelligence can enhance individual as well as group decisions and its outcomes.

DiFabio and Kenny (2010) observed through their study on Italian adolescents that the intervention related to development of emotional intelligence played a very significant role in fostering career Decision-Making process. In the same line, few research studies also explored that Decision-Making process is significantly associated with emotional intelligence (Brown et al., 2003; DiFabio & Blustein, 2009; DiFabio & Palazzeschi, 2009; Emmerling & Cherniss, 2003). They reported that perceived indecisiveness and difficulties in making career decision is decreased by the emotional intelligence development related intervention. Puffer (2010) in his study on 561 college students reported that emotional intelligence is closely associated with career Decision-Making process. This study revealed that emotional intelligence can play a role as a salient predictor of vocational identity, vocational personality, and career indecision.

Through conducting a qualitative study of over 69 secondary school pupils, Mowat (2011) reported that intrapersonal intelligence plays a significant role in minimizing the social, emotional and behavioural difficulties that may be useful in Decision-Making process. Jiang (2014) in his one study showed that self-emotional appraisal (SEA), Others Emotional appraisal (OEA), Use of Emotion (UOE) and Regulation of Emotion (ROE) - all these four factors of emotional intelligence were positively associated with Career Decision-Making Self-Efficacy (CDMSE). Here SEA refers to individuals' ability to understand their own deep emotions. ROE denotes individual's ability which helps to regulate their own emotions and recover from psychological distress easily. And UOE is related to individuals' ability which helps to utilize their emotions to direct their personal performance and constructive activities. All these things are closely related to Intrapersonal Intelligence of a person. It was also explored that UOE can be the strongest factor of emotional intelligence in case of CDMSE because this factor helps students to

understand of how to use their emotions to achieve goals and make a career decision effectively.

Jiang (2016) in another study also showed that emotional intelligence was positively associated with Career Decision-Making Self-Efficacy (CDMSE). This study suggested that increased Emotional Intelligence among university students can enhance their career decision-making confidence. Sumathy, Madhavi, and Felix (2015) conducted a study over 150 executive persons regarding their emotional intelligence and Decision-Making and they reported that emotional intelligence had a great influence in decision making. Especially, the empathy dimension of emotional intelligence had greatly influenced the decision-making process. On the other hand, Santos, Wang, and Lewis (2018) conducted a study on 472 university students of United Kingdom and showed in their study that emotional intelligence and career Decision-Making difficulties (CDD) were negatively interrelated with each other. It was also found in their study that career decision self-efficacy (CDSE) was positively related with emotional intelligence. Through this study, it was reported that emotional intelligence positively affects the students' career decision self-efficacy which can play as a potential mediator in the relationship between career decision-making difficulties (CDD) and emotional intelligence.

Kirdok and Korkmaz (2018) conducted a study on 432 high school students to explore the relationships among personality traits, emotional intelligence and career decision difficulties. The study explored that emotional instability was found to be a positive predictor of career decision difficulty. But on the other hand, self-awareness which is an essential component of emotional intelligence was negative predictors of career difficulty. It means that emotional intelligence can play a positive role in decision making. González-Treviño et al. (2020) conducted a study on 161 Mexican elementary school children (Boys-90 and Girls-71) and reported that there was a significant gender difference in respect to Intrapersonal Intelligence. They observed that boys reported higher scores in intrapersonal intelligence than that of the girls, which means that boys were more aware of their own behaviours and the consequences of their actions.

Although there are many studies found related to intelligence and decision making, but most of them have been conducted in relation to either emotional intelligence or personal intelligence or social intelligence. None of the studies found that has been conducted on Decision-Making ability in relation to intrapersonal intelligence particularly.

On the other hand, one of the most important and crucial stages of our academic life is the secondary stage of education. Here in this stage, students are facing lot of challenges about their academic as well as future career. One of the most vital challenges of the students at this stage is career confusion or

career indecision (Inchara, Gayathri, & Priya, 2019; Karacan-Ozdemir, 2019; Kirdok & Korkmaz, 2018; Oztemel, 2013; Sharma, 2019). Students start to prepare themselves for their future career at this stage. In a single word, it can be said that planning for future career of a student is started from this stage. But sometimes it is seen that most of the students are facing a common problem i.e., career indecision. Due to lack of experience and limitations, they can't be able to take a decision that is right and good for their future life (DiFabio & Kenny, 2010; Kirdok & Korkmaz, 2018; Leung, Hou, Gati, & Li, 2011). In this regard, it is very much necessary to understand oneself, one's weaknesses, strengths, limitations, emotions, etc. If one can understand about his/her weaknesses and strengths, then it is easy to make a decision for him.

Keeping in mind all these things, the investigators felt that this is a very important area where more and more research studies are needed to be carried out to explore in-depth results regarding intrapersonal intelligence and decision-making ability. And that's why the investigators have chosen this study.

OBJECTIVES OF THE STUDY

The present study was conducted to:

- (i) assess the level of intrapersonal intelligence and decision-making ability among the higher secondary school students in West Bengal, India.
- (ii) find out the differences of students' intrapersonal intelligence with respect to gender, stream and school location.
- (iii) examine the relationship between intrapersonal intelligence and decision-making ability among the higher secondary school students.
- (iv) develop multiple regression equation to predict Decision-Making ability of higher secondary school students with the help of intrapersonal intelligence.

HYPOTHESES OF THE STUDY

The study was conducted with following hypothetical considerations:

H0₁: There would not have high level of intrapersonal intelligence and decision-making ability among the higher secondary school students in West Bengal.

H0₂: There is no significant difference among the students with respect to their intrapersonal Intelligence based on gender, stream, and school location.

H0₃: There is no significant relationship between intrapersonal intelligence and decision-making ability among the higher secondary school students.

H0₄: It would not be possible to develop the regression equation to predict Decision-Making ability of higher secondary school students with the help of intrapersonal intelligence.

PARTICIPANTS AND METHODS

The present study was a survey based Quantitative study. The study was conducted on 500 students from the 16 (sixteen) selected higher secondary schools under the West Bengal council of higher secondary education situated in the districts of Hooghly and Purulia. The sample of the study has been selected using on stratified random sampling technique.

RESEARCH TOOLS USED

For conducting the present study, the investigators applied two self-made questionnaires, one for measuring intrapersonal intelligence and another for measuring Decision-Making ability of the higher secondary school students.

Intrapersonal Intelligence Scale (IIS)

As there is no such scale found related to measuring intrapersonal intelligence of school students in Indian context particularly in Bengali Version, the investigators have tried to develop a scale by themselves to explore more prominent results. Before the construction of Intrapersonal Intelligence Scale, the present investigators surveyed few instruments related to this filed. The Personal Intelligence Inventory developed by [W. Tien and Chien \(2000\)](#) was one of the very relevant instruments for the present study. In the inventory three important facets namely interpersonal, intra-personal and interactive abilities were considered as measuring construct of personal intelligence. And in this inventory, intrapersonal abilities were measured by four important dimensions, i.e., self-awareness, self-retrospection, self-regard and self-adaptation ([W. Tien & Chien, 2000](#)). By considering all these four dimensions, the present investigators developed a preliminary form of Intrapersonal Intelligence Scale based on Likert's five-point scale i.e., Strongly Agree =5, Agree=4, Neutral=3, Disagree=2, Strongly Disagree=1 (for Positive Items). Reverse scoring was assigned for negative items. Before finalizing the scale and its items, the investigators conducted a pilot study on a sample of 200 higher secondary level school students (who were not considered for final survey) for try out and item analysis. All the items were found to be significant at 0.01 level.

The final scale was developed with the help of 36 Items which were distributed into four dimensions: i. Self-Awareness (6 Items), ii. Self-Retrospection (11 Items), iii. Self-Regard (10 Items), and iv. Self-Adaptation (9 Items). These four dimensions had been considered as measuring construct of intrapersonal intelligence of an individual (W. Tien & Chien, 2000). In this scale, 21 Items were positive, and 15 Items were negative.

Self-Awareness (SA) is the ability or power or aptitude which helps an individual to become aware about his/her own feelings, emotions, strengths and weaknesses, discipline etc. Self-Retrospection (SRT) is the ability or power or aptitude by which an individual can examine/judge his/her own strengths and weaknesses, power of controlling his/her feelings and emotions. It helps to judge positive and negative aspects, success and failure before going to do a task. It is a capacity of self-reflection. Self-Regard (SR) is the ability which helps an individual to understand himself as what he/she is. It is one kind of self-image. Self-Adaptation (SAD) is the ability by which an individual can adjust or adapt with the environment or situation whatever it is. It helps to cope up with the any situation by controlling one's feelings and emotions. It is a technique of self-management or self-adjustment (W. Tien & Chien, 2000).

For determining the internal consistency of the test items, the Cronbach Alpha was estimated. The estimated value of Cronbach's Alpha (α) for Intrapersonal Intelligence Scale was 0.84 which indicates good internal consistency of the tool, and it is considerable as well as acceptable in case of any intelligence test as stated by George and Mallery (2010); Lance, Butts, and Michels (2006); Nunnally (1978); Nunnally and Bernstein (1994); Singh (2009); Streiner, Norman, and Cairney (2015). And in case of measuring validity of the tool, expert judgment method was applied in the present study (Singh, 2009).

Decision-Making Ability Questionnaire (DMAQ)

The investigators developed another tool for measuring Decision-Making Ability. Before developing the Decision-Making Ability Scale, the investigators had gone through various instruments related to this field. In this regard, the investigators very carefully read the "Career Decision Self-Efficacy Scale-Short Form (CDSES-SF)" for college students developed by Betz, Klein, and Taylor (1996), "Decision-Making Questionnaire (DMQ)" developed by Lizarraga, Acedo, Baquedano, Oliver, and Closas (2009), "Decision-Making Competence (DMC)" tool for older adults developed by Finucane and Gullion (2010), "Managerial Decision-Making Self-Efficacy Questionnaire (MDM-SEQ)" developed by Myburgh, Watson, and Foxcroft (2015), and "Melbourne Decision-Making Questionnaire (MDMQ)" developed by Cotrena, Branco, and Fonseca (2017).

After going through all these tools, it was felt that there is a need to develop a decision-making ability questionnaire for secondary level school students in Bengali version as all the above mentioned tools were in English and none of them was for secondary school students. With the help of these tools, the present investigators constructed a preliminary form of Decision-Making Ability Questionnaire (DMAQ). This preliminary form of the questionnaire was administered on 200 higher secondary school students (who were not considered for final administration) for item analysis through a pilot study. After the pilot study, all the items were found to be significant at 0.01 level. This scale was constructed based on Likert's Five Point Scale i.e., Strongly Agree=5, Agree=4, Neutral=3, Disagree=2 and Strongly Disagree=1 (for Positive Items). In case of negative items, reverse scoring was calculated. The Decision-Making Ability Questionnaire (DMAQ) was constructed with the help of 25 Items, out of which 9 Items were positive and 16 items were negative. The value of Cronbach's Alpha (α) for Decision-Making Ability Questionnaire was 0.86 which can be considered acceptable for any research tool as suggested by [George and Mallery \(2010\)](#); [Lance et al. \(2006\)](#); [Nunnally \(1978\)](#); [Nunnally and Bernstein \(1994\)](#); [Singh \(2009\)](#); [Streiner et al. \(2015\)](#). The validity of Decision-Making Ability Questionnaire (DMAQ) was considered through expert judgment method in the present study [Singh \(2009\)](#).

In the present study intrapersonal intelligence, gender, location and stream have been treated as independent variable and on the other side Decision-Making ability has been treated as dependent variable.

DATA COLLECTION PROCEDURE

Before starting the data collection, the sixteen (16) schools were selected randomly under the West Bengal Council of Higher Secondary Education in the district of Hooghly and Purulia. After that the authorities and the concerned classes (XI & XII) of each school were informed well in advance by the researchers for the purpose of data collection. The students were given clear instructions about the filling up of questionnaires before and during the process of data collection. Finally, 520 filled up questionnaires were collected through stratified random sampling method. But due to some problems of incompleteness, 20 questionnaires were rejected. After collecting and sorting the questionnaires, the researchers scored all the items of the questionnaires with the help of direct and reverse scoring method. The direct scoring method (5-4-3-2-1) was used in case of positive items and reverse scoring method (1-2-3-4-5) was used in case of negative items.

RESULTS AND INTERPRETATION

The present study deals with intrapersonal intelligence and decision-making ability of higher secondary school students. So, what is the level of intrapersonal intelligence and decision-making ability? And how does intrapersonal intelligence influence Decision-Making ability of higher secondary school students? – questions to these answers are discussed hereunder.

Table 1
Demographic Profile of the Students (N=500).

Demographics	Number of Sample (%)
Age	
Age (16-18 Years)	500 (100%)
Gender	
Boys	263 (52.6%)
Girls	237 (47.4%)
Stream	
Arts	250 (50%)
Science	250 (50%)
School Location	
Rural	260 (52%)
Urban	240 (48%)

Table 1 shows the demographic profile of the sample. The age range of the students was 16-18 years. The study was conducted on 263 (52.6%) boys and 237 (47.4%) girls. The study also included stream and school location as demographic variables. There were 250 (50%) arts and 250 (50%) science stream students. On the other hand, 260 (52%) rural and 240 (48%) urban students were considered for conducting the study.

Level of Intrapersonal Intelligence of Higher Secondary School Students

Table 2

Number, Mean and SD of Higher secondary school students on Intrapersonal Intelligence.

Group	Number	Mean	SD
Students	500	125.47	15.04

$$M \pm \sigma$$

$$M + \sigma = 125.47 + 15.04 = 140.51$$

$$M - \sigma = 125.47 - 15.04 = 110.43$$

To measure the level of intrapersonal intelligence of the students, the researchers applied the basic principles of Normal distribution [Garrett \(2007\)](#). On the basis of that the researchers applied the Formula $M \pm \sigma$ (Table 2) and the scores obtained by the students on Intrapersonal Intelligence scale have been divided into three categories to explain the level of Intrapersonal Intelligence of the students. Here a score of above 140.51 denotes 'High', a score between 110.43 to 140.51 denotes 'Moderate' and a score of below 110.43 denotes 'Low'.

Table 3

Level of Intrapersonal Intelligence of Higher Secondary School Students on the basis of Cut-off Point.

Scores	Frequency	Percentage	Level of Intrapersonal Intelligence
Above-140.51	79	15.8%	High
Between-110.43 to 140.51	328	65.6%	Moderate
Below-110.43	93	18.6%	Low
Total	500	100%	

From Table 3, it can be seen that out of a total 500 Students, 15.8% Students have scored above 140.51, 65.6% Students have scored between 110.43 to 140.51 and 18.6% Students have scored below 110.43 on intrapersonal intelligence measuring scale. Therefore, it can be said that the maximum percentage (65.6%) of the higher secondary school students have scored between 110.43 to

140.51, which indicates that the level of intrapersonal intelligence of the school going adolescents is moderate in the districts of Hooghly and Purulia, West Bengal.

Level of Decision-Making Ability of Higher Secondary School Students

Table 4

Number, Mean and SD of Higher Secondary School Students on Decision-Making Ability.

Group	Number	Mean	SD
Students	500	78.51	9.07

$$M \pm \sigma$$

$$M + \sigma = 78.51 + 9.07 = 87.58$$

$$M - \sigma = 78.51 - 9.07 = 69.44$$

Like intra-personal intelligence, the researchers also applied the basic principles of normal distribution in order to measure the level of decision-making ability of the students [Garrett \(2007\)](#). On the basis of this assumption the researchers applied the Formula $M \pm \sigma$ (Table 4) and the scores obtained by the students on decision-making ability questionnaire have been divided into three categories to explain the level of Decision-Making ability of the students. Here a score of above 87.58 denotes 'High', a score between 69.44 to 87.58 denotes 'Moderate' and a score of below 69.44 denotes 'Low'.

Table 5

Level of Decision-Making Ability of Higher Secondary School Students on the basis of Cut-off Point

Scores	Frequency	Percentage	Level of Decision-Making Ability
Above-87.58	79	15.8%	High
Between-69.44 to 87.58	331	66.2%	Moderate
Below-69.44	90	18%	Low
Total	500	100%	

From Table 5, it can be seen that out of a total 500 students, 15.8% students have scored above 87.58, 66.2% students have scored between 69.44 to 87.58 and 18% students have scored below 69.44 on Decision-Making Ability Scale. Therefore, it can be said that the maximum percentage (66.2%) of the higher secondary school students have scored between 69.44 to 87.58. This indicates that the level of Decision-Making Ability of the higher secondary school students is Moderate in the districts of Hooghly and Purulia, West Bengal.

Table 6
Results of t-Test Between Different Groups of Higher Secondary School Students on Intrapersonal Intelligence.

Variables	Groups	N	Mean	SD	df	Mean Diff.	S _{ED}	t	
Intrapersonal Intelligence									
Gender	Boys	263	123.44	15.20		4.30	1.34	3.22**	
	Girls	237	127.73	14.58	498				
Location of School	Urban Students	240	125.20	15.28	498	0.53	1.35	0.39	
	Rural Students	260	125.73	14.87					
	Urban Boys	135	123.59	14.17	238	3.67	1.98	1.86	
	Urban Girls	105	127.27	16.43					
	Rural Boys	128	123.27	16.28	258	4.83	1.82	2.65**	
	Rural Girls	132	128.11	12.98					
	Urban Boys	135	123.59	14.17	261	0.32	1.88	0.17	
	Rural Boys	128	123.27	16.28					
	Urban Girls	105	127.27	16.43	235	0.84	1.91	0.44	
	Rural Girls	132	128.11	12.98					
	Stream	Science	250	128.16	14.87	498	5.36	1.33	4.05**
		Arts	250	122.79	14.78				
Science Boys		122	126.35	15.50	248	3.52	1.87	1.88	
Science Girls		128	129.88	14.08					

Stream

Continued on next page

Table 6 continued

Arts Boys	141	120.91	14.53					
Arts Girls	109	125.22	14.82	248	4.31	1.87	2.30*	
Science Boys	122	126.35	15.53					
Arts Boys	141	120.91	14.53	261	5.44	1.85	2.93**	
Science Girls	128	129.88	14.08					
Arts Girls	109	125.22	14.82	235	4.65	1.88	2.48*	

*Significant at 0.05, ** Significant at 0.01

Gender and Intrapersonal Intelligence

From Table 6, we can see that the calculated 't'-value (3.22) is greater than the table value at both the levels of significance (0.05 and 0.01 level). Therefore, the result is significant, and it indicates that there was significant difference in students' intrapersonal intelligence based on gender. It can also be said that the girls have comparatively higher intrapersonal intelligence than the boys.

School Location and Intrapersonal Intelligence

Data in Table 6 shows that there is no statistically significant difference in students' intrapersonal intelligence based on school location as the calculated 't'-value (0.39) is less than the table value at 0.05 level of significance. However, a statistically significant difference was found between boys and girls of rural school with respect to their intrapersonal intelligence. Here, the calculated 't'-value (2.65) is greater than the table value at 0.05 level of significance. So, it can be inferred that girl students in the rural school have comparatively higher intrapersonal intelligence than the boys' students in the rural school.

Stream and Intrapersonal Intelligence

Results in Table 6, show that the calculated 't'-value (4.05) is greater than the table value at both the levels of significance. Therefore, it indicates that there is statistically significant difference between science and arts stream students with respect to their intrapersonal intelligence. It can also be said that the science stream students have comparatively high intrapersonal intelligence than the arts stream students. On the other hand, Boys and Girls Students in arts stream had significant differences with respect to their intrapersonal intelligence. In this case the calculated 't'-value (2.30) is greater than the table value at the 0.05 level of significance. It can also be said that Girl students in arts stream have comparatively high intrapersonal intelligence than the boys in the arts stream. Data also reveals that the 't'-value (2.93) is greater than the table value at both levels of significance in case of comparison between boys in science stream and boys in arts stream. The result indicated that the boys in science stream and boys in arts stream differed significantly with respect

to their intrapersonal intelligence. Lastly, the results show that the calculated 't'-value (2.48) is greater than the table value at the 0.05 level of significance in case of comparison between girls in the science stream and arts stream. The result indicates that girls in science stream have a comparatively higher intrapersonal intelligence than the girls in arts stream.

Table 7

Relationship between the Different Dimensions of Intrapersonal Intelligence and Decision-Making Ability among the Higher Secondary School Students.

Variables		r	Interpretation
Decision-Making Ability	Intrapersonal Intelligence	0.42**	Moderate (Average) Positive Correlation
	Self-Awareness	0.33**	Low Positive Correlation
	Self-Retrospection	0.27**	Low Positive Correlation
	Self-Regard	0.42**	Moderate (Average) Positive Correlation
	Self-Adaptation	0.36**	Low Positive Correlation

** Significant at 0.01

From Table 7, it can be seen that the calculated value of 'r' is 0.42 which is Significant at 0.01 level of Significance. The value shows moderate (average) positive correlation between intrapersonal intelligence and decision-making ability among the higher secondary school students. Hence, the Null Hypothesis is rejected, and it can be said that when one's intrapersonal intelligence will be high, the decision-making ability of that person will also be high.

To find out the relative contributions of different dimensions of Intrapersonal Intelligence to the dependent variable (Decision-Making Ability), multiple regression analysis has been successfully employed.

Table 8 shows the number of dependent and independent variables used for multiple regression analysis in the study. Each variable is presented here in this table with their abbreviated forms for the purpose of multiple regression analysis. The dependent variable 'Decision-Making Ability' was abbreviated with 'DMA'. On the other hand, the four dimensions of independent variable 'Intrapersonal Intelligence' were abbreviated by 'SA', 'SRT', 'SR', and 'SAD' for 'Self-Awareness', 'Self-Retrospection', 'Self-Regard', and 'Self-Adaptation' respectively.

Table 8

Shows the Dependent and Independent Variables used for Multiple Regression Analysis in the Present Study.

Variable No.	Description of the Variables	Symbol
1	Decision-Making Ability	DMA
2	Self-Awareness	SA
3	Self-Retrospection	SRT
4	Self-Regard	SR
5	Self-Adaptation	SAD

Table 9

Value of R Square Estimated Through Multiple Regression Analysis.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error
1	0.504 ^a	0.254	0.248	7.877

a. Dependent Variable: Decision-Making Ability (DMA)

b. Predictors: (Constant), SA, SRT, SR, SAD

Regression Equation:

$$DMA = 42.007 + 0.295 (SA) + 0.163 (SRT) + 0.389 (SR) + 0.338 (SAD)$$

From Table 9, it can be seen that the R value indicates that the multiple correlation between the Decision-Making Ability (Dependent Variable) and the different aspects or dimensions of independent variable (Intrapersonal Intelligence) is 0.504. The R-square figure indicates that approximately 25.4% of variance in decision-making ability can be explained by all the aspects or dimensions of independent variable (Intrapersonal Intelligence).

Out of the four dimensions of intrapersonal intelligence, the dimension of Self-Regard (SR) has a huge contribution to the dependent variable i.e., decision-making ability. The regression coefficient value (0.248) shows that when this sub variable was included as predictor variable, then Decision-Making ability would change or increases by 0.389 points for every unit of change in the dimension of Self-Regard (SR). The value of regression coefficient

Table 10

Coefficient Values and t-values between Dependent Variables (DMA) and Four Dimensions of Independent Variable (Intrapersonal Intelligence).

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	42.007	2.992		14.04**	.000
	SA	0.295	0.103	0.130	2.87**	.004
	SRT	0.163	0.064	0.107	2.54**	.011
	SR	0.389	0.074	0.248	5.26**	.000
	SAD	0.338	0.068	0.212	4.98**	.000

**Sig. at 0.01 level, *Sig. at 0.05 level
a. Dependent Variable: DMA

of Self-Regard (SR) was significant at 0.01 level (Table 10).

The second important dimension is Self-Adaptation (SAD) which has also a big contribution on the dependent variable. In case of this dimension, the regression coefficient value (0.212) shows that when this sub variable was included as predictor variable, then Decision-Making Ability would change or increases by 0.338 points for every unit of change in the dimension of Self Adaptation (SAD). The value of regression coefficient of Self Adaptation (SAD) was significant at 0.01 level (Table-10).

The third important dimension is Self-Awareness (SA) which has also a big contribution on the dependent variable. In case of this dimension, the regression coefficient value (0.130) shows that when this sub variable was included as a predictor variable, then Decision-Making ability would change or increases by 0.295 points for every unit of change in the dimension of Self-Awareness (SA). The value of regression coefficient of Self-Awareness (SA) was significant at 0.01 level (Table 10).

The fourth dimension of intrapersonal intelligence i.e., Self-Retrospection (SRT) has also a significant contribution on the dependent variable. In case of this dimension, the regression coefficient value (0.107) shows that when this sub variable was included as predictor variable, then Decision-Making ability would change or increases by only 0.163 points for every unit of change in the

dimension of Self-Retrospection (SRT). The value of regression coefficient of Self-Retrospection (SRT) was significant at 0.01 level (Table 10).

Therefore, from the above discussion a regression equation to predict the decision-making ability of higher secondary school students can be developed. The Regression Equation is:

$$\text{Decision-Making Ability (DMA)} = 42.007 + 0.389 (\text{SR}) + 0.338 (\text{SAD}) + 0.295 (\text{SA}) + 0.163 (\text{SRT})$$

From the above equation it is quite clear that the decision-making ability of higher secondary school students could be explained significantly with the help of four important dimensions or aspects of independent variable (intrapersonal intelligence), viz., Self-Regard (SR), Self-Adaptation (SAD), Self-Awareness and Self-Retrospection (SRT). Hence, the null hypothesis i.e., "It would not be possible to develop the regression equation to predict Decision-Making ability of higher secondary school students with the help of intrapersonal intelligence" stands rejected.

DISCUSSION AND CONCLUSION

The results of the study showed that the higher secondary school students possessed moderate level of intrapersonal intelligence. This finding was supported by [Carlin, Salazar, Cortes, and S \(2013\)](#). Significant difference between Boys and Girls Students with respect to their Intrapersonal Intelligence were also observed. Results revealed that the girl students had comparatively high intrapersonal intelligence than the boys. This finding of the study was in line of the studies conducted by [W. Tien and Chien \(2000\)](#) and [W. W. Tien \(2001\)](#) as they reported that girls were more intelligent than the boys regarding intrapersonal domain. But this finding contradicts with the study conducted by [González-Treviño et al. \(2020\)](#). They observed that boys reported higher scores in intrapersonal intelligence than that of the girls. It was found that the rural school girls students had comparatively high intrapersonal intelligence than the rural school boys students. It was also found that the science stream students had comparatively high intrapersonal intelligence than the arts stream students. The girl students in the arts stream had comparatively high intrapersonal intelligence than the boys in arts stream. Results also show that the boys in the science stream had comparatively high intrapersonal intelligence than boys in the arts stream. It was also significantly revealed that the girl students in science stream had comparatively high intrapersonal intelligence than the girls in arts stream. All these were unique findings of the study. The results revealed that decision-making ability was significantly and positively (0.42, $p < 0.001$) associated with intrapersonal intelligence as well as emotional intelligence. This finding of the study was supported by several

studies (Brown et al., 2003; Chauhan & Chauhan, 2007; DiFabio & Blustein, 2009; DiFabio & Kenny, 2010; DiFabio & Palazzeschi, 2009; Emmerling & Cherniss, 2003; Hess & Bacigalupo, 2011; Jiang, 2014; Kirdok & Korkmaz, 2018; Puffer, 2010; Santos et al., 2018). It was also found through the present study that all the four dimensions of intrapersonal intelligence, i.e., SA (2.871, $p < 0.01$), SRT (2.540, $p < 0.01$), SR (5.265, $p < 0.001$), and SAD (4.983, $p < 0.001$) had significant positive effects in increasing decision-making ability of higher secondary school students. These were unique findings of the present study in context of higher secondary school education and students too.

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