

**Dissertation**

**Adolescents' Cognitive-Emotional Functioning  
as Predicted by Family Atmosphere and School  
Environment**

A dissertation submitted to the Department of Psychology, University of  
Dhaka, Bangladesh, as a fulfillment of the requirements for the degree of  
Doctor of Philosophy (Ph.D.) in Psychology

**By**

Muhammad Akram Uzzaman  
Academic Session: 2012-2013  
Registration # 29/2012-2013  
Department of Psychology  
University of Dhaka  
Dhaka 1000  
Bangladesh

July, 2016

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Dhaka 1000  
Bangladesh

### **Supervisor**

Dr. A. K. M. Rezaul Karim  
Professor  
Department of Psychology  
University of Dhaka  
Dhaka 1000, Bangladesh

### **Co-supervisor**

Dr. Mahfuza Khanam  
Professor  
Department of Psychology  
University of Dhaka  
Dhaka 1000, Bangladesh

## **Approval**

This is to certify that this survey research was carried out by Muhammad Akram Uzzaman under the supervision and guidance of the undersigned at the Department of Psychology, University of Dhaka, Bangladesh. It is fully adequate in scope and quality as a dissertation for the degree of Doctor of Philosophy in Psychology.

A. K. M. Rezaul Karim, Ph. D. (Supervisor)

Professor

Department of Psychology

University of Dhaka

Dhaka 1000, Bangladesh

Dr. Mahfuza Khanam (Co-supervisor)

Professor

Department of Psychology

University of Dhaka

Dhaka 1000, Bangladesh

*Dedicated to my beloved family members*

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**Muhammad Akram Uzzaman**  
Ph.-D. Student  
Registration # 29/2012-2013  
Academic Session # 2012-2013  
Department of Psychology, University of Dhaka

Dated: Dhaka, Bangladesh  
July, 2016

## Abstract

This study aimed to examine the impact of family atmosphere and school environment on adolescents' cognitive-emotional functioning. Survey data from 1064 adolescent students were collected about their cognitive emotion regulation (adaptive and less adaptive), emotional intelligence, future aspiration, school motivation, school engagement, hopelessness, and hostility which were assumed to reflect their cognitive-emotional functioning. Preliminary analyses of the data in MANOVA (Multivariate Analysis of Variance) using gender, socio-economic status, and family type as the independent variables revealed that it was only gender that has significant overall effect on a linear combination of the eight dependent variables. The univariate results further showed that gender has a significant effect on adaptive cognitive emotion regulation and school motivation, but not on the remaining six variables. So, the main analyses were done in two stages, using family atmosphere and school environment as the predictors in both the stages. In the first stage, both adaptive cognitive emotion regulation and school motivation data were subjected to multivariate multiple regression analysis, separately for female and male participants (data were collapsed across the levels of socioeconomic status and family type). Results demonstrated that family atmosphere and school environment have significant positive effects on school motivation in both female and male participants. Family atmosphere has further significant positive effect on adaptive cognitive emotion regulation in male but not in female participants whereas school environment has further significant positive effect on adaptive cognitive emotion regulation in female but not in male participants. In the second stage of the main analysis, data for the remaining six variables, such as less adaptive cognitive emotion regulation, emotional intelligence, future aspiration, school engagement, hopelessness, and hostility, were collapsed across the levels of gender, socio-economic status, and family type, and analyzed in MANOVA using family atmosphere and school environment as the predictors. The multivariate results demonstrated that the overall regression model was significant, indicating that family atmosphere and school environment have significant overall effect on a linear combination of all the six aspects of cognitive-emotional functioning in adolescents. The univariate results showed the significant main effects of the predictors on each of the six functional aspects of adolescent behaviors. Parameter estimates indicated that both family atmosphere and school environment have significant positive effects on emotional intelligence, future aspiration, and school engagement in adolescents, and negative effects on their hoplessness and hostility. Consistently, family atmosphere demonstrated a negative effect on their less adaptive cognitive emotion regulation; however, school environment demonstrated a positive effect on this variable unexpectedly. The implications of these findings for theory, research, and practice are discussed.

**Key words:** *Adolescents, cognitive-emotional functioning, family atmosphere, and school environment*

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### List of Abbreviation

<b>Abbreviation</b>	<b>Elaboration</b>
AI	Accuracy Index
AuIn	Authoritativeness and Indulgence
ACER	Adaptive Cognitive Emotion Regulation
ACERQ	Adaptive Cognitive Emotion Regulation Questionnaire
AHA	Arthritis, Hives, and Angioedema
AIDS	Acquired Immune Deficiency Syndrome
AMOS	Analysis of Moment Structure
AOCR	Achievement-, Order- and Culture Orientation
APP	Affiliation with Parents and Peers
BE	Behavioral Engagement
BISE	Board of Intermediate and Secondary Education
BLA	Basolateral Amygdala
BT	Back Translation
CE	Classroom Environment
CogEn	Cognitive Engagement
CER	Cognitive Emotion Regulation
CERQ	Cognitive Emotion Regulation Questionnaire
CES	Classroom Environment Scale
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CH	Children Hopelessness
CHS	Children Hopelessness Scale

CIE	Commitment, Interest, and Enthusiasm
CMA	Centromedial Amygdala
DF	Degrees of Freedom
DMC	Dhaka Metropolitan City
DV	Dependent Variable
EA	Emotional Atmosphere
EE	Emotional Engagement
EF	Enthusiasm and Firmness
EFA	Exploratory Factor Analysis
EI	Emotional Intelligence
EIC	Enthusiasm, Innovation, and Competition
EIS	Emotional Intelligence Scale
ES	Emotional Stability
FA	Future Aspiration
FAS	Future Aspiration Scale
FE	Family Environment
FES	Family Environment Scale
fMRI	Functional Magnetic Resonance Imaging
FT	Flow Theory
GFI	Goodness-of-Fit Statistics
GPA	Grade Point Average
HIV	Human Immunodeficiency Virus
HS	Hostility Scale
IBM	International Business Machines

IC	Integrity and Commitment
IV	Independent Variable
KMO	Kaiser-Meyer-Olkin
LACER	Less Adaptive Cognitive Emotion Regulation
LACERQ	Less Adaptive Cognitive Emotion Regulation Questionnaire
MANOVA	Multivariate Analysis of Variance
MEBO	Making Excuse and Blaming Others
MI	Modification Indices
MIST	Ministry of National Science and Technology
NAEP	National Assessment of Educational Progress
OO	Order and Organization
PC	Principal Component
PuC	Pupil-centered
P-P	Probability Plot
PRPP	Positive Reappraisal and Putting into Perspective
RC	Rumination and Catastrophizing
RI	Relevance Index
RMR	Root Mean Square Residual
RMSEA	Root Mean Square Error of Approximation
RPTP	Refocus on Positive Thoughts and Planning
RTE	Response Time Effort
SAD	Self-awareness and Development
SAS	Statistical Analysis System
SB	Self-blame

SCA	Self-confidence and Analytic
SDT	Self-determination Theory
SE	Standard Error
ScEn	School Engagement
SES	School Engagement Scale
SM	School Motivation
SMART	Specific, Measurable, Accurate, Realistic, and Timely
SMI	School Motivation Inventory
SPSS	Statistical Package for Social Sciences
SRA	Society for Research on Adolescence
STD	Sexually Transmitted Diseases
TRARD	Translation, Review, Adjudication, Pretesting, and Documentation
TT	Team Translation
VIF	Variance Inflation Factor

## Introduction

Young people aged 10 to 19 are the largest age group in the world, consisting of close to 20% of the 6.5 billion world population estimated in 2005 (Richter, 2006). Among them 85% live in developing countries (e.g., Bangladesh, Cambodia) and account for about one third of those countries' national populations. Adolescence is an amazing period of growth in which they enter with the body and mind of a child, and then exit 10-12 years later, with the body and mind of an adult. Hall (1904) at first attracted psychologist, sociologist, development experts, and others on adolescents research. He viewed adolescence primarily as a time of internal turmoil and upheaval based on two new ways of understanding human behavior: Darwin's (1859) evolutionary theory and Freud's (1959) psychodynamic theory.

Hall believed that adolescence was a representation of our human ancestors' phylogenetic shift from being primitive to being civilized. Hall's assertions remained relatively uncontested until the 1950s, when psychologists such as Erikson (1968) and Freud (1974) started to formulate their own theories regarding adolescence. Freud believed that the psychological disturbances associated with adolescence were biologically based and culturally universal, while Erikson focused on the dichotomy between identity formation and role fulfillment (Luster & Small, 1994). Despite their different theories, they agreed that adolescence is inherently a time of disturbance and psychological confusion which is a universal and inevitable part of adolescent development.

During this life period important developmental aspects, such as cognitive, physical, social, emotional, moral, and cultural, are made. These developmental dimensions are not only subtle and difficult to measure, but also difficult to tease apart from one another due to their inter-relationships. For instance, our cognitive maturity will influence the way we understand a particular event or circumstance, which will in turn influence our moral judgments and emotional responses about it. Similarly, our moral code and emotional

maturity influence the quality of our social relationships with others. However, among the developmental aspects of adolescents, cognitive emotion is getting more attention to the researchers in today's world.

Adolescence is the primary stage of human development when individuals have the cognitive capacity to consciously sort through who they are and what makes them unique. The changes in how adolescents think, reason, and analyze situations logically in terms of cause and effect, entertain hypothetical situations, and use symbols, such as in metaphors, imaginatively, and understand can be even more dramatic than their obvious physical changes (Inhelder & Piaget, 1958). This higher-level thinking allows them to think about the future, evaluate alternatives, and set personal goals (Keating, 1990). Although there are marked individual differences in cognitive development among youth, these capacities allow adolescents to engage in the kind of introspection and mature decision making that was previously beyond their cognitive capacity.

According to Piaget (1970), the adolescent years are crucial and remarkable because youth move beyond the limitations of concrete mental operations and develop the ability to think in a more abstract manner which he termed formal operation. And successfully handling this stage leads youth to think in abstract terms so that they can conceptualize theoretical ideas, moving beyond the limitations of concrete information, analyze problems in a more logical and scientific manner, and the ability they develop to think abstractly and analytically simultaneously promotes their social, emotional, and moral development. According to Piaget, adolescents' cognitive development can be affected by many factors such as family, culture, the quantity and quality of formal schooling or training, various medical conditions, and emotional or physical trauma. If parents see their children's lack of developmental progress, they will want to discuss with their children's health care provider, and other professionals such as teachers, guidance, counselors, and school administrators.



Emotional development during adolescence period involves making a realistic, logic, and coherent sense of identity in the context of relating to others and learning to cope with stress and manage emotions (Santrock, 2001), processes that are life-term issues for most of the people. Identity refers to more than just how adolescents feel themselves right now; it also includes what has been termed the “possible self” what individuals might become and who they would like to become (Markus & Nurius, 1986). Establishing a sense of identity has conventionally been thought of as the central task of adolescence (Erikson, 1968), although it is now commonly accepted that identity formation neither begins nor ends during adolescence.

According to emotional development theory (Erikson, 1968; Larson & Ham, 1993), during adolescent period how to respond to new and unfamiliar situations at the same time they are experiencing increased demands on their physical, mental, and emotional resources can certainly increase mental problems such as stress, anxiety etc. However, the capacity and ability to adaptively cope with stress is influenced by many factors such as genetic factors (temperament), environmental factors (family, peers, teachers, coaches, community etc.). Erikson (1968) believed that when youth faced crisis of identity and intimacy during adolescence and if they successfully manage this crisis they become more healthy adjusted, acquire honesty, reciprocal relationships with others and have the capacity to bond with others to achieve common goals (e.g., marriage) which determine their future development.

Moral development theory (Kohlberg, 1976) and social development theory (Muuss, 1975, Hazen, Schlozman, & Beresin, 2008) assert that younger adolescents are heavily influenced by the opinions of other people, such as family members, peers, siblings, teachers etc, and make moral decisions based on how their decision might be judged by people who are important to them.

Because youth are trying to assert their individuality, exercising their independence, and youth may rebel against their parents' and teachers' rules and values as part of their identity development process. Sometimes youth openly defy these rules and values, while at other times they do so in private. Adolescents try to prove to their parents, teachers, and seniors that they can handle life's tough situations on their own. Also, teens may become increasingly annoyed with their younger siblings' efforts to join them in activities because they highly value their confidentiality, and relish the exclusive quality of their peer relationships.

However, many adolescent students cannot develop their cognitive-emotional functioning as expected which hinder their future development. Even many adolescents remain immature in their developmental task. So, the period of adolescence may be problematic for various reasons as stated below.

First, adolescence has long been recognized as a period of heightened risk-taking and problematic time. Many unexpected behaviors are seen during this time. For example, unexpected expectations regarding life, be mood swing and temperamental, emotional disturbances, interpersonal conflict with parents, peers, siblings, and classmates, self-identity crisis, worried about anything, sexual and mental health problems, and others. Though it is now accepted that many teenagers pass through this period quite smoothly, develop richer and more meaningful relationships with their parents and other adults, and they may come to trust them more.

Second, during this life period adolescent leaving or completing their school, bearing a child, and becoming economically productive (Richter, 2006). Moreover, they embrace experiences, more common in this age group than in others, that are capable of substantially altering life trajectories: nonconsensual sex, drug abuse, smoking, self-harms and interpersonal violence and getting into trouble with the law. Teens who begin using drugs to alleviate feelings of anxiety or depression (self-medicate), particularly when such use is

shared by their friends, may be at higher risk than other teens for developing a substance abuse (Simons, Whitbeck, Conger, & Melby, 1991). Obot and Wagner (2001) reported that parental substance abuse is also a risk factor for the development of substance abuse problems for adolescents. Lee, Mendes de Leon, & Markides (1998) reported that 70% of high school students have tried cigarette smoking, 25% before the age of 13 among Mexican Americans while it is 22.1% in Bangladeshi adolescents (Tarafdar, Nahar, Rahman, Hussain, & Zaki, 2009).

Third, friendships, educational achievement, diet and activity patterns, and civic involvement all affect adolescents' health, schooling, and family life, and they also have long-term effects on well-being in adulthood and even on future generations (Richter, 2006). Each year, about 15% of students drop out of school, with higher rates among low-income students in African American (Kortering, Hess, & Braziel, 1997). Some studies (e. g., Kortering et al., 1997) have found that members of different ethnic groups cite different reasons for dropping out of school. According to Directorate of Primary Education, (2007), in Bangladesh, the drop rate in Primary School is 28.49% (2004-2005) while it is 50.39% (2004-2005) in high school. In America, White teenagers who dropped out spoke mainly of feelings of estrangement and alienation from school, not getting along with teachers, and failing academically while Black and Hispanic teenagers cited the need to provide income for their families and to help with younger children, getting suspended or expelled as reasons for dropping out (Jordan, Lara, & McPartland, 1996).

Fourth, it is especially true in a world in which many adolescents face the same threats such as incomplete or poor-quality education, limited prospects for satisfying work, marginalization, HIV/AIDS, pregnancy and other Sexually Transmitted Diseases (STD), violence, and anxiety. Lee, Ko, Lee, Chang, and Ko (2008) reported that 4 million teens contract a STD each year in America, with older Hispanic and African American adolescents

tending to have higher rates of HIV/AIDS compared to other groups of teens (Ross, Dick, & Ferguson, 2006). As a result, many adolescents become pregnant in their early stage of life which affects their mental, emotional, and physical health. Approximately 6% of students report that they have been pregnant or responsible for getting someone pregnant (Moore, Miller, Gleib, & Morrison, 1995a). The overall prevalence of HIV in Bangladesh is less than 1%, but it could be as high as 8% by 2025. Even the latest (sixth) round of sero-surveillance reported an alarming rise of HIV among injecting drug users (IDUs) in 'Central City' of Bangladesh, from 1.4% in 2000 to 4.9% in 2005 (Government of Bangladesh, 2005; Islam & Conigrave, 2007).

Fifth, many adolescent involve in anti-social behavior such as gang violence, school shootings, snatching, and suicides involving teens are all too frequently reflected in newspaper headlines and movie plots. In the professional literature, adolescence is frequently portrayed as a negative stage of life (Arnett, 1999). Many factors, including living in poverty, violence in the media, the availability of handguns, and exposure to violence in the home and in the community, and the economically and socially impoverished communities in which many youths and their families live can contribute to antisocial or violent behavior among youth (Lerner & Galambos, 1998; Perry, 2000).

Sixth, lack of supervision of youth, unclear expectations of youth behavior, and no or only rare rewarding of positive behavior, and finally peer pressure might also increase risk behavior of adolescents (Barnes, Farrell, & Banerjee, 1994; Peterson, Hawkins, Abbott, & Catalano, 1994). There are many signs that begin to emerge at this age showing that it's not just an age where we're happy rather it is traceable into adulthood, where they become more important in terms of health outcomes.

Therefore, for the parents, teachers, family, society, state, social environment, social institutions all are concerned and involving regarding adolescents' sound adjustment and

development during this period which affect the next life. As a consequence, lot of efforts, time, investment, innovations, policy, training, creative working, recreation, healthy family and school environment, congenial syllabus, extra-curricular activities, development morality are adopting by them for adolescents development.

Among the various developmental aspects of adolescent, cognitive-emotional aspect is addressed in the present study to see its nature and association with family and school environment. Now, one pertinent question is: what factors influence cognitive-emotional functioning in adolescent students? Or, how far do the different factors contribute towards cognitive-emotional functioning in adolescents? There is no ready made answer to this sort of questions. Therefore, the prediction of cognitive-emotional functioning has been a problem of continuing interest to educationists, sociologist, and psychologists over the years and a complete and comprehensive picture of cognitive-emotional functioning still seems to eluding the researchers through the search toward this end.

Unfortunately, many of the studies of adolescents reported in the scientific literature have looked only at White middle-class adolescents in developed countries such as Europe and America (Lerner & Galambos, 1985; Ohye & Daniel, 1999). Thus, research on the developmental aspects of normal adolescents in developing and under developed countries are still lacking. Now, experts are trying to move to a new way of understanding and working with adolescents' development in the context of developing countries (Lerner & Galambos, 1995) which, no doubt, infused enthusiasm in many educational psychologists, teachers, researchers, etc. throughout the world to go deep into the interior of cognitive-emotional functioning with a new zeal to know and to explain very minutely the entire spectrum of factors that either promote or hinder cognitive-emotional functioning of adolescents. All these consequently, have brought into focus several new convictions in this particular domain of adolescent research: "what family does interactions with adolescent in home is the major

determinants of these characteristics rather than economic condition, neighborhood, social interaction, peer groups, and religiosity”, it is the school environment rather than physical characteristics of school or affective characteristics are important in determining or influencing adolescents’ cognitive-emotional functioning” (Roy & Biswas, 1997).

These issues and concerns have attracted researchers throughout the world to explain differences in adolescents’ cognitive-emotional functioning. The present research is a modest venture toward this end, particularly by taking family atmosphere and school environment as a correlate of cognitive-emotional functioning which has not been systematically studied particularly in Bangladesh where education is considered very ardent an important instrument for national development in the broad frame of human resource development.

### **1.1 Emergence of the study problem**

Adolescence is a transitional stage of physical and mental development generally occurring between puberty and legal adulthood but largely characterized as beginning and ending with the teenage stage. By action and by example, parents shape the lives of their children from birth through adulthood. In adolescence, the influence of friends and peers take on greater importance, but research clearly demonstrates the continued significance of parents in shaping the behaviors and choices of teens as they face the challenges of growing up (Borkowsky, Ramey, & Bristol-Power, 2002). There are many cognitive, emotional and social changes associated with the family, environment, school-linked transitions and with changes in the roles adolescents are expected to play by all those around them (Brad, 1990; Jeanne & Reiter, 1990).

Every family has a unique mood or tone, which is called the family atmosphere. Family atmosphere provides children messages about what is important in the family. Parents establish the family atmosphere which reflects parents’ issues and values. Through parenting, children absorb the family values and try to fit within the pattern or the standards set by the

parents. In family, parents set the stage for how children view what is important and also provide an atmosphere for their children that is encouraging, inviting them to belong by being cooperative and useful. If the parents make warm, friendly, and cooperative atmosphere in the family, it creates consistency, harmony, cooperation, patience, fairness, adjust in the children during interaction with outer world. The family environment can be a strong source of support for developing adolescents, providing close relationships, strong parenting skills, good communication, and modeling positive behaviors.

A wide range of studies have been conducted on adolescents' cognitive and emotional behavior in relation to family atmosphere and school environment. It has been shown that child rearing practices are affected by parents' marital maladjustment (Voydanoff & Donnelly, 1998) and are directly related to emotional and behavior disorders in adolescents (Muries, Bogels, Mestrers, & Kamp, 1996). Exposure to interpersonal conflict elicits negative emotion in adolescents (Cummings, Goeke-Morey, Papp, & Dukewich, 2002). On the other hand, parental involvement, parental support, and family education are positively related with pupil achievements and adjustment (Desforges & Abouchaar, 2003).

The process through which parents' stress is linked to adolescent problems seems to involve the experience of depression in parents as a consequence of their stress which, in turn, disrupts effective parental discipline, and leads to adolescent problem behaviors (Conger, Patterson, & Ge, 1995). Cummings and Davis (1994) stated that any changes in a family environment due to parental depression increase the risk of developing a mood disorder in children and adolescents. Other research finds that parental depression is associated with depression in youth (Gallimore & Kurdek, 1992) and that ineffective parenting behavior (e.g., low self-restraint among fathers) eventuates in problem behaviors in their offspring (Baumrind, 1991; D'Angelo, Weinberger, & Feldman, 1995). The relationship between depression, cognitive style, type D personality, (e. g., worry, gloom, irritability etc.),

family environment, and the interaction between these factors in adolescents are considerably significant (Zhang, Li, & Zou, 2011).

Family conflicts may lead the adolescent to think negatively about himself or herself, and can even eventuate in his or her thinking about suicide (Shagle & Barber, 1993). In addition, family conflict is associated with "externalizing" problems (e.g., such as hostility) among youth (Mason, Cauce, Gonzales, Hiraga, & Grove, 1994). Conflicts in the parent-child relationship result in problems in youth development (Rubenstein & Feldman, 1993). Inconsistent parenting, stressful life experiences, and a negative way of viewing the world are associated with childhood depression and many unexpected situations in future life (Khaleque & Rohner, 2002). Family bonding, family conflict and peers' antisocial behavior all remain independent predictors of drug use in adolescence and suggest that family bonding may sway the child to associate with peers engaged in more positive behavior (Mason et al., 1994). Close relationships, healthy open communication, and perceived parental support are especially important during adolescence, as children experience many physical and emotional changes. For example, research shows that teens who have positive relationships with their parents are less likely to engage in various risk behaviors, including smoking, fighting, and drinking (Guilamo-Ramos, Jaccard, Turrisi, & Johansson, 2005).

Family stability is crucial for normal child development. There is a considerable body of research indicating that divorce is associated with social, academic, and personal adjustment problems, including those associated with early initiation of sexual behavior (e.g., Brody & Forehand, 1990; Carson, Madison, & Santrock, 1987). Parent-child relations are less hierarchical and children are pushed to grow up faster in divorced families (Smetana, 1993). On the other hand, close parent-child relationships, good parenting skills, shared family activities, and positive parent role modeling all have well-documented effects on adolescent



health and development (Hair, Moore, Garrett, Kinukawa, Lippman, & Michelson, 2005; Parker & Benson, 2004; Resnick, Ireland, & Borowsky, 2004).

Another aspect of family atmosphere that can affect child's behavior is parental monitoring. Parental monitoring includes knowing children's whereabouts after school, as well as knowing their friends and activities. These behaviors, when combined with parental support, have been shown to be positively related to higher adolescent self-esteem, higher GPAs (Grade Point Average) in school and greater academic success (Mounts, 2001). Parental monitoring has been associated with fewer internalizing behaviors, such as withdrawal and depression, and externalizing behavior problems, such as fighting and disturbing others (Brody & Murry, 2002; Barber & Olsen, 1994) as well as a lower likelihood of drinking (Stephenson, Quick, & Atkinson, 2005) smoking and engaging in other risky behaviors.

Studies have also shown that emotional intelligence (Parke, 1994; Cole, Martin, & Dennis, 2004), future aspiration (Nurmi, 1991), student aspiration (Wahl & Blackhurst, 2000), hopelessness (Shek, 1999), and hostility (Keltikangas-Järvinen & Heinonen, 2003) are affected by family atmosphere. Similarly, in various studies it was seen that emotional intelligence is influenced by parents (Manuel, 2002), family environment (Nixon & Watson, 1999), academic achievement (Abisamra, 2000) while cognitive emotion regulation is influenced by parenting style (Baumrind, 1967; Karim, Sharafat, & Mahmud, 2013), family type (Amato, 2001), and family cohesion (Fried, 2010).

Perceived social support and family environment (Cakar & Karatas, 2012; Akbag & Goktan, 2010), school type (Taskesen & Ulucay, 2013) affect adolescents' hopelessness. Similarly, hostile and aggressive behavior is influenced by family and school environment (Musitu & Garcia, 2004), institutional authority (Emler & Reicher, 1995), emotional abuse (Hoglund & Nicholas, 1995). The notion of Bar-On (2006) model is that emotional

intelligence is influenced by oneself, others, and environment. Behavioural approach (e.g., Jex & Britt, 2008) asserts that an individual's future aspiration depends on reinforcement which he or she gets it from family environment, school environment etc.

Like family atmosphere, school environment is also crucial for a child's cognitive-emotional development. School environment focuses explicitly on the psychosocial environment of the school/classroom and conceptualizes environment as a dynamic social system which induces not only teacher behavior and teacher-student interaction, but also student-student interaction. The environment of classroom is defined by the shared perceptions of the classroom participants, both teachers and students (Trickett & Moos, 1973). According to the self-determination theory (SDT), the degree to which students perceive that the school context meets their psychological needs determines the level of students' engagement in school. In the self-system approach, school engagement is hypothesized to be malleable and responsive to interactions between both the individual and the learning environment (Connell, 1990; Skinner & Belmont, 1993). Research has shown that school environment influences three types of student engagement such as behavioral, emotional, and cognitive (Fredricks, Blumenfeld, & Paris, 2004; Jimerson, Campos, & Greif, 2003). Behavioral engagement includes positive conduct (e.g., attending class and completing schoolwork), involvement in learning and academic tasks (e.g., effort and concentration), and participation in extracurricular activities (Finn, 1993; Finn, Pannozzo, & Voelkl, 1995). Emotional engagement represents a student's affective reactions and sense of identification with school (Skinner & Belmont, 1993). Cognitive engagement refers to a student's self-regulated and strategic approach to learning (Fredricks et al., 2004). Incentive theories (e.g., Ryan & Deci, 2000) provide a notion is that a student motivation towards school would increase if he or she is intrinsically and extrinsically motivated to school works. According to attachment theory (Bowlby, 1969), adolescents' hopelessness, hostility, and aggressive

behavior depends on their nature of attachment with parents, peers, teachers etc. A growing body of research suggests that the social, instructional, and organizational climate of schools influences both students' engagement and their academic achievement (e.g., Eccles, Wigfield, & Scheifele, 1998; Patrick, Ryan, & Kaplan, 2007; Ryan & Patrick, 2001). Studies have also demonstrated that school environment has strong influence on academic achievement (Coon, Carey, Fulker, & Defries, 1993), aspirations (Maijoribanks, 2003; Biichinann & Dalton, 2002), and hostility (Boman & Yates, 2001). Wentzel (1998) reported that adolescents' positive supportive relationship with parents, teachers, and peers lead to motivation at school.

Needless to say, the above studies and theories promote some understanding of how children's development and behavior can be affected by the different aspects of family atmosphere and/or school environment. However, they are biased to reflect the scenario of individualistic societies only, and therefore fail to give information about collectivistic societies. Collectivistic societies focus on the primacy of one's 'in group' goals over individual wishes and desires, requiring individuals to adjust their behavior to the group more than individualistic societies. They emphasize values such as conformity, obedience and in group harmony (Matsumoto, Hossain, Uddin, Karim, & Mahmud, 2007). In an individualistic society, people are supported to look after themselves and their immediate family only. On the other hand, in a collectivistic society, such as in Bangladesh people take care of them in exchange for loyalty. Although religiously, ethnically, and linguistically homogenous, the dominant cultural pattern in Bangladesh appears to be hierarchical (Bertocci, 1996; Hussain & Khan, 1998; Kochanek, 1993; Rahman, 2005). That is, the society is characterized by high group values and high grid values (strong collectivism). Individuals identify strongly with groups in society and these groups aid to organize a great deal of day-to-day life in the country. But, we still do not know how the family and schools in this society affect the

cognition, emotion, and other developmental aspects in children. Thus, the question remains to answer how adolescents' cognitive-emotional behaviors are associated with family atmosphere and school environment in Bangladesh.

Thus, a thorough probe into the relevant literatures and studies so far made led the present researcher further to think that a crucial issue in researching on correlates of adolescents' cognitive emotional functioning, is to have a clear picture of how various aspects of family atmosphere and school environment determine adolescents' cognitive emotional functioning. But, to date, very few researches have examined the collective impact of family atmosphere and school environment on their cognitive-emotional functioning. The past studies have also some other methodological flaws and limitations. For example, most of those studies addressed the issues of cognitive and emotional functioning partially and separately. And it has not been yet studied systematically and thoroughly how family and school environment jointly influence the cognitive-emotional functioning in adolescents. Moreover, very few of the past studies have focused on the eleventh grade students.

The present study addressed all these conceptual and methodological limitations. The present investigator thought that the prediction of cognitive-emotional functioning could suffer from heterogeneity of sample if he would take the secondary and higher secondary adolescents of all grades. Because, adolescence is a period of heightened risk-taking stage that requires special oversight from adults. A large percentage of people experience major key life-course events in this time. The present study might promote smooth development of adolescent. Therefore, he concentrated only on the eleventh grade adolescent students of either sex who have attended good many years in schools and colleges having more or less the same years' of schooling experience, and therefore would be mature enough to rate their responses related to the measures of all the variables included in the study.

## 1.2 Statement of the study problems

The problem of the present study was to investigate how family atmosphere and school environment can predict adolescents' cognitive-emotional functioning. On the main, the study was designed to answer three major questions with respect to cognitive-emotional functioning in adolescents (eleventh grade students).

1. What are the salient aspects of family atmosphere and school environment experienced by the adolescents in Bangladesh?
2. Are family atmosphere and school environment associated with cognitive-emotional functioning in adolescents?
3. To what extent can family atmosphere and school environment contribute to the prediction of cognitive-emotional functioning in adolescents?

## 1.3 Objectives of the study

The objectives of the present study were:

1. To adapt for adolescents suitable tools for assessing their (a) cognitive emotion regulation (b) emotional intelligence (c) future aspiration (d) school motivation (e) school engagement (f) children hopelessness (g) hostility (h) family environment and (i) school environment.
2. To study the factor structures of (a) cognitive emotion regulation (b) emotional intelligence (c) future aspiration (d) school motivation (e) school engagement (f) children hopelessness (g) hostility (h) family environment and (i) school environment.
3. To find out the extent to which family atmosphere and school environment are associated with cognitive emotion regulation, emotional intelligence, future aspiration, school motivation, school engagement, children hopelessness, and hostility in adolescents.

4. To investigate how family and school environment can predict combinedly as well as separately the cognitive emotional functioning in adolescents.

#### **1.4 Assumptions of the study**

Some assumptions for the present study were:

1. Cognitive emotion regulation (adaptive and less adaptive), emotional intelligence, future aspiration, school motivation, school engagement, hopelessness, and hostility in adolescents are assumed to reflect their cognitive-emotional functioning.
2. Cognitive emotion regulation, emotional intelligence, future aspiration, school motivation, school engagement, children hopelessness, and hostility can be reliably assessed with the help of appropriate tools used in this study.
3. Every family has its characteristic social climate and it can be reliably assessed from adolescent's responses made with respect to family environment scale used in this study.
4. Every classroom has its characteristic social climate and it can be reliably assessed from students' responses made with respect to classroom environment scale used in this study.
5. Cognitive emotion regulation, emotional intelligence, future aspiration, school motivation, school engagement, children hopelessness, and hostility are linearly related to family and school environment.

#### **1.5 Hypotheses**

The present study is designed to investigate the relationship of adolescents' cognitive-emotional functioning with family atmosphere and school environment. Based on the in-depth literature review, the following eight hypotheses were formulated:

- Hypothesis 1: Family atmosphere and school environment have positive impacts on adaptive cognitive emotion regulation.

Hypothesis 2: Family atmosphere and school environment have negative impacts on less adaptive cognitive emotion regulation.

Hypothesis 3: Family atmosphere and school environment have positive impacts on emotional intelligence.

Hypothesis 4: Family atmosphere and school environment have positive impacts on future aspiration.

Hypothesis 5: Family atmosphere and school environment have positive impacts on school motivation.

Hypothesis 6: Family atmosphere and school environment have positive impacts on school engagement.

Hypothesis 7: Family atmosphere and school environment have negative impacts on hopelessness.

Hypothesis 8: Family atmosphere and school environment have negative impacts on hostility.

### **1.6 Significance of the study**

The problem of predicting adolescents' cognitive-emotional functioning in terms of family and school environment has probably received more attention than any other single problem in education and development. It is gaining greater importance than ever before on the ground that more and more students are coming out of secondary and college with insufficient cognitive-emotional adjustment in Bangladesh. For example, in daily experience it is observing that adolescents' are involving different types of unexpected and anti social behavior such as smoking, drug abuse, snatching, eve teasing, robbery etc. As a result of which public criticisms are being thrown to the students, parents, teachers, schools etc. Consequently, the question of accountability of the family and school and their environment is a very common topic of discussion for the government, parents, teachers, and the general

public in the country. Therefore, a pertinent question: what factors are potentially and dynamically related to cognitive-emotional functioning of adolescents? Or what are the trustworthy determinants of cognitive-emotional functioning or how family and school environment affects the cognitive-emotional functioning of adolescents? This research purports to answer this sort of questions which will extent the body of knowledge so far encompassed and may, in turn, will be usable in solving many problems that has posed some difficulties in this field of study.

According to the earliest views, the factors that are responsible for promoting normal cognitive-emotional functioning in adolescents are school, intelligence, peer groups, parent-child relationship, student-teacher relationship, socio-economic status, parental education, sex etc. However, the joint effect of the various aspects of family atmosphere and school environment on adolescents' cognitive-emotional functioning is stil unknown. It is expected that, the results of the present study will discover some important facts and identify valuable information about the correlates of cognitive-emotional functioning in adolescents which will having both theoretical and practical importance as depicted below.

First, the outcome of this research will perhaps portrait the factor-structure of cognitive emotion regulation, emotional intelligence, future aspiration, school motivation, school engagement, children hopelessness, hostility, family environment, and school environment in the Bangladesh context. These factor structures may be treated as a base for further research on the empirical plane from which more conceptual clarification of the concepts relating to family and school environment, school motivation, emotion regulation, emotional intelligence, hostility, future aspiration, hopelessness, and school engagement may be revealed.

Second, the new tools to be prepared (adapted) through this study may be used in further study in the area of cognitive emotion regulation, emotional intelligence, future aspiration,



school motivation, school engagement, children hopelessness, hostility, family environment, and school environment or in any other areas that will seem to have aspects of family and school environment and/or cognitive-emotional functioning.

Third, the results of this study will present the predictive capacity of both family atmosphere and school environment in predicting cognitive emotion regulation, emotional intelligence, future aspiration, school motivation, school engagement, hopelessness, and hostility of the eleventh grade students very minutely from which the relative importance of family and school environment can be particularized in the context of the prediction set taken in this study. This information will definitely suggest strategy for promoting adolescents' cognitive-emotional functioning in future courses of the plan for researchers, teachers, curricular builders etc.

Fourth, this study has the aim to examine zero-order correlations of cognitive-emotional functioning with family and school environment. The outcome from the analyses would also present univariate and multivariate multiple relationships of cognitive-emotion with family atmosphere and school environment which will have both theoretical as well as practical utility in the domain of correlation of cognitive-emotional functioning.

Fifth, from the outcome of the factor analytic study we will be able to describe the family atmosphere and school environment perceived by the Bangladeshi adolescents which has never been explored even before and this can be used to explain the possible influences of these factors on behaviors of all sorts including cognitive-emotional functioning in adolescents.

Sixth, the outcomes of this study as a whole will be of much use to the future researchers, teachers, parents, educators, social planners or anyone interested in adolescents' development.

## 1.7 Definition of the important terms

**1.7.1 Adolescence.** The word adolescence comes from Latin word *adolescere*, meaning "to grow up". It is a transitional stage of physical and psychological human development that generally occurs during the period from puberty to legal adulthood (Marcell, 2007). This period of time is most closely associated with the teenage years (Marcell, 2007), though its physical, psychological, cultural, and other expressions may begin earlier and end later. For example, although puberty has been historically associated with the onset of adolescent development (Christie & Viner, 2005), but it typically begins prior to the teenage years and there has been a normative shift of it occurring in preadolescence, particularly in females. Physical growth (Dorn & Biro, 2011) of males, and cognitive development generally seen in adolescence, can also extend into the early twenties. Thus, chronological age provides only a rough marker of adolescence, and scholars have found it difficult to agree upon a precise definition of adolescence (Zukauskaite, Lasiene, Lasa, Urbonaite, & Hindmarsh, 2005). A deep understanding of adolescence in society depends on information from various perspectives, including psychology, biology, history, sociology, education, and anthropology. Within all of these perspectives, adolescence is viewed as a transitional period between childhood and adulthood, whose cultural purpose is the preparation of children for adult roles (Larson & Wilson, 2004). This transitions period involving education, training, employment, and unemployment, as well as from one living circumstance to another. Biologically, adolescent can be defined biologically, as the physical transition marked by the onset of puberty and the termination of physical growth; cognitively, as changes in the ability to think abstractly and multi-dimensionally; or socially, as a period of preparation for adult roles. Major pubertal and biological changes include changes to the sex organs, height, weight, and muscle mass, as well as major changes in brain structure and organization. The study of adolescent development often involves interdisciplinary collaborations. For example,

researchers in neuroscience or bio-behavioral health might focus on pubertal changes in brain structure and its effects on cognition or social relations. Sociologists interested in adolescence might focus on the acquisition of social roles (e.g., worker or romantic partner) and how this varies across cultures or social conditions (Cote, 1996). Developmental psychologists might focus on changes in relations with parents and peers as a function of school structure and pubertal status (Simmons & Blyth, 1987).

The development of familial, interpersonal, and institutional relationships at this critical stage may have lasting influences throughout the life-course (Wheaton & Clarke, 2003). Investigations from hundreds of societies confirm that adolescence is a universally recognized life stage, starting around or just after puberty, although with different markers, behavioral manifestations, and social attributions (Brown, Larson, & Saraswathi, 2002; Fuchs, 1976). In most societies, the starting of adolescence is celebrated through rituals and cultural associated with prospective adult roles, such as reproduction, responsibility, and work. In highly industrialized societies, the rites of passage are less public and more variable, but the period between childhood and adulthood may be bridged by changes in schooling, changes in family rules about autonomy, “first-time” experiences such as drinking alcohol, or inauguration into a group (Delaney, 1995). But developing countries like Bangladesh there is no rituals or cultural function for celebration of adolescents.

The period of adolescence forms an important stage in the development of cognitive-emotional functioning skills as this is the period in which the more advanced cognitive-emotional functioning are being mastered. As adolescents grow they have to learn how to regulate emotions, motivation, cognition, and other socio-cultural function which has both positive and negative impacts on their relationships with family, school, neighbors, and friends. Erikson (1968) identified it is the period known for the formation of personal and

social identity and the discovery of moral purpose. Conventionally (e.g., Sarafino & Armstrong, 1980) adolescence period can be classified into three parts namely:

**1. Early adolescence (9 to 13 years):** This period falls between 9 to 13 years (Nare, Katz, & Tolly, 1997), and includes the developmental changes and the onset of puberty initiated and indicated by the growth spurt. During this period, the adolescents remain home-centered. His behavior may temporarily show a disorganized, erratic along with a decreased willingness to accommodate the expectation of his parents and others while wilder-mood swings and periodic bouts of feeling ill-treated end. His group activities are primarily with members of the same sex.

**2. Mid adolescence (13 to 15 years):** This period spans between 13 years and 15 years. At times, the first tentative interest and approach towards the opposite sex usually takes place. The awakening of heterosexual interest often disrupts previous peer groupings and intimate friendships. Characteristically, this is the stage when adolescent rebellion starts, a period of irritability, wide mood swings and rapidly changing feelings. Obedience to parental dictates is replaced by conformity to peer group standards and loyalties and early sexual exploration begins (Nare et al., 1997).

**3. Late adolescence: (15 to 18 years):** This is the period of transition as the young consolidates his identity and comes to grips with his future. This stage falls between the age 15 and 18 years. He is more able to be selective and discriminating in his relationships. Feeling himself a more complete and separate person he is more able by his stage to form and maintain truly intimate relationship with others whose beliefs, ideas, and motives he can see and respect as clearly as he does his own (Nare et al., 1997).

The adolescent unconsciously explores questions such as "Who am I? Who do I want to be?" Like toddlers, adolescents must explore, test limits, become autonomous, and commit to an identity, or sense of self. Different roles, behaviors, and ideologies must be tried out to

select an identity. Scientists approach the understanding of adolescence from different theoretical perspectives or points of view.

In the present study, adolescents are those whose age range is in between 15 to 17 years. Generally, in Bangladesh, XI grades students belongs to this age range. Other age range of adolescents is not considered in the present study due to control age effect of adolescent.

**1.7.2 Cognitive-emotional functioning** Cognitive emotional functioning is the cognitive way of handling the intake of emotionally arousing information (Garnefski, Kraaij, & Spinhoven, 2001). This functioning covers a wide range of cognitive emotional components. So, it is not possible to incorporate all types of cognitive emotional functioning of adolescents in the one research. Consider this matter, some important and contemporary functions of adolescents are considered in the present study on the basis of past studies and literature such as cognitive emotional regulation, emotional intelligence, future aspiration, school motivation, school engagement, hopelessness, and hostility.

**1.7.2.1 Cognitive emotion regulation.** Until the last five decades, psychologists have paid little attention to emotions. At different stages, the behaviourist and cognitivist movement both underplayed the importance of emotions, mainly because they were not directly observable. However, emotions gained some recognition in the early 1900s, psychologists tended to view them as possible obstructions to people making good decisions and focusing on tasks. In the mid-1900s, Maslow (1943) changed the direction of this thinking when he described how people can build emotional strength, making emotions pertinent to education. Thus, whereas emotions were previously regarded as irrational and inexplicable, they were then conceived as being rational and related to logic and understanding (Griffiths, 1984). The latter conception allowed emotions to be organised and shaped (LeDoux, 1998) and because emotions can convey valuable information and enhance

cognitive processes, they have become viewed as integral to the learning process (Schutz & Lanehart, 2002).

Emotion is the biological reactions that arise when a situation is appraised as presenting crucial opportunities, challenges, and co-ordinate our responding to important environmental events (Gross & Munoz, 1995). For example, disgust, fear, etc. are human emotions. According to appraisal theorists (Roseman & Smith, 2001) emotions serve as a powerful vehicle for enhancing or inhibiting learning. Today it is recognised that aspects of cognition that are the focus of learning, attention, memory, decision making, motivation, and social functioning are not only affected by emotion but intertwined within emotion processes. In addition, application of knowledge, facts, and logical reasoning skills learnt at school to real world situations requires emotion processes (Immordino-Yang & Damasio, 2007).

Experiencing emotion in everyday life always need to control for human life maintaining sound social psychological relation. This capacity is called emotion regulation. Emotions and emotional responses can serve people well, but there are times when emotional responses do more harm than “good” (Gross, 2002). This finding supports the view that emotions periodically need to be regulated, which is particularly relevant in a school setting where rules for social conduct exist. Emotion regulation is the ability to control the experience and expression of emotions (Gross, 2002). Since students do not necessarily choose to be at school or to participate in particular learning activities, and have family emotional effect on their tasks, they therefore may need to regulate a variety of emotions in the classroom and family (Turner, Meyer, & Schweinle, 2003).

Emotion regulation has both cognitive and behavioral aspects. We are interested here in the cognitive aspect. Cognitive emotion regulation is defined as the conscious, cognitive way of managing the intake of emotionally arousing information (Thompson, 1994). Theories of cognitive emotion regulation posit that thinking and acting are two different processes and,

therefore, consider cognitive strategies of emotion regulation in a conceptually pure way, separate from behavioral strategies (Garnefski, Kraaij, & Spinhoven, 2002). The cognitive strategies that people generally use to regulate their emotions in different settings can be divided into two broad categories: adaptive strategies and less adaptive strategies. Cognition can be divided into two parts such as conscious and unconscious process. The cognitive emotion regulation is generally focused on the conscious cognitive process such as other blame, positive acceptance etc. On the other hand, Gross (1999) and Thompson (1994) considered cognitive emotion as broader concept of emotion regulation and defined as “all the extrinsic and intrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions, especially their intensive and temporal features”. Garnefski et al. (2001), reported that the cognitive emotion regulation theory is based on the assumption that thinking and acting refer to different processes and, therefore, considers cognitive strategies in a conceptually pure way, separate from behavioral strategies.

Garnefski et al. (2001), developed nine cognitive emotion regulation strategies through principal component analyses of which five strategies fall in the adaptive category and four in the less adaptive category. The adaptive category includes acceptance, positive refocusing, refocus on planning, positive reappraisal, and putting into perspective strategies. The less adaptive category includes self-blame, rumination, catastrophizing, and other-blame. Each component referring to what someone thinks after the experience of threatening or stressful events. Self-blame refers to thoughts of putting the blame for what you have experienced on yourself. Other-blame refers to thoughts of putting the blame for what you have experienced on the environment or another person. Rumination or focus on thought refers to thinking about the feelings and thoughts associated with the negative event. Catastrophizing refers to thoughts of explicitly emphasizing the terror of what you have experienced. Putting into perspective refers to thoughts of brushing aside the seriousness of the event/emphasizing the

relativity when comparing it to other events. Positive refocusing refers to thinking about joyful and pleasant issues instead of thinking about the actual event. Positive reappraisal refers to thoughts of creating a positive meaning to the event in terms of personal growth. Acceptance refers to thoughts of accepting what you have experienced and resigning yourself to what has happened. Refocus on planning refers to thinking about what steps to take and how to handle the negative event.

Koole (2009) and Gross (2001) argued that emotion regulation strategies have been classified according not only to the target of the strategy and psychological function but also to where they occur on the response time-line. The main targets of emotion regulation are attention, emotion-relevant knowledge and body manifestations of emotion, while the psychological function can be need oriented, person oriented or goal oriented (Koole, 2009). Gross (2001) termed emotion regulation strategies as antecedent or response-focused. Antecedent strategies are those implemented before the onset or in the early stages of the emotion response whereas response-focused strategies are concerned with managing the physiological or behavioural responses to an emotion. Koole (2009) argues that many of the strategies can be used at various times along the emotion generation timeline.

Scientists posited that adaptive strategies are central to well-being and successful functioning (Cicchetti, Ackerman, & Izard, 1995). People who adopt adaptive strategies report fewer emotional problems (e.g., depression, anxiety) than do people who use less adaptive strategies (Garnefski, Kraaij, & Spinhoven, 2001). Earlier research (such as Garnefski, Kraaij, & Spinhoven, 2001) have focused that the regulation of emotion through cognition is inevitably related with human life which helps people to keep control over their emotions during or later the experience of threatening or stressful events. For example, when experiencing a negative life event, we may be inclined to have thoughts of blaming ourselves or we may, instead, blame others. We may dwell on our feelings by ruminating or we may try



to accept or positively reappraise the situation. Although the capability of advanced thinking and regulation emotions through cognition is universal, large individual differences exist in the amount of cognitive activity, and in the content of the thoughts by which people regulate their emotions in response to life experiences, events, and stressors.

**1.7.2.2 Emotional intelligence.** Emotion is a focus subject for both psychologists and philosophers which is a general stimulation that can change from a deep feeling to a tense feeling in response to a certain situation. When considering how emotions occur and whether or not they change from person to person, it is agreed that emotions get socially structured through an assembly of cultural sections (Erkus, 1994). Developmental researchers have found out that emotions play an important role in social communication, personality functions, and even in cognitive processes. It is a behavioural regulator developmentally. The emotional self regulation strategies that the individuals use while adapting themselves to their emotions and the concept closely related to the intellectual control is called 'emotional intelligence'. It is accepted that on the basis of the concept of emotional intelligence there lies the opinion that there may be differences among people on their capabilities to control their emotional lives. According to Mayer and Salovey (1993), emotional intelligence is 'the capability to understand the emotions, to produce and enhance emotions in an aim to support thinking, to understand the emotional data and to regulate the emotions as a reflector in order to ensure emotional and intellectual development'. The ability to manage feelings, empathy, and handle stress is crucial aspect of emotional intelligence that has been found to be important for success, effective performance at work (Bhatia, 2012). Emotional intelligence has much to do with knowing when and how to express emotion along with controlling it. The period of adolescence is filled with intellectual and emotional changes in addition to other major biological and physical changes. But, emotional problems of adolescents are increasing day by day all over the world due to modernization and westernization.

Mayer and Salovey (1997) have defined the emotional intelligence “perceiving emotions, using emotions in order to support ideas, understanding emotions and emotional information, adjusting emotions for emotional and mental development”. Recently two conceptions of emotional intelligence such as trait emotional intelligence and ability emotional intelligence have been indicated. Trait emotional intelligence concerns emotion related dispositions and self perceptions measured via self-report, whereas ability emotional intelligence concerns emotion-related cognitive abilities measured via performance based tests (Petrides, Pita, & Kokkinaki, 2007). Emotional intelligence covers abilities like recognising, understanding, and regulating emotions which are important for children to establish positive relationships with people (Goleman, 2001).

Emotional intelligence can be defined as the ability to monitor one's own and other people's emotions, to discriminate between different emotions and label them appropriately and to use emotional information to guide thinking and behavior. However, substantial disagreement exists regarding the definition of EI, with respect to both terminology and operationalizations.

Goleman's theory (1995) suggests that emotional intelligence includes knowing and managing of personal emotions, sympathizing with others and manipulation of communications in order to be satisfied with them. In other word, one person with high emotional intelligence combines 3 components of emotions successfully such as cognitive, physiological, and behavioral (Huffman, 2008).

Bar-On (2006) asserted emotional intelligence is a set of ability and competence that ensures individual's being successful in life and healthy in general and psychologically. For him, these abilities and competences compose individual, emotional, and social dimensions of intelligence. Bar-on distinguished emotional and social intelligence since the first one represents individual, emotional and social abilities and the second one represents cognitive

abilities. Besides, he suggested that, contrary to cognitive intelligence, emotional intelligence predicts individual's success better since it shows the application style of knowledge to the current situation.

[Goleman, \(1998\)](#) viewed emotional intelligence as a general structure that could be the cause of the success of persons in various aspects of life. He believed that persons who has higher emotional intelligence, has more ability in acquiring information and their life is more meaningful ([Goleman, 1998](#)). Bar-On believed that emotional intelligence is a collection of abilities and skills that mobilizes person for consistency with environment and success. The Mayer-Salovey-Caruso emotional intelligence model was developed from an intelligence testing tradition formed by the emerging scientific understanding of emotions and their functions ([Mayer, Salovey, & Caruso, 2002](#)).

[Bhatia \(2012\)](#) reported that emotional intelligence helps in understanding the emotional information and in reasoning emotions. If taken a deep thought, nothing new about emotional intelligence will be found. It is based on a long history of research and theory in personality, sociology as well as psychology. Family and school environment where the foundations of emotional intelligence are first laid is a setting the child grows up and acquires some information relating to life. Both environment bearing healthy and high quality characteristics affects the development of the child in many ways like ego concept of the child and his/her emotional and social development. From the both environment child feels, observes, and learns the emotional relationships ([Warhol, 1998](#)). Children try to understand the emotions through the attachment and modeling with parents ([Suess, Grossmann, & Sroufe, 1992](#)). Social status of the parents, the residence, relations within the family, the number of siblings and the relations among the siblings, teacher-student relation, academic success, structure of school environment etc. determine the characteristics of the family and school environment.

The child is affected by the sources of the both environment to a great degree while gaining experiences relating to life.

Several factors such as child's character, neurophysiology, and cognitive enhancement are the important factors for adolescents' emotional intelligence (Eisenberg & Morris, 2002; Goldsmith & Davidson, 2004). However it has been seen that emotional intelligence may strengthen or dull with the effect of both these factors and social relationships like family, school, circle of friends etc. Family environment is especially the most important one among these (Parke, 1994; Walden & Smith, 1997).

**1.7.2.3 Future aspiration.** The term aspiration lends itself to a variety of definitions and interpretations. Quaglia and Cobb (1996) construct of aspirations finds its origins in the experimental research on "level of aspiration" conducted in the early 1930s. Although work in this area contributed to our understanding of human behavior, many of the findings were produced from "within the laboratory" and thus had few implications for students or schools.

In society one cannot live alone without having a goal or aspiration. For some people the goal is material which is see and achieve, on the other hand, for others the goal is spiritual which doesn't easy to see and achieve. In the present study the material goal is related with adolescents' future aspiration which is a desire or ambition for which someone is motivated to work very hard. For example, a student may be to become a doctor, teacher, or journalist etc.

Aspirations begin to be shaped early in child's life, but are modified by experience and the environment. Aspirations tend to decline as children mature in response to their growing understanding of the world and constraints imposed by previous choices and achievements. This decline is particularly marked for those, who face multiple barriers. Aspiration means a strong desire to achieve something high or great. It usually can not the achievement of something high or great. These also address both present and future perspectives. Sirin, Diemer, Jackson, and Howell (2004) defined aspiration as the educational and vocational

dreams that students have for the future. According to [Hurlock \(1973\)](#), “Aspiration means a longing for what one has achieved with advancement on it’s as its end”.

[Gottfredson \(2002\)](#) has presented two types of aspiration such as has idealistic and realistic aspirations. The first one focuses on one’s ideal and desired goals, and the latter conciliates the academic aspirations with the awareness of the opportunities and obstacles that might facilitate. It is assumed that family and school environment as a social, psychological, and financial entity, plays an important role in the formation of adolescents’ future aspiration. Both family and school environment has a substantial role in shaping the anticipated pathways of young people’s future aspiration. Most youth recognize the importance of education for their future jobs, and see university as the path to future achievement. Such beliefs about the job relevance and education are strong predictors of aspirations.

Aspirations can be defined as a student's ability to identify and set goals for the future, while being inspired in the present to work toward those goals. This construct of aspirations has two major underpinnings: inspiration and ambitions. Inspiration reflects that an activity is exciting and enjoyable to the individual and the awareness of being fully and richly involved in life here and now. It is depicted by an individual who becomes involved in an activity for its intrinsic value and enjoyment. An individual with a high level of inspiration is one who believes an activity is useful and enjoyable. Ambitions represent the perception that an activity is important as a means to future goals. It reflects individuals' perceptions that it is both possible and desirable to think in future terms and to plan for the future.

**1.7.2.4 School motivation.** The term ‘motivation’ refer to a physiological drive- pushing a person or an animal, wish to achieve, extrinsic and intrinsic motivation, need for achievement, competence, self-confidence, anxiety, hope for success and fear of failure ([Roy & Biswas, 1997](#)). It is commonly said motivation is one of the essentials conditions of

learning and both the personality scientists and learning theorists have endeavoured to explain the origin, dynamics, and structures of motivation according to their respective school of thinking. As an important and essential condition of learning, educational psychologists have also attempted to examine role of motivation in academic success in school learning.

Motivation stems from the interaction of both conscious and unconscious factors such as the (1) intensity of desire or need, (2) incentive or reward value of the goal, and (3) expectations of the individual and of his or her peers. These factors are the reasons one has for behaving a certain way. According to [Ryan and Deci \(2000\)](#) motivation is “an internal state that arouses, directs, and maintains behavior”. Motivation is a theoretical construct used to explain behavior, represent the reasons for our actions, our desires, our needs, etc. and explain why people do what they do. A motive is what prompts a person to act in a certain way or at least develop an inclination for specific behavior. Behavior can be energized and directed by drives, needs, incentives, goals, social pressure, interests, curiosity, values and expectations, and more. Psychologists have made a distinction in motivation based on intrinsic and extrinsic factors. Intrinsic motivation refers to the natural tendency to seek out challenges as one pursues personal interests and goals ([Ryan & Deci, 2000](#)). When individuals are intrinsically motivated, they engage in activities without expecting incentives or rewards. On the other hand, individuals that engage in tasks because of rewards or punishment are extrinsically motivated ([Ryan & Deci, 2000](#)). The development of young children's intrinsic motivation is particularly important as beliefs and practices set early in life shape later behavior. Motivational patterns in older children were already associated with motivational patterns as early as first grade ([Gottfried, 1990](#)). An extrinsic orientation toward learning is characterized by a concern with external reasons for working, such as the judgment of others regarding one's performance, grades, or some anticipated reward. A child has an intrinsic orientation when classroom learning is determined by internal interests and an

extrinsic orientation when classroom learning is determined by external interests such as teacher approval or grades (Harter, 1981).

Maehr and Mayer (1997) reviewed explanation of different experts regarding motivation such as Freud (1946) believed that much of human behaviour was also based on irrational instinctive urges or unconscious motives. Cannon (1936) proposed that basic human drives served homeostatic functions by directing energies toward the reduction of physiological tensions. Behavioral Psychologists, in contrast, stress the importance of external goals in prompting action, while humanistic psychologists examine the role of felt needs, and finally cognitive psychologists have found that a motive sensitizes a person to information relating to that motive: a hungry subject, for example, will perceive food stimuli as larger than other stimuli. One of STD (self-determination theory) components is basic psychological needs that emphasizes on relatedness, competence, and autonomy to accomplish the motivation. It involves the processes that energize, direct, and sustain behavior. It seems that school culture, basic psychological needs, and motivation has immense effect on academic achievement. If students' basic psychological needs fulfill, they will have higher intrinsic motivation, and academic achievement. Intrinsic motivation has an important basic role in SDT, since it shows the individual's tendency to perform behavioral and psychological activities without any external controls and dependencies (Rashvanlou & Hejazi, 2010). In fact, obtaining intrinsic motivation in learning and leading learning through internal guides is one of the main purposes of education (Niemiec & Ryan, 2009).

Roy and Biswas (1997) defined school motivation as a psychological forces (motives, attitudes, etc.) spanning over affective (emotion), cognitive and moral dimensions of behavior that impel students to do school work. The underlying rationale of this multi-dimensional concept depends on the fact that student's experience, in relation to learning, differing types of rewards and punishments. These depends essentially on relationships with others,

developing competences in knowledge and skill, and the feelings derived from living up to the expectations of self and others. Operationally, school motivation is what the school motivation inventory (adapted Bangla version) measures.

Wentzel (1998) reported that different aspects of motivation are subject not only to contextual influences at school but also to socialization practices in the home.

**1.7.2.5 School engagement.** Engagement is associated with positive academic outcomes including achievement and persistence in school and it is higher in classroom with supportive teachers and peers, challenging and authentic tasks, opportunities for choice, and sufficient structure (Fredricks, Blumenfeld, & Paris, 2004). School engagement is an emerging concept that can be defined in different ways in an effort to assess the extent to which school children are involved, connected, and committed to school and motivated to learn and achieve. It is often measured as one aspect of school bonding (Gonzalez-DeHass, Willems, & Holbein, 2005). It is also a malleable state that can be shaped by school context, therefore holding tremendous potential as a locus for interventions (Jimmerson, Campos, & Grief, 2003).

School engagement is a multifaceted and integrative construct, encompassing multiple components, for example, motivational, behavioral, emotional, cognitive characteristics, and agentic (Fredricks et al., 2004; Glanville & Wildhagen, 2007). The motivational dimension of engagement includes the desire to do well. Behavioral engagement often refers to involvement in school-based activities or to the absence of disruptive behaviors (Fredricks et al., 2004). It also relies on the students' persistence, effort, and participation in both school and extracurricular activities. Emotional engagement entails positive emotional reactions to the school, feeling of belonging, the teacher, positive attitudes towards learning, and schoolmates (Siti Nor & Nor Hanida, 2009). Cognitive engagement involves internal indicators such as becoming a self-regulated learner (Fredricks et al., 2004). It also focuses



on the quality of the students' cognitive processes used in school tasks, also covering the self-regulated learning. Finally, the agentic dimension considers the students' active role in their school participation and learning. Behavioral and emotional aspects of school engagement are likely to be predictive of different outcomes and to be influenced by different variables such as intensively disliking school is the primary reason for a student to leave school (Finn & Rock, 1997), participation in school activities leads to positive academic outcomes (Marks, 2000), and emotional bonds with school prevent negative developmental outcomes among adolescents, such as delinquency (Carbonaro, 2005).

School engagement is optimized when students perceive that the school context fulfills their needs for competence, autonomy, and relatedness (Deci & Ryan, 2000). Competence refers to the need to experience oneself as effective in one's interactions with the social environment (Elliot & Dweck, 2005), and a student's need for competence is fulfilled when they know how to effectively achieve desired outcomes (Skinner & Belmont, 1993). Autonomy refers to the extent to which an individual experiences oneself as the source of action. It is supported when a student perceives school work as relevant to his or her interests and goals or when a student experiences choice in determining his or her own behavior (Assor, Kaplan, & Roth, 2002). Finally, relatedness refers to the need to experience oneself as connected to other people (Connell & Wellborn, 1991). Fulfillment of the need for relatedness is likely to occur when teachers and peers create a caring and supportive environment.

In participation-identification model, Finn (1989) has postulated that active participation (behavior) leads to an increased sense of belongingness and to a commitment to learning in students. However, as suggested by Fredricks et al. (2004), it is also possible that emotional engagement leads to increases in behavioral engagement, or in other words, when students feel more attached to school, they are more likely to be involved in school-based activities.

In general, aspects of school engagement are thought to be responsive to contextual and environmental factors, including school climate, classroom environments, and social relations with teachers and peers (Fredricks et al., 2004). School connectedness, school climate, and school adjustment have been shown to be associated with various dimensions of school engagement. Even, peer and parent relations and behavior may also have important effects on school engagement (Barber & Olsen, 2003; Simons-Morton & Crump, 2003). Self-determination theorists suggest that individuals seek experiences that fulfill their fundamental needs and identities through their interaction with the environment. According to this view, student engagement in school is influenced by the degree to which they perceive that the school context meets their psychological needs (Connell & Wellborn, 1991; Deci & Ryan, 2000; Krapp, 2005). Stage-environment fit and expectancy-value theorists (Eccles et al., 1993; Roeser, Eccles, & Sameroff, 1998) further argue that the failure of schools to meet the psychological needs of adolescents often leads to declines in academic motivation and interest, which in turn contributes to decreased school engagement and poor academic performance as adolescents' transition to middle school. Drawing on these theoretical frameworks, school engagement results from an interaction of the individual with his/her context and is responsive to both variations in factors of the school environment and motivational characteristics.

**1.7.2.6 Hopelessness.** In society every individual has dream regarding his future through which he would like to live. Family environment and school environment is one of the crucial social factors which affect the dream, hope of individual especially adolescent students. Hopelessness is the product of a negative belief about future orientation of adolescents considering its conceptualization and measurement. It is the indicator of negative attitudes and feelings against future which are interrelated with thought and attempt of suicide (Bolland, Lian, & Formichella, 2005). In this time of life period, students go through

various emotions, feeling etc. Family and school environment may create positive and negative expectations about future that can affect their lives, cognition, emotion, feelings etc. in a positive and negative way respectively. An individual may have a negative state of mind as a result of such negative feelings. Considering this, hopelessness can be defined as the entire negative belief about future orientation. Even though, it is highly possible to increase the adolescents' hopelessness if the aim of family and school environment is to continuously provide cognitive education. Culture, artistic, sportical activity, feeling of belongingness, affection from family members, interaction with peer groups, teachers, freedom in life etc. may reduce hopelessness of adolescents (Taskesen & Ulucay, 2013). However, it is a motivational factor which reduces motivation level, will to live, joy of life and belief. In fine, family and school environment can influence adolescents' hopelessness in which they feel that it is futile to think about or plan for a future that they may not survive to enjoy. Even these unexpected characteristics, thus, lead to those that life is meaningless, can act to retard or halt this important developmental process, and finally everything will end with death (Taskesen & Ulucay, 2013).

Beck (1988) describes hopelessness about the future is an important component of depression in general and suicidal behavior in particular. He identified three major aspects of hopelessness: feelings about the future, loss of motivation, and expectations. These three aspects describe the respondent's negative attitudes, or pessimism, about the future, suicide attempts etc.

Hopelessness theory of depression (Seligman, Abramson, Semmel, & von Baeyer, 1979) refers to the view that depression-prone individuals make internal, stable, and global attributions to explain the causes of negative events, and external, unstable, and specific attributions about positive events. This attributional style results in the individual taking

personal blame for negative events in his or her life and leads to helplessness, avoidance, and hopelessness about the future, which promotes further depression.

In the light of above definition it can be concluded that hopelessness is the belief and perception of meaningless of life, it increases when belief in future reduce, and an individual may exhibits anti-social activities both against himself and surroundings. [Borchard \(2009\)](#) reported nine types of hopelessness and recommended some strategies to reduce hopelessness which are given below

**1. Alienation (Attachment).** Alienated individuals believe that they are somehow different. Moreover, they feel as if they have been cut loose, no longer deemed worthy of love, care, or support. In turn, the alienated tend to close themselves off, fearing further pain and rejection.

**2. Forsakenness (Attachment & Survival).** The word “forsaken” refers to an experience of total abandonment that leaves individuals feeling alone in their time of greatest need. Recall Job in the Old Testament, crumpled over and covered with sores, pleading with a seemingly indifferent God.

**3. Uninspired (Attachment & Mastery).** Feeling uninspired can be especially difficult for members of underprivileged minorities, for whom opportunities for growth and positive role models within the group may be either lacking or undervalued.

**4. Powerlessness (Mastery).** Individuals of every age need to believe that they can author the story of their life. When that need is thwarted and one feels incapable of navigating one’s way toward desired goals, a feeling of powerlessness can set in.

**5. Oppression (Mastery & Attachment).** Oppression involves the subjugation of a person or group. The word “oppressed” comes from Latin, to “press down,” and its synonym, “down-trodden,” suggests a sense of being “crushed under” or “flattened.”

**6. Limitedness (*Mastery & Survival*).** When the struggle for survival is combined with a sense of failed mastery, individuals feel limited. They experience themselves as deficient, lacking in the right stuff to make it in the world. This form of hopelessness is all too common among the poor as well as those struggling with severe physical handicaps or crippling learning disabilities.

**7. Doom (*Survival*).** Individuals weighed down by this form of despair presume that their life is over, that their death is imminent. The ones most vulnerable to sinking into this particular circle of hell are those diagnosed with a serious, life-threatening illness as well as those who see themselves worn out by age or infirmity. Such individuals feel doomed, trapped in a fog of irreversible decline.

**8. Captivity (*Survival & Attachment*).** Two forms of hopelessness can result from captivity. The first consists of physical or emotional captivity enforced by an individual or a group. Prisoners fall into this category as well as those help captive in a controlling, abusive relationship. We refer to this as 'other-imprisonment'. An equally insidious form of entrapment is "self-imprisonment. This occurs when individuals cannot leave a bad relationship because their sense of self will not allow it.

**9. Helplessness (*Survival & Mastery*).** Helpless individuals no longer believe that they can live safely in the world. They feel exposed and vulnerable, like a cat after being declawed or a bird grounded by a broken wing. Trauma or repeated exposure to uncontrolled stressors can produce an ingrained sense of helplessness. In the words of one trauma survivor, "I was terrified to go anywhere on my own ..., I felt so defenseless and afraid that I just stopped doing anything."

***Overcoming alienation and its offshoots (Alienation, Forsakenness, & Uninspired).*** This form of hopelessness may be fueled by cognitive distortions such as mind reading, overgeneralization, or all-or-nothing thinking. Many who feel alienated assume (wrongly)

that absolutely no one is, or ever will be, in their corner. The antidote for mind reading is to examine the emotional evidence. This requires courage in the form of trust and openness to survey how others actually experience a person. If anybody feel forsaken, it is important to get outside of his/her head to see if their inner reality is an accurate reflection of the outside world. Most people who feel forsaken are over generalizing from a relatively small sample of experiences. With more extensive sampling, it is highly likely that they will encounter more hope-promoting responses from others. The antidote to all-or-nothing thinking is thinking in shades of gray-opening oneself up to the continuum of possibilities for one's life.

***Overcoming Doom and its offshoots (Doom, Helplessness, & Captivity).*** Those who feel doomed as a result of a medical or psychiatric diagnosis may “jump to conclusions.” The best antidote for jumping to conclusions is “examining the evidence.” If anyone is diagnosed with a serious illness, do homework and get the facts.

***Overcoming Powerlessness and its Offshoots (Powerlessness, Oppression, & Limitedness).*** Three cognitive distortions frequently underlie feelings of powerlessness such as discounting the positive, personalization, and labeling. When individuals cannot appreciate their talents and gifts, they are prone to discount any evidence of personal success or effectiveness. Examining the evidence is a good strategy for dealing with discounting the positive. One way to do this is to make a list of successes, particularly in the general domain it is discounting. It is common for those who are oppressed to engage in personalization and self-blame. A strategy for counteracting self-blame is reattribution. This involves considering all the likely causes of negative emotions. When individuals feel limited because of a perceived physical or intellectual disability, they may fall prey to labeling.

***1.7.2.7 Hostility.*** Hostility can be characterized by temporary or stable negative affect towards others (Spielberger, 1988; Robinson, Brower, & Gomberg, 2001). It is one of the components of the AHA (Arthritis, Hives, and Angioedema) syndrome (Johnson, 1990).

Hostility and depression are often correlated. They reflect different constructs and may be separately associated with unhealthy conducts including smoking (Whiteman, Fowkes, & Deary, 1997). There is evidence that depressed adolescents are at heightened risk for hostility and aggressive behavior because they tend to attend selectively to the most negative features of events. Thus, they tend to feel intense, irritated, and hostile (Felsten, 1996; Knox, King, & Hanna, 2000). Hostility has two natures (Bushman, Cooper, & Lemke, 1991; Simourd & Mamuza, 2000).

- 1) Experience of anger: It is identified as neurotic hostility, which is characterized by frequent feelings of anger associated with suspicion, resentment, and the belief that one is often mistreated.
- 2) Expression of anger: It defined as identified as expressive hostility, which is characterized by verbal or physical aggression.

Conventionally, hostility is a three multidimensional construct (Suls & Wan, 1993; Siegler, Peterson, Barefoot, & Williams, 1992) such as cognitive, affective, and behavioural. The cognitive component is defined as negative beliefs about and attitudes toward others, including cynicism and mistrust while the affective component typically labeled as anger refers to an unpleasant emotion ranging from irritation to rage and can be assessed with regard to frequency, intensity, and target. Finally, the behavioral component is thought to result from the attitudinal and affective component and is an action intending to harm others, either verbally or physically.

Hostile people have some crucial characteristics such as they are often stubborn, impatient, hotheaded or have a negative attitude. It keeps blood pressure high and increases chances of having another health problem such as depression, heart attack, stroke, feel anxious and stressed, sad and fatigue etc. Hostile people have more problems with alcohol and drug abuse, smoking and eating disorder. They are being ready for a fight all the time.

They may say that they feel like hitting something or someone. It isolates a individual from other people (Felsten, 1996; Knox, King, & Hang, 2000).

**1.7.3 Family atmosphere.** Family is a single word, with many different meanings. People have many ways of defining a family and what being a part of a family means to them. It differs in terms of economic, cultural, social, and many other facets, but what every family has in common is that the people who call it a family are making clear that those people are important in some way to the person calling them his family. Family can be defined as a group of people related by blood or marriage or a strong common bond, such as those descended from a common ancestor, or a husband, wife, and their children (Rahman, 2013).

There are mainly two types of family: nuclear family and extended family. The nuclear family includes only the husband, the wife, and their unmarried children who are not of age and therefore share living quarters. The extended family contains the nuclear family living together with blood relatives, often spanning three or more generations. The child in a nuclear family interacts only with its parents and siblings whereas in an extended family the child interacts with a vast number of family members. Besides, the child is an active observer of the interactions among all family members and therefore be affected by the complexity of interactions.

According to Roy & Biswas (1997) family atmosphere is a directional force or tendency resulting from interactions of interpersonal relationships among the family members, direction of the personal growth emphasized within the family, and basic organizational structure of the family. From the practical point of view, consensus of individuals (students) characterizing this directional force or tendency constitutes a measure of perceived social climate of family and this climate gets manifested in the family in terms of cohesion, expressiveness, conflict, independence etc. (Moos & Moos, 1981).



In any society, family is the most important socializing agent for a child. The child's interactions with the family members, teachers, friends, and others can play a crucial role in its cognitive and socio-emotional development (McLanahan & Bumpass, 1988). This role can be much more important in a collectivistic society. Both family and school help children get ready to enter school, promotes their school success, and prepares youth for college, to build relationships within families and between families and schools to address childhood problems such as school failure, violence, and delinquency.

Adolescence marks a rapid change in one's role within a family. At this time adolescents are moving towards becoming independent physically, emotionally, and cognitively. A shift from a dependence on parents to increased involvement with peers and others occurs during this period, with the timing of such changes being dependent on the cultural expectations of the environment (Christie & Viner, 2005). In this sense, adolescent relationships with parents move to inter-dependence, resulting in reciprocally supportive and connected networks not just with family members, but also friends, partners, colleagues, and others (Daniel, Wassell, & Gilligan, 1999).

The role of parents in an adolescent's life, however, remains important and is often underestimated (Schofield & Beek, 2009). A growing body of literature indicates that many family-related protective factors such as providing a secure base, being caring, providing a feeling of connectedness and being valued, providing support and giving a sense of belonging are linked to positive outcomes in adolescence and beyond (e.g., Luthar, 2006; Rayner & Montague, 2000). For example, one longitudinal study in the US showed that adolescents who felt highly valued and were able to confide in family members at age 15 had substantially reduced risks for mental illness at age 30 (Paradis, Giaconia, Reinherz, Beardslee, Ward, & Fitzmaurice, 2011). The benefits of parental monitoring and limit-setting are also emphasized within the literature (Luthar, 2006), with poor parental monitoring

clearly linked to negative outcomes in adolescence, such as antisocial behavior, substance use, and sexual risk-taking (Hayes, Smart, Toumbourou, & Sanson, 2004).

Characteristics of family environments such as physical and sexual abuse, neglect, attachment problems, parental mental illness (Larner, 2009; Micucci, 2009) family breakdown, conflict, poor communication, lack of emotional warmth are risk factors for adolescents' adjustment and sound development (Hyde, 2005; Thompson & Pillai, 2006).

In contrast, close relationships with parents can be a protective factor against poor outcomes. Part of this protective relationship is the "secure base" function that parents continue to play in the adolescent years particularly by mothers (Daniel et al., 1999). While the secure base serves a physical and psychological role in early childhood, the emotional, and psychological support offered via a warm and communicative child-parent relationship plays an even more important role in adolescence (Allen, McElhaney, Land, Kuperminc, Moore, O'Beirne-Kelly, & Kilmer, 2003; Schofield & Beck, 2009).

Family environment is still important for adolescent development. It provides a stable and secure emotional environment from which a adolescent to explore and experience the world. This also provides them with somewhere to come back to for reassurance, support, and unconditional love in tough times. A family and its members continue to provide valuable role models for a range of behaviors, including effective communication, relationship skills, and socially acceptable behaviors. The ways in which conflict and disagreements are negotiated within the family are important blueprints for dealing with issues in other arenas.

**1.7.4 School environment.** School is a regular course of meetings of a teacher or teachers and students for instruction and program of instruction. On the other hand, environment means surroundings in which organisms live. It refers to both physical and living environment. So, school environment refers to those school-level variables that relate directly to the school environment, teachers, curriculum coordinators, or principals and also reflect

policies created at the school, district, or community level that impact the entire school faculty, parents, and students.

According to Roy & Biswas (1997) school environment refers to directional force or tendency resulting from interaction of interpersonal relations between the class teacher and students attending the class and among the classmates participating in the class work, directional of personal growth emphasized by the class teacher and basic organizational structure of the classroom. In another view, consensus of students characterizing this directional force or tendency constitute a measure of perceived classroom social climate which gets manifested in the classroom behavior or performance and measured objectivity in terms of cohesion, competition, innovation, involvement, order and organization, rule clarity, task orientation, teacher control, and teacher support (Trickett & Moos, 1973). Operationally, school environment is what the classroom environment scale measures.

School environment or climate is the heart and soul of a school. It is about that essence of a school that leads a child, a teacher, an administrator, a staff member to love the school and to look forward to being there each school day. The climate of school is about that quality of a school that helps each individual feel personal worth, dignity and importance, while simultaneously helping create a sense of belonging to something beyond ourselves. The climate of a school can foster resilience or become a risk factor in the lives of people who work and learn in a place called school (Freiberg & Stein, 1999). School environment is linked to a wide range of physical, psychological, academic, behavioral, recreational, and socio-emotional outcomes for students such as teacher-student relationships, teacher-parent relationships, student relationships, school safety, and fairness and clarity of rules and behavioral expectations, cultural functioning etc. An enabling learning environment is one where children feel secure, feel absence of fear which is governed by relationships of equality and equity.

The [National School Climate Council \(2007\)](#) defines school climate as “norms, values, and expectations that support people feeling socially, emotionally, and physically safe”. School climate is a product of the inter-personal relationships among students, families, teachers, support staff, and administrators. Positive school climate is fostered through a shared vision of respect and engagement across the educational system. Emphasis is also placed on the collective sense of safety and care for the school’s physical environment.

School is a place where the student learns the values of equality, social justice, and respect for diversity, as well as of the dignity and rights of children. Positive school environment is recognized as an important target for school reform and improving cognitive, behavioral, academic, emotional, and mental health outcomes for students. Specifically, schools with positive climates tend to have less student discipline problems ([Cohen & Geier, 2010](#)), aggressive and violent behavior ([Gregory, Cornell, Fan, Sheras, Shih, & Huang 2010](#)), and fewer high school suspensions ([Lee, Cornell, Gregory, & Fan, 2011](#)). Research has also shown associations between school climate and lower levels of alcohol and drug use ([LaRusso, Romer, & Selman 2008](#)), bullying ([Meyer-Adams & Conner, 2008](#)), and harassment ([Attar-Schwartz, 2009](#)). In addition to reducing students’ exposure to risk factors, school climate can promote positive youth development. For example, a favorable school climate has been linked with higher student academic motivation and engagement as well as elevated psychological well-being ([Shochet, Dadds, Ham, & Montague, 2006](#)). Not surprisingly, schools promoting engaging learning environments tend to have fewer student absences, and improvements in academic achievement across grade levels ([Stewart, 2008](#)). A favourable and positive school climate also has benefits for teachers and educational staff.

Research shows that when educators feel supported by their administration, they report higher levels of commitment and more collegiality ([Singh & Billingsley, 1998](#)). Likewise, schools where educators openly communicate with one another, feel supported by their peers

and administration, and establish strong student-educator relationships tend to have better student academic and behavioral outcomes ([Brown & Medway, 2007](#)).

Scientists approach the understanding of adolescence from different theoretical perspectives or points of view. There are several such theories as discussed below. Each of these theoretical perspectives is based on particular assumptions to explain adolescent development, but, no one single theoretical perspective covers all aspects of adolescence. These are

### **1. The biological-maturation theories**

[Hall \(1904\)](#) is pioneer of this theory. He assumes that adolescence begins with the biological changes accompanying puberty. It is from this assumption that earlier views of adolescence assumed a direct link between biological factors and psychological development. Influenced by [Darwin's \(1859\)](#) evolutionary theory, [Hall \(1904\)](#) argued that each person's psychological development recapitulates (or recaptures) both the biological and cultural evolution of the human species. Hall views adolescence as a turbulent time charged with storm and conflict.

### **2. The environmental theories (Social learning and constrictivist)**

[Bandura \(1999\)](#) is a leading social learning theorist has pioneered the view that cognition (act of knowing), bearing (social conduct), and environment play a primary role in human behavior. Bandura has observed that much of adolescent behavior comes from observational learning, in which adolescents observe and imitate the behavior of their parents, other adults, and peers. Furthermore, adolescent learning and behavior are significantly affected by cognitive variables such as competences, encoding strategies, expectances, personal values, and self-regulatory systems etc.

### **3. Cognitive theory**

Piaget's cognitive development theory and the information processing view are two main cognitive theories ([Piaget, 1970](#)). Piaget defines adolescence as a stage of transition from the use of concrete operation to the application of formal operation in reasoning. This clearly

distinguishes it from puberty which is the period in adolescence which is characterized by physiological changes that end childhood and bring the young person to adult size, shape, and sex potential. [Havigurst \(1973\)](#) combines the individual's readiness for learning with certain social demands in defining the eight developmental tasks of adolescence.

#### **4. The psychoanalytic theories**

[Freud \(1974\)](#) regarded childhood as the most formative periods of human development. In other words, he believed that the dynamics of personality depend largely on how the sexual instinct and the ego and superego have been shaped during the formative years of childhood. In the three dimensional or tripartite model of the mind the ID which is biological is the subconscious (that part of the mind of which one is not aware but which can influence one's behavior) part of the personality or in other words it upholds or represents the pleasure principle. Central to Freud's psychoanalytic theory is the assumption that human beings have a powerful drive that must be satisfied. As biological creatures, there is a drive in individuals to satisfy or serve these motives, yet society dictates that many of these urges are undesirable and must be retained or controlled. Freud further added that people are unaware that the biological instincts are the driving force behind behaviors. Similarly, [Freud \(1974\)](#) believed that adolescence is a special period of turbulence because of the sexual conflicts brought in by puberty. [Erikson \(1968\)](#) who also subscribes to the psychoanalytic theories of adolescent development emphasized on eight developmental stages. [Santrock \(1990\)](#) emphasized on the past, the developmental course of the environment, unconscious mind, and emphasis on conflict.

#### **5. The cultural-context theories**

[Mead \(1928\)](#) implored as to whether adolescence is a biologically determined period of storm and stress as advocated by [Hall \(1904\)](#) or simply a reaction to social and cultural conditions. In a bid to resolve the controversy [Mead \(1928\)](#) conducted research in Pago-

Samoa in the West Indies in 1925. The goal of her research was to determine whether adolescent turmoil was a universal product of puberty, and hence biologically determined, or could be modified by culture. In the research she conducted, it was conclusively established that the disturbances which vex our adolescents are ontological or culturally specific and not universal. In essence they are a product of civilization (Muuss, 1996).

A child in its early relationship with parents learns to deal with other people and manage its own cognitive-emotions. Because childrens' cognition and behaviors can be affected by the interpersonal relationships among the family members. The interpersonal relationship or marital adjustment between the parents and their affect in particular, can play key role in children's all kinds of development including cognition, emotion, moral, cultural, and social. Although children at adolescence sometimes give more importance to their peer group than family and school, but both family and school have strong influence over them. Berndt (1979), and Young and Ferguson (1979), for example, found that although both sexes are highly peer oriented, males and females at different times in adolescence are influenced by their parents.

Richer (2006) reported that longitudinal studies in both developed and developing countries and better measurements of adolescent behavior are producing new insights. The physical and psychosocial changes that occur during puberty make manifest generational and early-childhood risks to development, in the form of individual differences in aspects such as growth, educational attainment, self-esteem, positive family and school influences, good nutrition and healthy lifestyle, peer influences, and closeness to family. Multidisciplinary approaches, especially links between the biological and the social sciences, as well as studies of socioeconomic and cultural diversity and determinants of positive outcomes, are needed to advance knowledge about this stage of development.



Unidirectional models that assume that hormones cause behavior (for example, that testosterone causes aggression) or that behaviors cause hormone change (for example, that stress increases cortisol levels) have given way to models of hormone/behavior interactions and theories that take context into account (Dockray, Dorn, & Susman, 2009). For example, poor attachment, family discord, and low investment in children are believed to affect the timing of puberty onset (Belsky, Steinberg, & Draper, 1991). In turn, the combination of these stressors and early puberty contributes to conflict with parents (Steinberg & Hill, 1978), lower self-esteem (Williams & Currie, 2000), and associations with deviant peers (Haynie, 2003). Neurophysiological and brain imaging studies have demonstrated brain reorganization during adolescence coincident with the onset of puberty, which may make adolescents more sensitive to experiences that affect their judgment (Blakemore & Choudhury, 2006).

Most adolescents don't go through a period of " Sturm und drang." Adolescents are creative, energetic, and challenging. Despite the negative portrayals and negative attitudes about adolescents, the picture of adolescents today is largely a very positive one. Most adolescents in fact succeed in school, are attached to their families and their communities, and emerge from their teen years without experiencing serious problems such as substance abuse or involvement with violence. Longitudinal studies are demonstrating that adolescence is also an age of opportunity: Good nutrition and healthy lifestyle, positive family and school influences, and access to supportive services, among other factors, can help young people break early patterns leading to ill health and poor social adjustment, with benefits for adult well-being and the next generation of children and youth (Richter, 2006). However, we still know a lot more about what goes wrong in adolescence and why, and a less about how to prevent problems and how to get young people back on track, which factors are playing role behind the maladjustment of adolescents behavior especially in those areas of the world in which young people face the greatest challenges.

## **2.1 Adolescents' cognitive emotion regulation and its relationship with family environment and school environment.**

Emotion regulation is essential to socialization and is dependent on the culture one lives in as well as the specific social context of the situation. Two popular models that explain cognitive emotion regulation are: Gross's process model and social cognitive neuro-imaging model of cognitive-emotion regulation. These models are described below.

### **1. Gross' process model**

A process model of emotion regulation shows how specific strategies can be differentiated along the timeline of the unfolding emotional response (Gross, 1998a; 1998b). The fundamental claim of this model is that emotion regulation strategies differ in when they have their primary impact on the emotion-generative process. At the broadest level, it can be drawn a distinction between antecedent-and response-focused emotion regulation strategies. Antecedent-focused strategies refer to things we do before the emotion response tendencies have become fully activated and have changed our behavior and peripheral physiological responding. An example of antecedent-focused regulation is seeing a school admission as an opportunity to learn more about the school, rather than as a pass-fail test. Response-focused strategies refer to things we do once an emotion is already underway, after the response tendencies have been generated. An example of response-focused regulation is keeping one's anxiety from showing as one leaves a child at kindergarten for the first time.

According to this model (Gross, 1998b; 2001), emotion may be regulated at five points in the emotion generative process, such as selection of the situation, modification of the situation deployment of attention, change of cognitions, and modulation of experiential, behavioral, or physiological responses. How much a student would regulate his emotion depends on successfully controlling of these five points. Among them, the first four are antecedent focused, and the fifth is response focused.

## 2. Social cognitive neuro-imaging model of cognitive-emotion regulation

Current cognitive neuroscience models posit that cognitive control involves interactions between regions of prefrontal cortex that implement control processes and subcortical and posterior cortical regions that encode and represent specific kinds of information (Knight, Staines, Swick, & Chao, 1999; Miller & Cohen, 2001; Smith & Jonides, 1999). By increasing or decreasing activation of particular representations, prefrontal regions enable an individual to selectively attend to and maintain goal-relevant information in mind and resist interference from irrelevant information (Knight, et al., 1999; Miller & Cohen, 2001; Smith & Jonides, 1999). In general, fMRI (Functional Magnetic Resonance Imaging) studies examining emotion processing and regulation as it relates to the amygdala have treated it as single unit. Even, specific amygdala nuclei has distinct functions that result from varying interactions with cortical and subcortical regions. Two major amygdala subregions are the Basolateral Amygdala (BLA) and the Centromedial Amygdala (CMA). In adult and animal studies both the BLA and CMA play a pivotal role in numerous emotion-related functions. Specifically, the CMA is thought to be critical for controlling the expression of fear (Qin, Young, Supekar, Uddin, & Menon, 2012) whereas the BLA is thought to play a critical role in perception, appraisal, and regulation of emotionally salient stimuli (Kim, Loucks, Neta, Davis, Oler, Mazzulla, & Whalen, 2010a).

According to this, the superior temporal gyrus, angulargyrus, and (pre) supplementary motor areas should be involved in execution of regulation initiated by frontal areas. The dorsolateral prefrontal cortex may be related to regulation of cognitive processes such as attention, while the ventrolateral prefrontal cortex may not necessarily reflect the regulatory process, but signals salience need to regulate. As per of this model, a cluster in the anterior middle cingulate cortex as a region, which is anatomically and functionally in an ideal position to influence behavior and subcortical structures related to affect generation. This

area may play a central, integrative role in emotion regulation. By focusing on regions commonly active across multiple studies (Knight, et al., 1999) provide important a priori information for the assessment of dysregulated emotion regulation in psychiatric disorders.

Emotion regulation develops during the stages of childhood, adolescence, and adulthood. But in the present study we are particularly interested in how it develops during adolescence. As adolescents grow they also learn how to regulate emotions which has both positive and negative impacts on their relationships with family, neighbors, and friends. However, we still do not know enough (particularly in the context of Bangladesh) about the role of school and family environment in its development. Studies have shown that preschool-age children exposed to authoritarian parenting have been found to be unhappy, dissatisfied, apprehensive, fearful, socially inhibited, aggressive, and experience difficulty in regulating emotions (Baumrind, 1967; Hart, Nelson, Robinson, Olsen, & McNeilly-Choque, 1998).

In all stages of life, people have to deal with a wide range of stressors and challenges to adapt to the world. Especially, the period of adolescence forms an important stage in the development of cognitive coping skills as this is the period in which the more advanced cognitive abilities are being mastered (Aldwin, 1994). A child in its early relationship with parents learns to deal with other people and manage its own emotions. Feelings of pain and stresses may emerge in every area of interactions in child's life and in these situations children usually manage to deal with that problem according to what they learn from their parents. That is, children acquire skills and competence necessary to regulate emotions after experiencing any threatening event simply through parent child interactions.

Karim, Sharafat, and Mahmud (2013) conduct a study on 206 school children to investigate whether cognitive emotion regulation in children varies with parenting style, family type, and gender. They found that children's cognitive emotion regulation is functionally associated with parenting style, but not with family type and their gender.

Amongst three types of parenting, authoritative parenting was the strongest predictor of the overall adaptive emotion regulation while authoritarian parenting was the strongest predictor of the overall less adaptive emotion regulation. Permissive parenting has impact neither on adaptive nor on less adaptive emotion regulation. Other studies have shown that authoritarian parenting is positively associated with the child's negative outcomes (Peterson & Hann, 1999; Stafford & Bayer, 1993) and negatively with the positive outcomes such as self-esteem (Buri, Kirchner, & Walsh, 1987).

Experts reported that (e.g., Zlomke & Hahn, 2010) children's cognitive emotion regulation strategy varies with gender. For example, in American culture, women reported utilizing rumination and putting into perspective in stressful situation more than men whereas men reported blaming others more than women. In another study, American women scored higher on rumination, catastrophizing, positive refocusing, refocusing on planning and positive reappraisal whereas American men scored higher on blaming others (Martin & Dahlen, 2005). Likewise, Dutch women reported to use rumination, catastrophizing, and positive refocusing more often than Dutch men (Garnefski, Teerds, Kraaij, Legerstee, & van den Kommer, 2004). So, the above findings reflect cultural differences suggesting that gender is important in a collectivistic society to determine which strategies adolescents will employ to control their emotions. Instead, the crucial factor is the experience they receive in their family, e.g., how they are reared up by their parents and other family members.

Ansary and Karim (2011) showed that parents' marital adjustment was strongly and positively associated with the children's overall adaptive emotion regulation, but negatively with their overall less adaptive emotion regulation. Furthermore, fathers' positive affect was strongly and positively associated with the children's overall adaptive, but negatively with their overall less adaptive cognitive emotion regulation. On the other hand, mothers' positive affect was strongly and negatively associated with the children's overall less adaptive

emotion regulation, whereas their negative affect was positively associated with it. Thus, parents' marital adjustment and affective states were identified as good predictors of children's cognitive emotion regulation. [Garnefski et al. \(2001\)](#), reported that people who adopt adaptive strategies report fewer depression and anxiety symptoms than people who use less adaptive strategies.

According to [Gross and John \(2003\)](#) individuals differ in their use of emotion regulation, experience and expression of emotions. By implication, emotion regulation strategies that are effective for one person may not be so for another. However, there may be some strategies that are universally effective. For example, [Prizmic \(2000\)](#) found in his study that cognitive reappraisal strategies, such as a student re-evaluating the meaning of a task, have been correlated with more positive emotions; whereas passive strategies, such as distraction or avoidance correlated with more negative emotion after use, while [Gross and John \(2003\)](#) found cognitive strategies in general were more effective than strategies aimed at regulating the bodily affects of emotion.

In one study it was found that expressive environments positively develop the emotion regulation capacity of the individual ([Eisenberg, Cumberland, & Spinrad, 1998](#)). Children who are more skilled at using emotion-related language and understanding emotional experiences may be better at regulating their own arousal during distressing situations. Students from expressive families were found to be less likely than others to use response-focused strategies ([Fried, 2010](#)). It may be that expression of emotions acts as an early regulation strategy, relieving the need to employ strategies at a later stage. Although not supported by a sufficient data base, the discussion of emotional experience in the classroom could help shape the development of student emotion regulation strategies, or itself act as an emotion regulation strategy ([Weare, 2004](#)).

However, there are studies demonstrating that family type can facilitate or limit cognitive emotion regulation of adolescents the ways in which parents are able to positively influence the outcomes of their children (Amato, 2001; Sigle-Rushton & McLanahan, 2002). As demonstrated by Amato, for example, children coming from divorced families have more difficulties in school, more behavior problems, more negative self-concept and more trouble getting along with their parents. Children with divorced parents continued to score significantly lower on measures of academic achievement, conduct behavior, psychological adjustment, self-concept, and social relations (Amato & Keith, 1991). Children who live with a single mother family fare poorly across a wide range of adolescent and adult outcomes, including educational attainment, economic security, and physical and psychological well-being (Sigle-Rushton & McLanahan, 2004). Thus, whether family type is important for the child's emotional or other psychosocial development depends.

Researchers have shown that feelings of belonging or affiliation created through the family or school environment are associated with perceptions of control, self-regulation, motivation (Baumeister, DeWall, Ciarocco, & Twenge, 2005), academic achievement and development of basic psychological processes important to student success (Osterman, 2000). One of these "basic psychological processes" that Osterman links to belonging is internalization. This is explained as student ability to assimilate external regulation into the self. Students who experience internalization are able to rely on their own regulation, or self-regulation, rather than looking to external forces. Students with strong feelings of family cohesion, which can enhance a sense of belonging, were more likely than others to use emotion regulation strategies (Fried, 2010). However, school affiliation did not show significant correlation with student emotion regulation strategy use.

Teacher support is also influences emotion regulation development in the classroom environment. A variety of researches have shown that when students feel emotionally and

academically supported by their teacher, they are more likely to use self-regulated learning strategies (e.g., Ryan & Patrick, 2003), and student perception of teacher support has a direct effect on how motivated and interested students feel in the classroom (e.g., Wentzel, 1998). In teacher support made a significant contribution to the prediction of the use of antecedent emotion regulation strategies (Fried, 2010). Evidence suggests that students are more successful and happier at school if they are encouraged to be autonomous; the degree of autonomy allowed depends on the student's stage, age, personality, and attitudes (Wubbels, Brekelmans, & Hooymayers, 1991).

A classroom environment that presents opportunities for meditation and mindfulness, with their focus on attention, may also enhance student emotion regulation development. Mindfulness has been defined as the process of drawing distinctions between things thus enabling one to be situated in the present (Langer, 2000). According to Ekman (2004), mindfulness involves the method of focusing on automatic biological processes such as breathing, which induce well-being and a state of calm and promote the ability to be more aware of, and regulate emotions. Thus, mindfulness is a heightened state of awareness and involvement (Langer, 2000). So, emotion and emotion regulation of student and teacher are influenced by the emotional climate of the school as well as the principals, teachers, and parents with whom they interact (Hargreaves, 2000).

Researchers have come to realise that emotion regulation has a valuable place in the classroom. Emotion regulation enables the individual to have some control over his or her behaviour (Melnick & Hinshaw, 2000) and remain engaged with the environment. Regulation also enables students and teachers to avert/avoid negative emotions and enhance positive emotions. The employment of emotion regulation strategies can maintain individual well-being and improve interpersonal functioning (Gross & John, 2003). Therefore, emotion regulation strategies will also affect a student's ability to learn and function at school. A



limited amount of classroom research has indicated that students who regulate their emotions are more successful at learning tasks (Boekaerts, 2003). Gumora and Arsenio (2002) found that early adolescents' emotion regulation and general affective dispositions made a significant contribution to academic achievement over and above the influence of other cognitive contributors.

Linnenbrink and Pintrich (2000) has focused that emotions are not only based on cognitive processes but also on motivational processes. For example, negative emotions can reduce working memory, the memory system used for holding and manipulating information while various mental tasks are carried out (Linnenbrink & Pintrich, 2000) and, in reverse, tasks that load working memory capacity can clear the mind of negative feelings (Van Dillen & Koole, 2007). Positive emotion can broaden thought-action repertoires (Fredrickson, 2001), suggesting that students and teachers who experience more positive emotions may generate more ideas and strategies. In addition, emotions can have an impact on different cognitive, regulatory and thinking strategies (Pekrun, 1992). For example, negative emotions lessen the probability that students will use cognitive strategies for deeper, more elaborate processing of information (Linnenbrink & Pintrich, 2000). Emotions also affect categorizing, thinking, problem solving, and attentional processes (Sutton & Wheatley, 2003).

Sinha and Mukerjee (1990) stated that children's cognitions and behaviours can be affected by the interpersonal relationships among the family members. The interpersonal relationship or marital adjustment between the parents and their affect in particular, can play a key role in children's all kinds of development including the emotional. A number of empirical studies clearly suggest that marital adjustment between parents' affect parent-child interactions. For example, child and family mental health professionals have long believed that the quality of the parents' marital relationship influences their children's functioning (Webster-Stratton & Herbert, 1994).

From the above research findings it can be seen that few studies have examined the nature of family and school environment and their relationships with cognitive emotion regulation. So, more research needs to be conducted on the concept of family and school environment and its relationship with cognitive emotion regulation.

## **2.2 Adolescents' emotional intelligence and its relationship with family environment and school environment**

After the publication of [Goleman's \(1995\)](#) best-selling book 'Emotional Intelligence' the term drew attention of numerous psychologists, sociologists, business, community etc. for study. Emotional intelligence has a great importance in terms of ensuring social and universal unity. Today in many countries around the world it draw attention that social relationships have been declining and individualism has been arising in parallel with the rapid development of technology and increase in competition trend. Besides the necessity of emotional understanding and control has arisen in order to each individual accepts and works in cooperation with an individual from another culture. As a result, in recent years the research and programs regarding emotional intelligence are attracting scholars ([Alegre, 2011](#)). Currently, there are four main models of EI: ability model, mixed model, trait model, and Bar-On model.

### **1. The ability model**

[Mayer's and Salovey \(1997\)](#) proposed this model and defined emotional intelligence as the ability to perceive emotion, integrate emotion to facilitate thought, understand emotions and to regulate emotions to promote personal growth, the capacity to reason about emotions, and of emotions, to enhance thinking. It includes the abilities to accurately perceive emotions, to access and generate emotions so as to assist thought, to understand emotions and emotional knowledge, and to reflectively regulate emotions so as to promote emotional and intellectual growth ([Salovey, Mayer, & Caruso, 2004](#)).

This model views emotions as useful sources of information that help one to make sense of and navigate the social environment such as family, organization, school, peer groups etc. (Mayer's & Salovey, 1997). The model proposes that individuals vary in their ability to process information of an emotional nature and in their ability to relate emotional processing to a wider cognition. This ability is seen to manifest itself in certain adaptive behaviors. The model claims that EI includes four types of abilities (Mayer, Salovey, Caruso, & Sitarenios, 2001) such as perceiving emotions, using emotions, understanding emotions, and managing emotions.

## **2. The mixed model**

The model introduced by Goleman (1998) focuses on EI as a wide array of competencies and skills that drive leadership, positive emotional adjustment, performance etc. Goleman's model outlines five main EI constructs such as self-awareness, self-regulation, social skill, empathy, and motivation. Goleman includes a set of emotional competencies within each construct of EI. Emotional competencies are not innate talents, but rather learned capabilities that must be worked on and can be developed to achieve adjustment, outstanding performance etc. Goleman posits that individuals are born with a general emotional intelligence that determines their potential for learning emotional competencies (Boyatzis, Goleman, & Rhee, 2000).

## **3. The trait model**

Petrides (2001) proposed a conceptual distinction between the ability based model and a trait based model of EI and has been developing the latter named trait. According to this model, emotional intelligence refers to an individual's self-perceptions of their emotional abilities. This definition of EI encompasses behavioral dispositions and self-perceived abilities and is measured by self report, as opposed to the ability based model which refers to actual abilities, which have proven highly resistant to scientific measurement (Petrides, Pita,

& Kokkinaki, 2007). The trait EI model is general and subsumes the Goleman model discussed above. The conceptualization of EI as a personality trait leads to a construct that lies outside the taxonomy of human cognitive ability.

#### **4. The Bar-On model**

This model (Bar-On, 1997) defined emotional intelligence as being concerned with understanding oneself and others, relating to people, and adapting to and coping with the immediate surroundings to be more successful in dealing with environmental demands.

Manuel (2002) has carried out a study on the effects of parents on emotional intelligence among 109 young people (between the ages 11 and 15). Along with emotional intelligence, effects of families on some other dimensions like responsibilities, social functions, and symptoms of depression have also been studied. Upon the assessment carried out by Path analysis technique, it has been determined that parent models with methods like encouraging, giving rewards and guiding have crucial effects on matters of emotional intelligence, social activities, and symptoms of depression.

In a study conducted by Zhiwei, shaowen, and ve Xuerong (2000) on 4th and 5th class students in an aim to see the relationship between problem behaviours, academic successes of children, and family environment. It was seen that children, who can understand emotions correctly avoid aggressive behaviours, establish more positive relations with their peers and other persons around them and they are accordant in their school and social life (Hughes, Dunn, & White, 1998).

Morris, Silk, Steinberg, Myers, and Robinson (2007), reported that family environment affects children's emotional intelligence in three aspects. Firstly, children learn emotions by observing the people around them. Secondly, their experiences and behaviors related to parent's emotions ensure children to become appropriate to society's expectations. Thirdly, factors reflecting the emotional status of family such as the quality of emotional attachment

between the child and the parents, attitude of parents, emotional and social openness, and marital relationship have impacts on emotional intelligence.

There is a significant relation between emotional intelligence with successful management, social competence, and good leadership. In one study it was seen that individual's being aware of his own and the other emotions and the successful management of them are called that person's emotional and social competence (Goleman, 2006). The important key element of one administrator's being effective on management processes is his capacity of emotional and social competence. Leaders aware of their own emotions and manage them, by more easily controlling themselves and having confidence and respect of others can be a role model. Besides, leaders understand others emotions, grasp their expectations and sensitivity and can be a source of inspiration. Leaders give importance to people and have relationships with people both in the group and reciprocally can manage their relationships effectively (Barling, Slater, & Kelloway, 2000).

From the study of Nixon and Watson (1999) it was seen that there is a relationship between understanding the negative emotions of children and family experiences to some extent. They determined that experiences within the family are connected with the first emotional experiences. The study was conducted to see the relationship between individual differences and family experiences of 40-75 month children on becoming aware of their emotions and making assessments on their emotional capacities. They have also found out that introverted children with high level of cognitive intelligence are influenced more by the family environment compared to extroverted children with low intelligence.

Rice, Cunningham, and Young (1997) studied the association of parental attachment bonds to emotional adjustment mediated by social competence. Relational variables were expected to be more important in the development of social competence and emotional adjustment for Black students than for White students; there were no directional hypotheses

for gender differences. Gender of parent differences emerged, in which attachment to father generally was a better predictor of social competence than was attachment to mother. In all analyses, social competence was a significant predictor of emotional adjustment.

[Goleman \(1995\)](#) asserted that success depends on several intelligences and on the control of emotion. According to him intelligent account for only 20% of the total success, and the rest goes for emotional and social intelligences. [Abisamra \(2000\)](#) then queried that if this is found to be so, why the teachers don't begin to teach its components (e.g., emotional intelligence) to students at schools? He then concluded that if emotional intelligence affects student achievement, then it is imperative for schools to integrate it in their curricula and thereby raising the level of students' success.

[Alegre \(2011\)](#) reported four main dimensions of parenting are identified that are relevant to the study of emotional intelligence: parental responsiveness, parental positive demandingness, parental negative demandingness, and parental emotion-related coaching. Parental responsiveness, parental emotion-related coaching, and parental positive demandingness are related to children's higher emotional intelligence, while parental negative demandingness is related to children's lower emotional intelligence. [Thompson \(1998\)](#) indicates that children, who have positive relations with parents and argue the emotions of others, have a better understanding of emotions when compared with others. Children learn emotions from their parents' speeches and enhance their emotional intelligence through the bond they attached with their parents.

[Eisenberg, Fabes, and Murphy \(1996\)](#) examined the relations of mother's and fathers' reported emotion related practices to parents' and teachers' reports of 3rd-6th grade children's social skills, popularity, and coping; as well as the quantity and quality of children's comforting of an infant. The findings showed that although fathers reported fewer problem-focused reactions with socially competent daughters. Emotion-focused and problem-

focused maternal reactions as well as encouragement of the expression of emotion were associated with boys' comforting behavior, although a moderate level of maternal encouragement of the expression of emotion was associated with quality of girls' comforting.

In several studies it was found that emotional intelligence has positive relationships with family size (Morand, 1999), family climate (Kaur & Jaswal's, 2005), and family hardiness (Chan, 2005). There are some studies (such as Hanafi, Mohd, Yasin, Bari, & Salubin, 2012) on emotional intelligence of deaf and hard hearing of people. For example: The study of on deaf children showed significant relationship between level of emotional intelligence with the level of academic achievement and level of behavioral problems. Again, Cambra (2006) showed in his study that emotions and feelings in deaf teenagers meaningfully determined by the degree of hearing loss, gender and age and caused meaningful differences which posed the needs for academic-social programs about keeping friendly relations and awareness of the social environment. Even, the results of Farrugia and Austin's (1980) study indicated that deaf students in residential schools and hearing students in public schools were the most similar in all areas of development.

In recent times therefore, scientists are beginning to uncover the relationship of emotional intelligence to other phenomenon such as leadership (Ashfort & Humphrey,1995); group performance (Williams & Sternberg,1988); academic achievement (Abisamra, 2000); and policing (Aremu, 2005). As a matter of fact, emotional intelligence (EI) has recently attracted a lot of interest in the academic literature.

In a recent studies conducted by Parker, Summerfeldt, Hogan, and Majeski (2002) discovered that various emotional and social competencies were strong predictors of academic success. In the same vein, Low and Nelson (2004) reported that emotional intelligence skills are key factors in the academic achievement and test performance of high school and college students respectively. Cotton and Wikelund (2005) argued that any

investigation of the potential effects of emotional intelligence on academic performance must be pursued in a specific context. In essence, the importance of emotional intelligence on academic achievement has been found to be very significant.

[Han & Johnson \(2012\)](#) did a study for investigation the relationship between students' emotional intelligence, social bond, and their interactions in an online learning environment. The results showed that students' ability to perceive emotion by facial expression was negatively related to the number of text and audio messages sent during synchronous interaction. Additionally, the ability of students to perceive emotion was positively related to peer bonding. Lastly, students' bond to their online program was associated with management type interaction during synchronous discussion sessions.

The earlier literature ([Bass, 1998](#); [Goleman, 1998a](#)) proposes that EI contributes to effective and functional leadership. This finding is consistent with [Barbuto and Burbach \(2006\)](#), who found several correlations that reinforce the role of EI and leadership in areas of motivation, empathy, interpersonal skills, and mood regulation. Linking EI to leadership is a well researched topic; however, the next step is to understand school climate theory and how the EI of school leaders may be related to school climate. It was also seen that EI is a factor in the climate of successful companies.

It is emphasized in the studies that the family environment is highly important in the emotional and social development of the child. Emotional processes are affected by the family environment much. But, from the above literature it has been observed that almost no integrated research has been done on the importance of family and school environment with emotional intelligence. Even, the research between family environment and emotional intelligence is very much scarce. So, in spite of the studies reviewed, there is still a need to further investigate the relationship of emotional intelligence with family and school



environment. These matters lead the present researcher to see the combination effect of family and school environment on adolescents' emotional intelligence.

### **2.3 Adolescents'future aspiration behavior and its relationship with family environment and school environment.**

The Dominant Model stresses aspiration as a cognitive state that motivates or drives adolescents to strive for academic success (Khoo & Ainsley, 2005). The model recognizes that both personal dimension (e.g., the impact of others or students perception of their own personal attributes) and social dimension (e.g., quality of schooling or parental social class) are important transmitting factors. Parents, in particular, have been seen as the most significant in shaping aspirations because they provide the opportunities, encouragement, and support for their children's learning (Garg, Kauppi, Lewko, & Urajnik, 2002). However in economic models, the problem of educational aspiration is viewed from a different perspective. They portray educational aspiration as a purely rational assessment of students' economic and social circumstances.

There are many theories of motivation which has an influence on aspirations. These are:

#### **1. Kurt Goldstein's theory**

According to this theory (Goldstein, 1971) an individual's self-actualization depends on their aspiration. At any moment, the organism has the fundamental tendency to actualize all its capacities, its whole potential, as it is present in exactly that moment in exactly that situation in contact with the world under the given circumstances. So, if an individual has an aspiration, he or she has "the tendency to actualize, as much as possible, to the individual capacities.

#### **2. Behavioral approach to motivation**

According to Behaviorist (such as Jex & Britt, 2008) if an individual's get different types of reinforcement such as praising, compensation, feedback, and other reward programs for

their work from family, teachers, peers, and others, then, it leads them to make up of positive future aspiration and improve their performance. On the other hand, punishment decreases positive future aspiration. In general, the less time that elapses between a behavior and its consequence, the more impactful a consequence is likely to be.

### **3. Maslow's hierarchy on needs**

Maslow (1943) felt that it gave the individual a desire, or motivation to achieve budding ambitions. Each individual is motivated to work towards actualizing their aspiration or ambitions. All of Maslow's subjects reported the frequent occurrence of peak experiences (temporary moments of self-actualization). These occasions were marked by feelings of ecstasy, harmony, and deep meaning.

### **4. Goal setting theory**

Experts of this theory (such as Straw & Boettger, 1990; Latham & Pinder, 2005) depicts that if a person has a personal or organizational goal which is proximal and that leads to actualizing an aspiration, they will be motivated to work towards actualizing those goals. It can be a personal goal based task of getting a credit card, to an organization goal of based task of filling a timesheet.

Expert reported (Watson, Quatman, & Edler, 2002) that adolescent period is a ideal time to study the aspiration, goal, and career development of young women and men as many changes occur during this time that strongly influence the formation of career aspirations and preferences. Future aspiration represents an individuals' orientation toward a desired career goal under ideal conditions. Aspiration are influenced by several factors as reported by Khallad (2000), Watson, Quatman, and Edler (2002) such as gender, socio-economic status, race, parents' occupation and education, parental expectations, school environment etc. Again, Garg, Kauppi, Lewko, and Urajnik (2002) identified three groups of factors of educational aspiration: background factors, personal factors, and environmental factors.

Background factors comprised of social and demographic attributes such as age, gender, socio-economic status, and family structure. The personal factor is psychological in nature and is composed of an individual's personal attitude towards education, school, and work. The environmental factors include aspects of social support as parental involvement, affecting the individual. The influence of these factors is well documented in the literature.

Gender is clearly one of the most powerful of all influences on vocational behavior. Studies on gender and career aspirations in the 1970s revealed girls had more restricted career aspirations than boys, and girls often opted for a narrow range of occupational categories (Looft, 1971a; Mendez & Crawford, 2002; Wahl & Blackhurst, 2000). Additionally, Heins, Hendricks, & Martindale (1982) reported that families often encouraged the educational and career aspirations of male children but not those of female children. Replications in the 1980s of earlier studies showed girls had broadened their career preferences, yet their expectations for career attainment remained low, especially for high status, traditionally male jobs (Wahl & Blackhurst, 2000). Recent studies refuted earlier findings and asserted that females demonstrated an interest in a greater number of careers and displayed more gender-role flexibility in their career aspirations than males (Francis, 2002; Mendez & Crawford, 2002). However, Watson, Quatman, & Edler (2002) noted adolescent females were more conflicted between their future careers and commitment to marriage and family.

In a study of Wahl and Blackhurst (2000) revealed children's career aspirations were more closely related to parental occupations. Among adolescent females in particular, career choice was strongly influenced by the mother's occupation (Burlin, 1976; Wahl & Blackhurst, 2000). The mother's occupation was credited with impacting children's aspirations because children often attended work with their mothers and were more likely to know what their mothers did for a living. Likewise, Burlin (1976) deduced career choices and

aspirations in females were significantly predisposed by the mother's type of work, educational achievement (Signer & Saldana, 2001).

In one study (Mau & Bikos, 2000) it has been found that there is a positive association between a family's socioeconomic status and aspirations. Youth from higher socioeconomic statuses were more likely to be knowledgeable of and choose professional occupations. In contrast, Brown and Barbosa (2001) found career aspirations of young females who came from low-income families were confined to experiences of their relatives and friends. Studies show a positive association between high school students' aspirations and their family's socioeconomic status, which is frequently related to parental education levels (Mau & Bikos, 2000; Signer & Saldana, 2001). Trusty (2002) indicated that a low socioeconomic status resulted in reduced and unrealized expectations. Additionally, socioeconomic status had a direct effect on unequal aspirations and expectations. Compared with middle and upper class individuals, lower class individuals faced more obstacles that limited their career aspiration levels (Gottfredson, 1981; Farmer, 1985).

Trusty (1998) did a study on U. S. adolescents reported that the strong influences of socioeconomic background on adolescents' educational expectation are parents' education, occupation, and family income. Geckova, Tavel, Dijik, Abel, & Reijneveld (2010) explored the association between health, socioeconomic background, school-related factors, social support and adolescents' sense of coherence, and educational aspirations among adolescents from different educational tracks. They found statistically significant associations with educational aspirations for the factors such as parental educational level, father's unemployment, school atmosphere, and attitude towards school, social support from the father, and a sense of coherence. They also found that social support from the mother and friends was not associated with educational aspiration, nor was self-rated health. Besides, affinity towards school differed among adolescents on different educational tracks. Moreover,

a sense of coherence contributes to the reporting of educational aspiration by students on different educational tracks.

From the study of [Christenson, Rounds, and Gorney \(1992\)](#) and [Trusty \(1998\)](#) conducted on Australian adolescents found that both family and school environment contribute to the development of educational aspirations. However, while parental support seems to be more influential within lower and middle SEP adolescents, school attitudes had a stronger effect on educational expectations for upper SEP adolescents. But it was known from another study ([Mau & Bikos, 2000](#)) is that school program such as academic track is the strongest predictor of educational aspirations among U. S adolescents.

Teachers' attention is an important factor for student's aspiration. For example, in one study it was found that students' future educational and career aspirations may be affected by the attention they receive from teachers ([Wall, Covell, & MacIntyre, 1999](#)). For example, girls at single sex schools were found to have higher career aspirations than did girls and boys at coeducation schools, primarily due to receiving a greater amount of individual attention from teachers ([Watson, Quatman, & Edler, 2002](#)).

According to [Sewell, Haller, and Portes \(1969\)](#) academic aspirations have been related to the students' engagement in school. Students who are satisfied with their lives present high levels of engagement in school and recognize the importance of the school for their educational and seem to look for alternatives to it. It can be defined as the level of education one would like to attain. Evidence has suggested a mutual relationship among students' engagement in school and academic aspirations. On the one hand, a high academic achievement has proved to be related to a favourable investment in school and to high academic aspirations ([Gil-Flores, Padila-Carmona, & Suárez-Ortega, 2011](#)). Another research has indicated that the students' academic aspirations influence their academic achievement, academic self-concept, school motivation, perceived school ability and learning goal

orientation (Gutman & Schoon, 2012; Creed, Tilbury, Buys, & Crawford, 2011). The research has also claimed that as students get older, they increase their realism in aspirations (Hartung, Porfeli, & Vondracek, 2005).

An impressive study conducted by Kisilu, Kimani and Kombo (2012) revealed that there are factors that affect secondary school girls' occupational aspirations, grounded on the family settings, parenting, siblings, and other relatives. Other factors were the students' personality and self-esteem, the school environment, friends and role models. The identified strategies to enhance positive occupational aspirations included the provision of adequate information on career choice, role models, guest speakers, deliberate motivation for girls to do well in school and a favorable environment for girls to do well and aspire for good careers.

Glass (1974) studied birth order, verbal intelligence, and educational aspirations over 2523 students of higher socio-economic and background 10th and 12th grade and found that first born children were superior to later born in a test of reading ability and also found that first born children had higher educational aspirations than later-born children. Park (2008) compared the levels of educational aspirations and students disengagement between students with two parents and those with a single parent. The study was conducted over 9<sup>th</sup> and 12th grade students of Korea and found that students with single parent are much less aspire to 4 year university education and more likely to disengaged than their counterparts with two parents.

Rothon (2011) examined the relationship between education aspiration and achievement of secondary education in deprived area of London and found girls were more likely than boys to express a wish to remain in education beyond the age of 16 and also ethnic differences, socio-psychological variables particularly self-esteem and psychological distress associated with high educational aspirations. Singh (2011) studied educational aspirations in

secondary school students and found that educational aspirations of boys are better than girls. Medium of instruction also influence the educational aspiration.

Despite the relevance of family and school environment on adolescents' future aspiration, the research of the relationships between the family and school influences on aspiration is scarce.

Considering this view, the present study aims to explore comprehensively the association between adolescents' future aspiration with family and school environment and to contribute to the existing body of knowledge on the role of family and school environment on adolescent's future aspiration.

#### **2.4 Adolescents' school motivation and its relationship with family environment and school environment**

Student's motivation for learning is generally regarded as one of the most critical determinants of the success and quality of any learning outcome (Mitchell, 1992). Different experts have given motivation theory and explain motivation from their own position. These are:

##### **1. Incentive theories (intrinsic and extrinsic motivation)**

Intrinsic motivation is the self-desire to seek out new things and new challenges, to analyze one's capacity, to observe and to gain knowledge (Ryan & Deci, 2000). It is driven by an interest or enjoyment in the task itself, and exists within the individual rather than relying on external pressures or a desire for reward. According to this theory, a student would engage in playful and curiosity driven behaviors in the absence of reward. Intrinsic motivation is a natural motivational tendency and is a critical element in cognitive, social, and physical development (Ryan & Deci, 2000). Students who are intrinsically motivated are more likely to engage in the task willingly as well as work to improve their skills, which will increase their capabilities (Wigfield, Guthrie, Tonks, & Perencevich, 2004). Students are likely to be intrinsically motivated if they:

- attribute their educational results to factors under their own control, also known as autonomy or locus of control.
- believe they have the skills to be effective agents in reaching their desired goals, also known as self-efficacy beliefs.
- are interested in mastering a topic, not just in achieving good grades.

On the other hand, extrinsic motivation refers to the performance of an activity in order to attain a desired outcome and it is the opposite of intrinsic motivation. Extrinsic motivation comes from influences outside of the individual. Usually it is used to attain outcomes that a person wouldn't get from intrinsic motivation (Ryan & Deci, 2000). Common extrinsic motivations are rewards (for example, money or grades, success etc.) for showing the desired behavior, and the threat of punishment following misbehavior.

## **2. Cognitive dissonance theory**

The theory was suggested by Festinger (1957) who reported that cognitive dissonance occurs when an individual experiences some degree of discomfort resulting from an inconsistency between two cognitions: their views on the world around them, and their own personal feelings and actions (Rani & Kumar-Lenka, 2012). For example, a student may seek to reassure themselves regarding a choice of school environment, feeling that another decision may have been preferable. Their feeling that another school would have been preferable is inconsistent with their action of the present choice. The difference between their feelings and beliefs causes dissonance, so they seek to reassure themselves.

The theory of cognitive dissonance proposes that people have a motivational drive to reduce dissonance. The cognitive miser perspective makes people want to justify things in a simple way in order to reduce the effort they put into cognition. They do this by changing their attitudes, beliefs, or actions, rather than facing the inconsistencies, because dissonance is



a mental strain. Dissonance is also reduced by justifying, blaming, and denying (Festinger & Carlsmith, 1959).

### **3. Alderfer's ERG theory**

Alderfer (1972), expanding on Maslow's hierarchy of needs, created the ERG theory. This theory posits that there are three groups of core need such as existence, relatedness, and growth. The existence group is concerned with providing our basic material existence requirements. They include the items that Maslow (1943) considered to be physiological and safety needs. The second group of needs is those of relatedness- the desire we have for maintaining important personal relationships. These social and status desires require interaction with others if they are to be satisfied, and they align with Maslow's social need and the external component of Maslow's esteem classification. Finally, Alderfer isolates growth needs as an intrinsic desire for personal development. Maslow's categories are broken down into many different parts and there are a lot of needs. The ERG categories are broader and cover more than just certain areas. As a person grows, the existence, relatedness, and growth for all desires continue to grow. All these needs should be fulfilled to greater wholeness as a human being (Schneider & Alderfer, 1973). These include the intrinsic component from Maslow's esteem category and the characteristics included under self-actualization.

### **4. Achievement motivation**

Achievement motivation is an integrative perspective based on the premise that performance motivation results from the way broad components of personality are directed towards performance. As a result, it includes a range of dimensions that are relevant to success at work but which are not conventionally regarded as being part of performance motivation. The emphasis on performance seeks to integrate formerly separate approaches as need for achievement (Atkinson, 1974) with, for example, social motives like dominance.

Personality is intimately tied to performance and achievement motivation, including such characteristics as tolerance for risk, fear of failure, and others (Atkinson & George, 1960). This type of motivation is a drive that is developed from an emotional state. One may feel the drive to achieve by get striving for success and avoiding failure. In achievement motivation, one would hope that they excel in what they do and not think much about the failures or the negatives (Covington, 2000).

### **5. Goal-setting theory**

Goal-setting theory is based on the notion that individuals sometimes have a drive to reach a clearly defined end state. Often, this end state is a reward in itself. A goal's efficiency is affected by three features: proximity, difficulty, and specificity (Locke & Latham, 2006). Good goal setting incorporates the SMART criteria, in which goals are: specific, measurable, accurate, realistic, and timely. An ideal goal should present a situation where the time between the initiation of behavior and the end state is close. This explains why some children are more motivated to learn how to ride a bike than to master algebra. A goal should be moderate, not too hard or too easy to complete. In both cases, most people are not optimally motivated, as many want a challenge (which assumes some kind of insecurity of success). At the same time people want to feel that there is a substantial probability that they will succeed. Specificity concerns the description of the goal in their class. The goal should be objectively defined and intelligible for the individual. A classic example of a poorly specified goal is to get the highest possible grade. Most children have to idea how much effort they need to reach that goal (Grant, 2012).

. Examining the construct of intrinsic motivation in young elementary school children is important, because academic intrinsic motivation in the early elementary years may have profound implications for initial and future school success (Gottfried, 1990). Some studies indicate positive relationship between intrinsic motivation and academic achievement

(Rashvanlou & Hejazi, 2010). Moreover, studies have shown that fulfillment of students' basic psychological needs has positive effect on their academic achievement. Research also indicates positive effect of basic psychological needs on intrinsic motivation (Hanze & Berger, 2007). Using a shortened version of Harter's (1981) measure of classroom motivation and standardized test scores, Goldberg and Cornell (1998) found a positive and indirect relationship between intrinsic motivation and academic achievement in more than 900 second and third graders from 15 school districts in 10 states.

There is increasing recognition among scholars that adolescent's overall motivation, adjustment, and success at school requires willingness as well as an ability to meet social as well as academic challenges (Hinshaw, 1992). The goals for education held by teachers, parents, school administrators, and society at large reflect desires for children to develop social and moral competencies as well as intellectual skills. Moreover, students who are academically successful report trying to achieve socially appropriate as well as academic goals at schools (Ford, 1982).

Interest in academic activities such as school has been identified as a powerful motivational construct related to the formation and regulation of goal-directed behavior (Renninger, Hidi, & Krapp, 1992). Studies of intrinsic motivation have related high levels of interest to valuing, engaging in, and persisting at a specific task (Deci, 1992). Deci's suggestion that interpersonal relationship that provide students with a sense of belonging can be powerful motivators of children's interest in school. Research on elementary and middle school students has documented significant relations of students' perceptions of support and caring from parents, teachers, and peers to positive aspects of motivation. With respect to parents, perceived social and emotional support, and family cohesion (Connell, Spencer, & Aber, 1994) have been related positively to perceived competence, a sense of relatedness to peers, and academic effort and interest in school. Similarly, perceived social and emotional

supports from peers have been associated with motivational outcomes such as the pursuit of academic and pro-social goals, intrinsic value, and self-concept (Harter, 1996; Wnetzel, 1994). Perceived supports from teachers have been related to student reports of pursuit of goals to behave pro-socially and responsibly, educational aspirations and values, intrinsic values, and self-concept (Harter, 1996; Wnetzel, 1994).

Mucherah, Finch, Smith, & Ambrose-Stahl (2014) explored the relationship between classroom climate, reading motivation, and achievement. It was found that indeed the relationship of classroom climate to reading achievement was mediated by student reading motivation, and certain aspects of this mediated relationship were moderated by gender. Specifically, greater perceived order and organization, teacher support, and affiliation was associated with higher test scores through the reading motivation mediators of aesthetics, challenge, efficacy, and compliance.

Recent findings show motivation, specifically reading motivation, begins to decline in adolescence (Kelley & Decker, 2009; Lau, 2009). This has prompted an increased interest in motivation among adolescents. In a study conducted in the United States examining middle school students' motivation to read, results showed that motivation to read decreased as grade level increased (Kelley & Decker, 2009) while students in higher grades (8-9 grades) had significantly lower reading motivation compared to the primary school students in Hon Kong (Lau, 2009).

Studies using the MRQ (Motivation for Reading Questionnaire) have found that reading motivation to be a significant predictor of achievement with different aspects of motivation being uniquely related to achievement. For example, studies conducted in the US among middle school students have found motivation for reading challenge, efficacy, and aesthetics to positively influence achievement (Fulmer & Frijters, 2011). Similar findings were found in the UK among middle school students (Logan & Medford, 2011), in China (Law, 2008) and

in Belgium (Vansteenkiste & Rosseel, 2012). Experts reported that socially supportive relationships directly promote motivation and subsequent engagement in classroom activities (Deci, 1992). Having supportive relationships with parents, teachers, and peers has been associated with academic success (Parker & Asher, 1987).

Badri, Amani-Saribaglou, Ahrari, Jahadi, & Mahmoudi (2014) conducted a research on school culture, basic psychological needs, intrinsic motivation and academic achievement. Path analysis showed that fulfillment of basic psychological needs and intrinsic motivation has positive effect on academic achievement. Uncertainty avoidance and power distance have also negative effect on fulfillment of psychological needs, but the influence of femininity on this variable was positive. Also, collectivism has no significant effect on it. In general, the findings showed that if school culture supports students' autonomy, they will experience fulfillment of their basic psychological needs, and attain higher intrinsic motivation and academic achievement.

Wentzel (1998) studied on adolescents' supportive relationships with parents, teachers, and peers in relation to motivation at school (school- and class-related interest, academic goal orientations, and social goal pursuit). The research findings indicate that parent support was a positive predictor of school-related interest and goal orientations. Even, perceived support from parents and peers also was related to interest in school indirectly by way of negative relations with emotional distress. Finally, pursuit of social responsibility goals and school- and class-related interest in 6th grade partly explained positive relations between social support in 6th grade and classroom grades 1 year later.

A review of the empirical literature has revealed a paucity of published research on classroom motivation and academic achievement in young elementary school aged children as well as mixed findings among the studies with different ages of children and adults. Fortier, Vallerand, and Guay (1995) and Niebuhr (1995) both studied ninth graders and

reported contradictory findings. [Fortier et al. \(1995\)](#) found support for the relationship between motivation and academic achievement. [Niebuhr \(1995\)](#), in contrast, found that student motivation had no significant relationship with academic achievement.

[Boggiano, Main, and Katz \(1991\)](#) found females significantly more extrinsically motivated than males. A review of the literature by [Schiefele, Krapp, and Winteler \(1992\)](#) strongly suggests that female students' academic performance is less associated with their interests than male students' academic performance. Even less is known about the motivation of children from different racial and ethnic groups. [Graham \(1994\)](#) reviewed the literature on differences between African American and European American students, concluding that the differences are not very large; however, African Americans were found to be more externally motivated than European Americans.

Considering the above literature, it is assumed that few studies is known about the achievement, success with school motivation but there has been very little research that is directly family related. So, continued research of family and school environment with school motivation in adolescence is needed.

## **2.5 Adolescents' school engagement and its relationship with family environment and school environment**

Two popular theories explained engagement in the following manner. They are

**1. Self-determination theory.** This is a motivational theory developed by [Deci and Ryan \(1985\)](#) which has an influence on aspirations. It aims to explain individuals' goal-directed behavior. People are centrally concerned with motivation how to move themselves or others to act. Everywhere, parents, teachers, coaches, and manager's struggle with how to motivate those that they mentor, and individuals struggle to find energy, mobilize effort and persist at the tasks of life and work. However, if motivation becomes satisfied it drives an individual towards positive future aspiration. According to this theory, people need to feel the following in order to achieve psychological maturity:

- 1) **Competence:** People need to gain mastery of tasks and learn different skills.
- 2) **Connection or Relatedness:** People need to experience a sense of belonging and attachment to other people.
- 3) **Autonomous:** People need to feel in control of their own behaviors and goals.

Deci and Ryan (2000) suggest that when people experience and fulfilled these three things, they become self-determined and able to be intrinsically and extrinsically motivated to pursue the things (such as future aspiration) that interest them. By consistently promoting autonomy, competence and relatedness, one can have a wonderful motivational impact on their aspiration. The critical component of the theory concerns the degree to which individuals fulfill their basic psychological needs; the more they attain these basic psychological needs, the more their behavior is self-determined.

2. **Flow theory.** Csikszentihalyi's theory of flow (1990) depicts that future aspiration depends on the state in which an individual is so involved in an activity that nothing else seems to matter and the experience itself is so enjoyable that people will do it even at great cost for the sheer sake of doing it. If involvement and activity being satisfied, then, goal, future aspiration would be satisfied. In Flow Theory (Whitson & Consoli, 2009), it is important to understand what the child is thinking, not just what the child is doing from an outside observer's perspective. Student engagement can be impacted by increasing the relevancy of tasks, adopting student centered methods of teaching, providing timely and appropriate feedback, and creating positive learning environments.

Csikszentmihalyi (1990) identified seven characteristics of flow, but it is the first four which directly impact student engagement. A student engagement would be increased after meeting up these characteristics. The four key characteristics that directly impact student engagement and can inform classroom instructional practices are: a challenging activity that

requires skills, merging of action and awareness, concentration on the task at hand, clear goals and feedback.

Flow Theory allows educators to think differently about student engagement. It forces educators to think about engagement as a complex construct that includes cognition, motivation and emotion, not just simple as simple time on task behaviors. Attaining flow, or coming near to attaining flow, may increase the positive learning outcomes associated with increased student engagement such as lower high school drop-out rates, a narrowing of the achievement gap between whites and minorities, and increased GPA averages.

An increasing attention to the students' engagement in school is noticeable in the international literature. Such an attention considers the importance of the students' engagement in school for their academic achievement, educational enrolment, and well-being (Willms, 2001). Decreases in motivation, performance, desire, and school engagement during adolescence are concerns of parents, teachers, development workers, and policy makers. Adolescents' school engagement can be facilitated by contextual influences at the school, family, peer, community, and government level throughout the school years (Appleton, Christenson, & Furlong, 2008). The students' engagement in school can therefore be seen as a developmental and contextual process, which is important in a person's life trajectory. Students who are satisfied with their lives present high levels of engagement in school and recognize the importance of the school for their educational and (Furlong et al., 2003).

Theories and research have emphasized the relationships between students' school engagement, adjustment, academic achievement, and behavior (Barbar & Olsen, 2003). Adolescents who do well and are commitment to school activities are likely to try tough and do well academically than students who are disengaged from school (Chen, 2005). Substantial research has documented the importance of classroom and school environment (Eccles, Flanagan, Lord, & Midgley, 1996), but few studies have examined the importance of



social influences such as family environment, parental school involvement, parenting style on school engagement among adolescents, although both social and school environment are important influences on many aspects of adolescent behavior (Simons-Morton & Haynie, 2002).

School engagement is an important predictor of academic outcomes and to prevent school drop-out (Kindermann, 2007). A positive relationship between school engagement and academic outcomes is well established (Fredricks, Blumenfield, & Paris 2004). For instance, Finn and Rock (1997) reported that disengagement behaviors such as being inattentive and disruptive, predicted lower grades. Campbell, Voelkl, and Donahue (1997) demonstrated the striking impact of engagement on reading achievement using National Assessment of Educational Progress (NAEP) where include 1996 student data of three age groups. They found that the national sample of 13-year-old students with higher engagement performed better on reading achievement tests than 17-year-old students with lower engagement. Similarly, engaged students from low-income families scored higher on reading tests than less-engaged students from high-income families (Guthrie & Wigfield, 2000). This latter result indicates that increasing engagement may be one way to close the achievement gap between low- and high-income students.

Developmental psychologists have been interested to study how parents convey their values, goals attitudes, and skills in their children's socialization process since the 1920s (Spera, 2005) through parenting style. According to Darling and Steinberg (1993) the way parents behave creates an emotional setting. A parent-child relationship develops according to how parents behave in their relationship with their child and this includes verbal as well as non-verbal communication. In the case of academic achievement, a home with permissive parents is at a disadvantage, because the children are unaware what their parents expect of them, prompting the development of a level of aggression as they seek the norm because the

permissiveness of such parents creates an environment of apparent indifference to various aspects of the children's academic life and activities.

Again, parental school involvement in children's education has received considerable attention in recent years (Easton, 2010). Parental involvement means the allocation of time, effort, and care by the parent in relation to his/her children's academic affairs (Crozier, 1993) whereas parental school involvement includes participation in activities conducted at the school and those that are outside of the four school walls such as finishing homework, volunteering, and tutoring at school. Experts reported that children of involved parents showed better speaking ability and better problem-solving skills (Booker, 2006), realize the value of education (Evans, 2004), feeling of good confidence, and realize their dreams (Gonzalez-DeHass & Willems, 2005). Even, parental involvement uses a greater sense of responsibility for their own actions among the children who are more willing to perform more challenging tasks (Gonzalez-DeHass & Willems, 2005). It has been shown in a study that middle and high school student's exhibit enhanced average levels of achievement when their parents are actively engaged in various aspects of their education compared to others whose parents are less involved or not involved (Fan, 2001).

Different experts reported that (Jordan, Snow, & Porche, 2000; Eccles & Harold, 1996; Rosenzweig, 2001) a congenial home learning environment helps children succeed in school. Children whose families are actively involved in their learning have more positive attitudes towards school, do better in school, and are more engaged in learning. In fact, parenting practices can account for as much as 25% of the achievement differences between higher- and lower-performing students.

In a study conducted by Lenzi et al. (2012), found that the role of family affluence, democratic school climate, and neighborhood social capital in predicting civic engagement during adolescence in a representative sample of students in Belgium, Canada, Italy,

Romania, and England. Results also showed that, in the total sample, family affluence, a democratic school climate in which students can express their point of view, and perceiving that one lives in a neighborhood where people trust and help each other, are associated with more involvement in civic organizations; however, results also showed some cross-country differences in correlates of civic engagement. The results are also supported by the Ecological Systems Theory (Bronfenbrenner, 1979) and the Social Development Model (Catalano & Hawkins, 1996) which both posit that family, peers, school, and community contexts socialize individuals to different goals and behaviors, instilling in some a moral commitment to contribute to the common, helping other people, and participating in community organizations.

Steinberg, Lamborn, Darling, Mounts, & Dornbusch (1994) assessed a large sample of 14–18 year-olds twice one year apart and found that three measures of authoritative parenting practices were positively associated with school engagement and achievement and that parental involvement was more effective in promoting school success within the context of authoritative parenting. Parent involvement has been linked to middle school students' engagement (Finn, 1993), educational aspirations (Rumberger, 1995), and achievement while parental control and demands were positively associated with classroom conduct and attentiveness (Paulson, 1994).

From the study of Creed, Tilbury, Buys, and Crawford (2011) and Gutman and Schoon (2012), it is seen that academic aspirations have been related to the students' engagement in school. On the one hand, a high academic achievement has proved to be related to a favourable investment in school and to high academic aspirations. On the other hand, the research has indicated that the students' academic aspirations influence their academic achievement, academic self-concept, school motivation, perceived school ability, and learning goal orientation.

In a short-term longitudinal study conducted by [Wang and Holcombe \(2010\)](#) found that students' perceptions of the distinct dimensions of school environment in seventh grade contribute differentially to the three types of school engagement in eighth grade. Specifically, students' perceptions of school characteristics in seventh grade influenced their school participation, identification with school, and use of self-regulation strategies in eighth grade that occur therein and, in turn, influenced students' academic achievement in eighth grade. [Skinner and Belmont \(1993\)](#) found their study that students whose teachers are clear in their expectations and provide consistent responses are more behaviorally and emotionally engaged. Teachers' emotional support has also been positively associated with different indicators of behavioral engagement, including higher participation in school activities and fewer disruptive behaviors ([Ryan & Patrick, 2001](#)). Similarly, in an emotionally supportive and caring school environment, students are more willing to open ideas up for discussion, demonstrate more positive attitudes toward academic studies, and express feelings of enjoyment as they can freely express themselves and count on teachers for support with a range of problems (e.g., [Shim, Cho, & Wang, 2013](#)).

There is limited evidence that peer groups influence adolescents' enjoyment of school and academic performance ([Berndt, 1999](#); [Ryan, 2001](#)). In a rare network analysis, [Ryan \(2001\)](#) found that peer group context predicted seventh graders' enjoyment of school and achievement. Logically, associating with friends with positive attitudes toward school would encourage school engagement, while associating with problem behaving friends may discourage school engagement. Several studies have demonstrated that adolescents who have positive interactions with peers are more engaged both behaviorally and emotionally in school (e.g., [Wentzel, 2003](#)). These associations are most likely due to feeling supported and cared for by one's peers, fulfilling the adolescent need for relatedness and promoting the development of a sense of satisfaction in school. Although there is little evidence that peer

emotional support is related to cognitive engagement. However, no studies could be located that show a relationship between adolescent school engagement and problem behaving friends.

Previous empirical evidences (such as Martin, 2004) suggest that school engagement among adolescents is facilitated by some personal characteristics (such as gender). For instance, overall girls report higher levels of school engagement than boys regardless of what type of engagement is considered (Johnson, Crosnoe, & Elder, 2001; Martin, 2004). However, according to extant research, the significance of the role of group differences (e.g., ethnicity) as a moderator of school effects on student engagement is unclear.

Based on literature of review it is clear that few empirical research has documented the importance of school engagement with parents, academic success, academic aspiration, peer groups, learning environment of family, teacher etc. Moreover, research has not yet fully explained combination effect of family and school environment on school engagement, although both family and school environment have important influence on many aspects of adolescent behavior. Considering the scarcity of studies devoted to the relationships between family and school environment with adolescents' school engagement, this study presents a comprehensive focus on adolescents' engagement in school and their family and school environment.

## **2.6 Adolescents' hopelessness and its relationship with family environment and school environment.**

Throughout the adolescence stage, individuals need to complete their developmental tasks and they struggle to cope with some certain difficulties arising from this life period. For example, they attend a new school, experience conflicts in family relationships, peer relationships, and change their friends. The period in which a person passes from adolescence to the young adult can cause anxiety, depression, and hopelessness on the students as their responsibility and roles change. These factors cause negative effect on the mental health of

the students. The one of the aim of the research is to test the theoretical model which has been developed to explain whether there is a causal relationship between family environment, school environment, and hopelessness degree in adolescents. [Snyder \(2005\)](#) pointed out that very little psychological theory and research has addressed the area of children' hope in general. The study of hopelessness in children has been primarily with children and adolescents experiencing suicidal intentions and severe psychological problems. So further exploration is needed to identify and understand the relationship between family and school environment with hopelessness.

[Cakar and Karatas \(2012\)](#) conducted a study on between self-esteem, perceived social support, and hopelessness in adolescents ( $N = 257$ ; 143 female, 114 male). They found that a causal relationship was between adolescent self-esteem, perceived social support, and hopelessness. That is, adolescents who have high self-esteem perceived less hopelessness and low self-esteem is an important variance in producing hopelessness, finally, it was seen that family support, family functioning, friend relationships, opposite sex friendships are the three basic fields contribute to hopelessness. But [Cunningham, Gunn, Alladin, & Cawthorpe \(2008\)](#) found in their study that there is a close relationship exists among depression, anxiety, hopelessness, and demoralization that is also stable demographic variable (such as sex, age, location). A study on Chinese adolescents conducted by [Shek \(1999\)](#) found that family factors play an important role in influencing the psychosocial adjustment particularly hopelessness and school adjustment. The study also showed from bivariate and canonical correlation analyses that in general, adolescents' perception of parenting styles, family functioning, and parent-adolescent conflict were significantly related to scores on measures of hopelessness, academic performance, and school conduct. Approximately similar results were obtained from the research of [Akbag and Goktan \(2010\)](#). They conducted a research on to examine whether there were associations among big five personality factors, perceived

family environment, and hopelessness in a sample of 124 Turkish military school students. It has been found that factors having an effect on students' hopelessness were the personality traits (conscientiousness, extraversion, agreeableness, and neuroticism) and perceived family cohesion. Moreover, the interaction of these variables (personality factors and family environment factors) made stronger effect on students' hopelessness level. These finding is parallel with the other research findings in related literature (Dyck, 1991; Velting, 1999; Michalik-Bonner, 1990).

Affizal & Mazlan (2014) conducted a study where two self-report surveys were used to collect data related to stress, depression, and hopelessness. This study was involved 426 participants (227 males and 199 females) in Peninsular, Malaysia. Comparison analysis showed that stress and depression were significantly higher in female inmates than in male inmates. Stress and depression also showed significant association in both male and female inmates. Other experts (such as Baviskar, Phalke, & Phalke, 2013; Naik & Padikkal, 2016) reported that there is a significant difference on depression and hopelessness among science and arts, and rural and urban students.

A longitudinal study conducted by Bolland, Lian, Cecelia, and Formichella (2005) on 5895 African-American adolescents. They explored relationship between disruptive events and lack of connectedness with adolescents' hopelessness on the basis of past literature. The results show that over time several variables associated with disruption and connectedness are positively or negatively associated with increased feelings of hopelessness among inner-city adolescents. But some researchers have shown that (Banfield, 1974; Lopez, 1994; Naylor, 1998) poverty, neighborhoods are also closely related to hopelessness even suggesting that feelings of hopelessness are defining characteristics of the underclass personality. Feelings of distress, disconnectedness, and hopelessness brought about by neighborhood-level characteristics may be moderated by family relationship. Stable and supportive family

environments provide children with the emotional security to develop healthy relationships with others and can play an important protective role (Jencks & Mayer, 1990; Hanson, McLanahan, & Thompson, 1997). One study it was compared teenagers who stay with their family and stay in orphanage found that hopelessness levels of teenagers between the ages of 15 and 18, who stay with their family was 9 and 13; when the fact that 9 and higher scores can be indicators of suicide is taken into consideration, it can be said that this score mean is high (Palmer & Connelly, 2005).

A study conducted by McLeod, Rose, and Williams (1993) is reported which adapted a verbal fluency paradigm to examine the ease with which hospitalized parasuicides, hospital controls, and nonhospital controls were able to think about future positive (things they were looking forward to) and future negative (things they were not looking forward to) events. The parasuicide subjects showed a deficit in being able to think of future positive events, both for the immediate future and for the longer-term future. But there were no differences between the groups on being able to think of future negative events.

In a study of Taskesen and Ulucay (2013) it was observed that school type doesn't effect on hopelessness but class levels and sex have significant effect on hopelessness and this difference was between 2<sup>nd</sup> and 3<sup>rd</sup> grades and 3<sup>rd</sup> and 4<sup>th</sup> grades for class levels and male students for sex. Even the differences between high school students' hopelessness level can be related to socio-demographic variables such as geographical region in which students live.

Considering the literature discussed above, it is reasonable to hypothesize to see the nature of relationship between family and school environment with adolescent's hopelessness in the socio-cultural context of Bangladesh.



## **2.7 Adolescents' hostility behavior and its relationship with family environment and school environment.**

Different theories explain hostility from their own sides, such as

### **1. Realistic conflict theory**

This theory is a social psychological model of intergroup conflict. It explains how intergroup hostility can arise as a result of conflicting (such as family or peer groups) and competition over limited resources, and it also offers an explanation for the feelings of prejudice and discrimination toward the outgroup that accompany the intergroup hostility (Jackson, 1993; Whitley & Kite, 2010). According to this theory, conflict may also arise from social status. Feelings of resentment can arise in the situation that the groups see the competition over resources as having a zero-sums fate, in which only one group is the winner and the other loses. The length and severity of the conflict is based upon the perceived value and shortage of the given resource. According to this theory, positive relations can only be restored if superordinate goals are in place (Baumeister & Vohs, 2007).

### **2. Object relation theory**

Object relations theory (Abraham, 1927) is a psychoanalytic theory of interrelationships between people within a family, between the mother and her child. Object means significant person that is the object or target of another's feelings or intentions. Relations refer to interpersonal relations and suggest the residues of past relationships that affect a person in the present. Object relations theorists are interested in inner images of the self and other and how they manifest themselves in interpersonal situations. A basic tenet is that we are driven to form relationships with others and that failure to form successful early relationships leads to later problems. It is also concerned with the relation between the subject and their internalized objects, as well as with external objects. Nature of object relationship influences children's emotion, feelings etc. When a baby is angry, it is total anger and rejects and thrusts

away the mother while he is happy, he loves and adores her. He projects his bad feeling and associates her with it.

### 3. Attachment theory

Attachment is a deep and enduring emotional bond that connects one person to another across time and space (Ainsworth, 1973; Bowlby, 1969). Attachment is characterized by specific behaviors in children, such as seeking proximity with the attachment figure when upset or threatened (Bowlby, 1969). Attachment behavior in adults towards the child includes responding sensitively and appropriately to the child's needs. Such behavior appears universal across cultures. This theory provides an explanation of how the parent-child relationship emerges and influences subsequent development. Dollard and Miller (1950) suggest that attachment is a set of learned behaviors. The basis for the learning of attachments is the provision of food. An infant will initially form an attachment to whoever feeds it. Bowlby (1973) suggests that children come into the world biologically pre-programmed to form attachments with others, because this will help them to survive. The infant produces innate 'social releaser' behaviors such as crying and smiling that stimulate innate caregiving responses from adults. So, the determinants of attachment are food, care, and responsiveness. Good attachment with family and others lead to smooth development of a child while mal attachment creates different adjust mental problems such as hostility, anger, aggressiveness etc.

Family and school environment has an enormous impact on the outcome of children's lives. It affects adolescents' hostile and aggressive behavior and also affects their personality during childhood and adulthood (Gross & Keller, 1992; Garrison, 1987). Adolescent is a crucial period for developing hostility. But this form of hostile behavior has received little attention for the public, psychologist, and researchers in the past (Hart & Brassard, 1987; Gross & Keller, 1992; Nicholas & Bieber, 1996). After 1980s society has become aware of

and concerned such hostility behavior in some European countries and the United States (Olweus, 2001; Skiba, 2000; Smith, 2003).

Previous research has documented the link between aggressive behavior in adolescent with their family and school environment (Musitu & Garcia, 2004). Different experts (Costa & McCrae, 1992; Felsten & Hill, 1999) reported that neurotic hostility is positively associated with stress vulnerability, poor coping, and depression. Prior studies also examined the link between individual variables and aggressiveness behavior in adolescents have demonstrated that adolescents who are aggressive normally unable to anticipate the negative consequences of their behavior for the victims, showing lower level of empathy (Evans, Heriot, & Friedman, 2002; Olweus, 2005). But recent studies suggest that sometimes adolescents show aggressive or hostility behavior for gaining social recognition, recognized as powerful, socially accepted, rebellious by their classmates (Rodriguez, 2004), popularity, leadership, and power exercise (Emler & Reicher, 1995; Kerpelman & Smith-Adcock, 2005). Even some studies found that hostile adolescents show their negative attitudes to institutional authority such as the police, the law, and also the school and teachers (Adair, Dixon, Moore, & Sutherland, 2000; Emler & Reicher, 1995).

Hostility has recently emerged as a ethical components of the Type A behavior pattern and has been linked to a variety of negative health outcomes including cancer, hypertension, and cardiovascular disease (Calhoun, Bosworth, Siegler, & Bastian, 2001; Shapiro et al., 1995; van Loon, Marja, Surtees, & Ormel, 2001). It has been found in several studies (Hughes, 1986; Kendler, Neale, Maclean, Heath, Eaves, & Kessler, 1993; Felsten, 1996) that hostility and depression may co-occur and increase the risk of unhealthy behaviors including substances use and smoking among adolescents where they are overwhelmed with pressure and conflicts from family, school, and peers. High family education (Schieman, 2003),

reinforce from parents and schools (Sears, Maccoby, & Levin, 1957) has a significant relation with adolescents' which reduce hostile and aggressive behavior in their life.

Numerous studies (Lee, Mendes de Leon, & Markides, 1988; White, Johnson, & Buyske, 2000; Whalen, Jamner, Henker, & Delfino, 2001) have suggested that a positive correlation between hostility and negative affect which may lead to cigarette smoking as a means to reduce the tension, irritation, and distress in adolescents. Family displacement due to religious, ethnic, and political crisis and also death of family member specially parents leads to adolescent's aggressive behavior which turns into hostile behavior (Ogwo, 2013). Diamond and Hopson (1998) pointed out that people born to poverty, neglect, drug exposure or have restricted experience usually have a life outcome influenced by deprivation. Their deprivation often leads to frustrated interactions with others and may turn into hostile and aggressive behavior.

Pickover (2002) asserted that individual who experience rejection will rejection from others. Consequently, individuals exhibit hostile and aggressive behaviours that cause the environment to reject them. This rejection reinforces hostile and aggressive behavior, trapping the individual in a circle of despair

In a study of Hoglund & Nicholas (1995) found that individual who reported high level of emotional abuse, scored higher on hostility, aggression, and anger. Even, low levels of emotional abuse results in hostility (Nicholas & Bieber, 1996). A consistent result was found by Rohner and Rohner (1980) in their study in which it was seen that a rejected on emotionally abused child tends to be more hostile and aggressive than an accepted child. Psychodynamic theory suggests that anger turned inward is at the core of depression (Felsten, 1996). There is evidences that depressed adolescents are at heightened risk for hostility and aggressive behavior because depressed adolescents tend to attend selectively to the most

negative features of events. Thus, they tend to feel intense, irritated, and hostile (Felsten, 1996; Knox, King, & Hanna, 2000).

Weiss et al. (2004), conducted a pioneer study on hostility, depressive symptoms, and smoking behavior in early adolescence in a sample of 1699 ethnically diverse students in California. Their study found that among 6<sup>th</sup> graders who had not smoked, depressive symptoms, and hostility were associated with smoking initiation by the 7<sup>th</sup> grade. Among those students who had already tied smoking, increase in depressive symptoms and hostility were associated with more frequent smoking. The association between hostility and smoking was stronger for students reporting higher levels of depressive symptoms.

In one study Brummett et al. (2000), examined the relations of hostility (of self and spouse) with self-ratings of depressive symptoms in 898 spouse pairs. Self-ratings of hostility were initially examined as predictors of depression. Next, spouse self-ratings of hostility were added to the model. Finally, the interaction of self and spouse hostility was investigated. These relations were explored for three components of hostility (Cynicism, aggressive responding, and hostile affect). Age and education were controlled in all models and effects were examined separately for women and men. Self-ratings of hostile affect were positively related to depressive symptoms for both women and men. Self-ratings of cynicism were also significantly related to depression, but only for men. All three components of spouse's hostility were positively related to one's own symptoms of depression for women. For men, however, spouse's hostility was not related to symptoms of depression. These findings highlight the need to study psycho-social risk factors in social units and have potential implications for intervention.

Examining the above literature it is seen that little attention has been paid to the effect of adolescents' hostility behavior in relation to their family and school environment but few studies have investigated the causal link among adolescents' hostility, depression, smoking,

anger, violent behavior, aggressiveness, self-esteem etc. Therefore, there is a need to examine further research whether adolescents' hostility is related with their family and school environment.

Last but not least, although significant relations between different aspects of cognitive-emotional functioning with family atmosphere and school environment are well documented in the literature reviewed above, but researchers have rarely examined the effect of family and school environment on adolescents' cognitive-emotional functioning in a single study. Therefore, in the present study it was examined adolescents' cognitive-emotional functioning in relation to their family atmosphere and school environment.

## Methodology

### 3.1 The population

The eleventh grade students (Adolescents) of Dhaka Metropolitan City (DMC) were regarded as the population of the present study. According to Board of Intermediate and Secondary Education (BISE, 2013) there are about 198 'schools and colleges' under DMC and approximately 52,000 eleventh grade students studying in these schools and colleges (Table 1).

### 3.2 Participants

The participants were selected in three phases:

**Phase I.** Three lists of educational institutions, one for co-education, one for boys, and one for girls were collected from BISE through application to proper authority (The copy of permission letter is attached to the appendix).

**Phase II.** Three co-educational 'schools and colleges' were randomly selected from 162 co-educational institutions. Two 'schools and colleges' were randomly selected from 4 boys institutions and two 'schools and colleges' were randomly selected from 32 girls institutions. One thousand four hundred twenty four students were studying in these 7 'schools and colleges' (Table 1).

Table 1

*The population and the number of students studying in the selected institutions*

Total number of Institutes	Population	Type of Institutions	Number of institutions	Selected institutions	Number of students studying
198	Approximately 52,000	Coeducation	162	1. Raihan School and College	161
				2. Ideal laboratory college	70
				3. Naowab Habibullah Model School & College	472
		Boys	4	1. Motijeel Government Boys' High School & College	186
				2. Sher-E-Bangla Nagar Govt. Boys' High School & College	189
		Girls	32	1. Sher-E- Bangla Nagar Govt. Girls School & College	125
				2. Dhaka Cantonment Public Girls School & College	221
Total					1,424

Source: Board of Intermediate and Secondary Education (2013; Session 2012-2014).

The 'schools and colleges' were disproportionately selected in order to have equal number of male and female in the sample.

**Phase 111.** On appointed date and time 1083 students attended the class. However, 19 of them disagreed to participate in the study. Thus, 1064 students were participated in the study (Table 2).

Table 2

*Distribution of sample*

Unisex/Co-education	Selected institutions	Students who attended the class	Students participate in the study
Unisex (Girls)	1. Sher-E- Bangla Nagar Govt. Girls School & College	112	112
	2. Dhaka Cantonment Public Girls School & College	161	157
Unisex (Boys)	1. Motijeel Government Boys' High School & College	144	134
	2. Sher-E-Bangla Nagar Govt. Boys Hgh School & College	136	136
Co-education	1. Raihan School and College	123	123
	2. Ideal laboratory college	55	55
	3. Naowab Habibullah Model School & College	352	347
		1,083	1,064

Participants' age ranged from 14 to 19 years with a mean of 16.43 and standard deviation of 0.89. Among the participants 49.25% were boys and 50.75% were girls. 23.12 % of the participants were from lower class, 62.69% from middle class and 14.19 % were from upper class. Among the boys 28.6% were from lower class, 65.2% from middle class, and 6.2% were from upper class. Among the girls 20.8% were from lower class, 68.2% from middle class, and 11 % were from upper class. 77.35 % of the participants came from nuclear family and 22.65% of the participants from joint family. Participants were from science, arts, and commerce background. The following tables describes the distribution of participants according to different socio-demographic characteristics.



Table 3

*Distribution of participants according to sex*

Sex	Frequency	Percentage (%)	Cumulative Percentage
Male	524	49.25	49.25
Female	540	50.75	100.0
Total	1064	100.0	

Table 4

*Distribution of participants according to socio-economic status*

Socio-economic status	Frequency	Percentage (%)	Cumulative Percentage
Lower	246	23.12	23.12
Middle	667	62.69	85.81
Upper	151	14.19	100.0
Total	1064	100.0	

Table 5

*Distribution of participants according to family type*

Types of Family	Frequency	Percentage (%)	Cumulative Percentage
Nuclear	823	77.35	77.35
Joint	241	22.65	100.0
Total	1064	100.0	

According to standard textbook authors and researchers, the sample size for a research should be determined on the basis of  $\alpha$ , the effect size, and statistical power (Kline, 2005). The commonly chosen value of  $\alpha$  in behavioral science is .05 or .01. Cohen (1988) makes suggestions for rules of thumb about the effect size, and statistical power. According to his rules of thumb, if the effect size is .20 and statistical power is .85, with  $\alpha = .05$  the sample size becomes 221, and if the effect size decreases to .10 the sample size becomes 895 (Cohen, 1988). Considering the variability of the population characteristics, desired precision level, and  $\alpha$  for a desired confidence limit, Guilford and Fruchter (1978) suggested to use the formula:  $N = z^2pq/d^2$  to calculate the sample size. In this formula,  $N$  = sample size,  $q = 1-p$ ,  $z$  = normal curve-deviation corresponding to a chosen  $\alpha$ , such as, in a two-tailed test  $z = 1.96$  for 95% confidence limit,  $d$  = desired level of precision or significance which is usually .05 or .01,  $p$  = proportion of the population with attribute to be measured, if unknown, assume  $p = .50$ . If used this formula the sample size becomes 384  $[(1.96)^2 \times .50 \times .50 / (.05)^2 = 384]$ . The

number of participants in this study was 1064. Thus, the sample size required for the present survey was satisfied.

### **3.3 Variables**

**Dependent variables.** The dependent variables used in this study were cognitive emotion regulation, emotional intelligence, future aspiration, school motivation, school engagement, children hopelessness, and hostility.

**Independent variables.** The independent variables used in this study were family environment and school environment.

### **3.4 Measures**

The following questionnaires were used to measure each participants' cognitive- emotional behavior and family atmosphere and school environment.

#### **3.4.1 Measures of cognitive-emotional behavior**

1. Cognitive Emotion Regulation Questionnaire (CERQ)
2. Emotional Intelligence Scale (EIS)
3. Future Aspiration Scale (FAS)
4. School Motivation Inventory (SMI)
5. School Engagement School (SES)
6. Children's Hopelessness Scale (CHS)
7. Hostility Scale (HS)

**1. Cognitive Emotion Regulation Questionnaire (CERQ).** The CERQ (Cognitive Emotion Regulation Questionnaire) is a multidimensional questionnaire constructed in order to identify the cognitive coping strategies someone uses after having experienced negative events or situations. It has been constructed both on a theoretical and empirical basis. Developed by [Garnefski, Kraaij, and Spinhoven \(2002\)](#), the Cognitive Emotion Regulation

Questionnaire (CERQ) is a 36- item Likert type scale with five response alternatives ranging from 'almost never' (1) to 'almost always' (5). The scale has 9 sub-scales, each subscale consisting of 4 items, each item referring to what someone thinks after the experience of threatening or stressful life events (Table 6, Table 7). The 9 subscales are grouped broadly as adaptive and less adapted emotion regulation strategies. Adaptive strategies include 5 subscales such as acceptance, positive refocusing, refocus on planning, positive reappraisal, and putting into perspective whereas less adaptive strategies include 4 subscales such as self-blame, rumination, catastrophizing, and blaming others (Table 6, Table 7). Individual subscale scores are obtained by summing the scores belonging to the particular subscale (a subscale score may range from 4 to 20). Adaptive score is obtained by summing all the items' scores under the adaptive subscale while less adaptive score is obtained by summing all the items' scores under the less adaptive subscale.

The scale has high internal consistency (Garnefski et al., 2002). All sub-scales have good internal consistencies ranging from .68 to .86. Internal consistency range from .68 to .81 for early adolescents, from .68 to .79 for late adolescents, and from .75 to .85 for adults. The item-total correlations range from .41 to .70 for early adolescents, from .35 to .63 for late adolescents, and from .38 to .74 for adults. The test-retest reliability of the CERQ ranges from .48 to .65.

The CERQ scale is almost invariant with respect to age and gender. The original CERQ has been shown to have good factorial validity, discriminant validity, and construct validity (Garnefski et al., 2002). Considering psychiatric patients, age, and gender it was found that the CERQ has well discriminant capacity. The psychiatric patients score higher on self-blame, rumination, and catastrophizing than the normal adults. Again women do in fact show a higher mean score than men on most of the sub-scales. Finally, the use of most cognitive strategies seems to increase with age, on the contrary, with the elderly people the use of

certain cognitive coping strategies seems to decrease somewhat. These results confirmed discrimination power of the CERQ. The CERQ scales and various measures revealed that the CERQ has also good construct validity. The CERQ scales were found to correlate significantly with task-oriented coping (From .21 to .68), emotion-oriented coping (From .20 to .56), avoidance-oriented coping (From .16 to .37), and with anxiety (From .15 to .54). Similarly, the CERQ was found to be significantly correlated with the Hostility Scale, Depression Scale, Rosenberg Self-esteem scale, and NEO 5-Factor Personality Test (NEO-FFI).

Table 6  
*Description of the CERQ sub-scales*

Sub-scales/Dimensions	Definition
<b>Adaptive</b>	
Acceptance	Acceptance refers to thoughts where you resign yourself to what has happened and accept it, thinking that it cannot be changed and life goes on.
Positive refocusing	This concept refers to thinking about other, pleasant matters instead of the event in question.
Refocus on planning	It refers to thinking about which steps to take in order to deal with the event or thinking up a plan to change the situation.
Positive reappraisal	This strategy refers to mentally attributing a positive meaning to an event in terms of personal growth, thinking that the event makes you stronger, looking for the positive sides of an event.
Putting into perspective	It refers to thoughts that play down the seriousness of the event when compared to other events and to emphasizing in your mind that there are worse things in the world.
<b>Less adaptive</b>	
Self-blame	Self-blame is a cognitive coping strategy in which thoughts are central of holding yourself responsible for what you have experienced, putting the blame and/or the cause of what happened on yourself and being preoccupied with thoughts about the mistakes you yourself have made.
Rumination	Rumination refers to thinking all the time of and /or being preoccupied with the feelings and thoughts associated with the negative event.
Catastrophizing	It refers to recurring thoughts about how terrible the event has been and about what you have gone through being the worst thing to happen to a person, much worse than what others experience.
Other-blame	Other blame refers to thoughts of putting the blame for what you have experienced on others, holding others responsible for what has happened and/or thinking about the mistakes others have made in this respect.

Table 7  
*Item distribution of CERQ*

Sub-scales/Divisions	Serial number of items	Total number of items
<b>Adaptive</b>		
Acceptance	5, 6, 7, 8	4
Positive refocusing	13, 14, 15, 16	4
Refocus on planning	17, 18, 19, 20	4
Positive reappraisal	21, 22, 23, 24	4
Putting into perspective	25, 26, 27, 28	4
<b>Less Adaptive</b>		
Self-blame	1, 2, 3, 4	4
Rumination	9, 10, 11, 12	4
Catastrophizing	29, 30, 31, 32	4
Other-blame	33, 34, 35, 36	4
Total number of items		36

**2. Emotional Intelligence Scale (EIS).** Developed by [Hyde, Pethe, and Dhar \(2002\)](#), the EIS contains 34 statements, each to be rated on a five-point scale ranging from 'strongly agree' (5) to 'strongly disagree' (1). The statements relate different components of emotional intelligence like self-awareness, empathy, self-motivation, emotional stability, managing relations, integrity, self-development, value orientation, commitment, and altruistic behavior. (Table 8, Table 9). The original scale has high content validity. The split-half reliability of the scale is .88.

Table 8  
*Description of the EIS sub-scales*

Sub-scales/Dimensions	Definition
Self-awareness	Being aware of oneself.
Empathy	Feeling and understanding the other person.
Self-motivation	Being motivated internally.
Emotional stability	Reflects the state of an individual that enables him or her to have appropriate feelings about common experiences and act in a rational manner.
Managing relations	The art or science of establishing and promoting a favorable relationship in the organization.
Integrity	It refers to a quality of a person's character. It also involves being responsible for what you seek and undertake in life and being able to own up one's own faults in case of failures. It encompasses the concept of wholeness, intactness and purity about one's thoughts, feelings and actions.
Self-development	It reflects efforts toward self-fulfillment, either through formal study programs or on one's own.
Value orientation	It reflects the principles of right and wrong that are accepted by an individual or a social group.
Commitment	It is a virtue and a personal trait that is learned very early in life. Being committed is a state of mind and is determined by number of factors. It is based on one's own personal choices as well as the expectations from other people around us. It is also determined by the quality of relationship we share with people, groups, organizations or tasks that we are supposed to be committed to be.
Altruistic behavior	It is the deliberate pursuit of the interests or welfare of others or the public interest.

Table 9

*Item distribution of EIS*

Sub-scales/Divisions	Serial number of items	Total number of items
Self-awareness	6, 12, 18, 29	4
Empathy	9, 10, 15, 20, 25	5
Self-motivation	2, 4, 7, 8, 31, 34	6
Emotional stability	14, 19, 26, 28	4
Managing relations	1, 5, 11, 17	4
Integrity	16, 27, 32	3
Self-development	30, 33	2
Value orientation	21, 22	2
Commitment	23, 24	2
Altruistic behavior	3, 13	2
Total number of items		34

*Note.* Score below 51: Low emotional intelligence.  
 Score 52-84: Normal emotional intelligence.  
 Score 85 and above: High emotional intelligence.

**3. Future Aspiration Scale (FAS).** The FAS was developed by [Center for Urban Affairs and Policy Research \(1995\)](#). It measures future and career orientation and aspirations. It consists of 6 Likert type items with 4 response alternatives such as 'very important' (4), 'important' (3), 'somewhat important' (2), and 'not at all important' (1). Point values are summed for each respondent, then, divided by the total number of responses. Higher mean scores (Ranging from 1 to 4) indicate stronger aspirations in a variety of education, career, and social domains. Lower mean scores indicate lower and less diverse future aspirations. The internal consistency of the scale is .60. The scale was reported to be valid ([Center for Urban Affairs and Policy Research, 1995](#)).

**4. School Motivation Inventory (SMI).** The School Motivation Inventory (SMI) was first developed by [Kozeki \(1981\)](#) in Hungary. Subsequently, an English version of this measure was prepared by Entwistle in collaboration with Kozeki ([Kozeki & Entwistle, 1984](#); [Entwistle & Kozeki, 1985](#)). The English version of the scale was translated into Bangla and validate in Indian culture by [Roy and Biswas \(1997\)](#). The scale consists of 60 Likert type items (26 positive and 34 negative) encapsulated in ten dimensions under four broad



dimensions such as affective domain (Warmth and empathy from parents, identification with teachers, and affiliation with peers), cognitive domain (Independence and self-confidence, competence in knowledge and skills, interest and enthusiasm in activity), moral domain (Trust, conscience and self-esteem, need for order and compliance with norms, responsibility and anticipating consequences) and 'pressure and excessive demands from adults' (Table 10). Each of these ten dimensions express behavior and attitudes considered to be the expression of particular motive. Each of the dimensions of the Bangla version SMI contains 6 items. Each item has 5 response alternatives ranging from 'strongly agree' to 'strongly disagree'. These responses are assigned a score of 5 (Strongly agree) to 1 (Strongly disagree) for the positive items while reversed scoring is done for the negative items (Table 11). Higher score indicates higher level of school motivation while lower score indicates lower level of school motivation. Individual subscale scores are obtained by summing the scores belonging to a particular subscale score (Score in each subscale ranges from 6 to 30) while the total score is obtained by summing all the items under the scale (Total score ranges from 60 to 300).

The English version SMI has high internal consistency (Cronbach's  $\alpha$ ) and satisfactory validity (Correlations with teachers' ratings of different forms of motivation as well as significant relationships between school motivation and scholastic achievement). The internal consistencies of the 10 dimensions of the adapted Bangla version SMI range from .46 to .69 which express moderately high in magnitude. The Bangla version scale has content validity, concurrent validity, and factorial validity (Roy & Biswas, 1997). The correlation between the English and Bangla version ranges from .71 to .95 which indicates concurrent validity (Roy & Biswas, 1997).

Table 10  
*Description of the SMI sub-scales*

Sub-scales/Dimensions	Definitions
<b>Affective</b>	
Warmth and empathy from parents	Encouragement and interest actively shown by parents.
Identification with teachers	Feeling empathy with adults and wanting to please them.
Affiliation with peers	Enjoying collaborative work and activities with peers.
<b>Cognitive</b>	
Independence and self-confidence	Satisfaction from working things without help from others.
Competence in knowledge and skills	Rewards from recognition of developing knowledge and skills.
Interest and enthusiasm in activity	Enjoyment derived from ideas.
<b>Moral</b>	
Trust, conscience and self-esteem	Satisfaction from doing things thoroughly and well
Need for order and compliance with norms	Preferring the security of behaving according to defined rules and norms.
Responsibility and anticipating consequences	Accepting the consequences of actions and monitoring own behaviour accordingly.
<b>Pressure and excessive demands from adults</b>	Seniors never seem to be satisfied and always would like to unrealistic success.

Table 11  
*Items distribution of SMI*

Dimensions/Sub-scales	Serial number of items	Total number of items
<b>Affective</b>		
Warmth and empathy from parents	1, 11, <u>21</u> , 31, <u>41</u> , 51	6
Identification with teachers	2, 12, <u>22</u> , <u>32</u> , <u>42</u> , 52	6
Affiliation with peers	3, 13, 23, <u>33</u> , <u>43</u> , 53	6
<b>Cognitive</b>		
Independence and self-confidence	4, <u>14</u> , <u>24</u> , 34, 44, <u>54</u>	6
Competence in knowledge and skills	5, <u>15</u> , 25, <u>35</u> , <u>45</u> , 55	6
Interest and enthusiasm in activity	6, <u>16</u> , 26, 36, 46, 56	6
<b>Moral</b>		
Trust, conscience and self-esteem	7, 17, 27, <u>37</u> , 47, 57	6
Need for order and compliance with norms	8, <u>18</u> , 28, <u>38</u> , 48, <u>58</u>	6
Responsibility and anticipating consequences	<u>9</u> , 19, 29, <u>39</u> , 49, 59	6
<b>Pressure and Excessive Demands from Adults</b>	<u>10</u> , <u>20</u> , <u>30</u> , <u>40</u> , <u>50</u> , <u>60</u>	6
<b>Total number of items</b>		60

Note. Underlined items are negative items.

**5. School Engagement Scale (SES).** The SES was developed by [Fredricks, Blumenfeld, Friedel, and Paris \(1983\)](#) for measuring school engagement of elementary and middle school children. The scale consists of nineteen (19) Likert type items with five response alternatives such as ‘all of the time’ (5), ‘most of the time’ (4), ‘some of the time’ (3), ‘on occasion’ (2), ‘never’ (1) compartmentalized into three parts, such as, emotional engagement, behavioral engagement, and cognitive engagement (Table 12, Table 13). [Fredricks et al. \(1983\)](#) developed behavioral, emotional, and cognitive engagement survey items drawn from a variety of measures (e. g., [Wellborn & Connell, 1987](#); [Finn, Pannoza, & Voelkl, 1995](#); [Pintrich, Smith, Garcia, & McKeachie, 1993](#)) and also included some new items (e.g., item no. 3 and 4 under behavioral engagement; item no. 6 and 8 under emotional engagement; item no. 19 under cognitive engagement) in their scale. The obtainable score ranges from 19 to 95 where higher score indicates higher level of engagement. Among 19 items 3 items (Item no. 2, 5, 7) are negative and their scoring is therefore reversed. Individual subscale scores are obtained by summing the scores belonging to a particular subscale (Score ranges from 5 to 25 for behavioral engagement, from 6 to 30 for emotional engagement, and from 8 to 40 for

cognitive engagement) while total scores were obtained by summing the scores for all the items of the scale.

The SES has good face validity, adequate internal consistency, and adequate predictive validity. Cronbach's  $\alpha$  was chosen as the measure of internal consistency which suggests that the items hang well together as a construct. The Cronbach's  $\alpha$  values was .77 for behavioral engagement, .86 for emotional engagement, and .82 for cognitive engagement.

The descriptive analyses suggest that the three subscales are valid measures. As reported perceived teacher support was positively related to behavioral, emotional, and cognitive engagement ( $r = .35$  to  $.49$ ). Perceived peer support had similar correlations with the three engagement scales ( $r = .23$  to  $.41$ ). Work orientation was positively related to behavioral, emotional, and cognitive engagement ( $r = .37$  to  $.42$ ); task challenge was associated with the three scales ( $r = .30$  to  $.41$ ). Students' reports of engagement were more strongly correlated with teachers' reports of behavior ( $r = .29$  to  $.43$ ) than with teachers' perceptions of emotion ( $r = .15$  to  $.20$ ). The stronger correlation with behavior was not surprising because teachers tend to be better able to observe behavior than to make inferences about students' emotional state (Fredricks, Blumenfeld, & Paris, 2003). Finally, students' reports of engagement were highly correlated with school attachment ( $r = .44$  to  $.57$ ) and moderately correlated ( $r = .26$  to  $.32$ ) with perceptions of school value (Fredricks et al., 2003).

Table 12  
*Description of the SES sub-scales*

Dimensions/Sub-scales	Description
Behavioral engagement	Behavioral engagement concerns student conformity to classroom and school rules (e. g., attendance and politeness). It also refers to student involvement in classroom work and discussions and in extracurricular activities
Emotional engagement	The affective dimension is defined by student feelings, attitudes, and perceptions toward school. It mainly addresses liking school, belongingness, interests, and general enthusiasm for learning.
Cognitive engagement	Finally, the cognitive dimension concerns student psychological involvement in learning (e. g., perceptions of competency, willingness to engage in effortful learning, and task-oriented goals) and use of self regulation strategies (e. g., memorization, task planning, and supervision).

Table 13  
*Item distribution of SES*

Sub-scale/Divisions	Serial number of items	Total number of items
Behavioral engagement	1, <u>2</u> , 3, 4, <u>5</u>	5
Emotional engagement	6, <u>7</u> , 8, 9, 10, 11	6
Cognitive engagement	12, 13, 14, 15, 16, 17, 18, 19	8
Total number of items		19

*Note.* Underlined items are negative items.

**6. Children Hopelessness Scale (CHS).** The CHS was developed by Kazdin, French, Unis, Esveldt-Dawson, and Sherick (1983). This scale measures a child's negative (Hopeless) expectations for the future. It is a self-report inventory consisting of 17 items with 2 response alternatives such as 'Yes' and 'No'. 'No' responses indicate hopelessness while 'Yes' response indicate lack of hopelessness. Eight positively worded items (Items no. 1, 3, 4, 5, 6, 7, 11, and 16 are reversed coded). Responses are added to derive an overall score. A score of 17 indicates high hopelessness and a score of 0 indicates low hopelessness. The CHS has demonstrated good reliability and validity (Kazdin et al., 1983; Kazdin, Rogers, & Colbus, 1986; Spirito, Williams, Stark, & Hart, 1988) in children and adolescents up to age 17. The internal consistency values of the scale are .62 (Kazdin et al., 1983) and .78 (Wagner, Smith,

Ferguson, Horton, & Wilson, 2009), and one year stability is .48 (Kazdin et al., 1983). The item-total correlations of CHS range from .41 to .70 (Kazdin et al., 1983).

**7. Hostility Scale (HS).** The HS was developed by Derogatis, Rickels, and Rock (1976). It measures symptoms of underlying hostility, reflecting qualities such as aggression, irritability, rage, and resentment. The scale consists of 6 Likert type items with 4 response alternatives such as 'never' (1), 'once in a while' (2), 'fairly often' (3), and 'most of the time' (4). Point values are summed for each respondent and divided by the number of items. The intended range of scores is 1-4, with a higher score indicating more hostility. The internal consistency of the scale is .73. The scale was reported to be valid (Derogatis et al., 1976).

### *3.4.2 Measures of family atmosphere and school environment*

1. Family Environment Scale (FES)
2. Classroom Environment Scale (CES)

**1. Family Environment Scale (FES).** The FES was originally developed by Moos (1974). It was then translated into Bangla and adapted within the socio-cultural context of India by Dasgupta and Bose (1985). The scale focuses on the measurement and description of the inter-personal relationships among family members, on the direction of personal growth emphasized within the family and on the basic organizational structure of the family (Moos, 1974). It contains 90 items under three broad dimensions (Table 14) such as relationship subscales (Cohesion, expressiveness, and conflict), personal growth subscales (Independence, achievement orientation, intellectual cultural orientation, active recreational orientation, and moral religious emphasis) and 'system maintenance and system change' subscales (Organization and control). Each subscale has 9 items (Table 15) and each item has 2 response alternatives such as 'True' and 'False'. 'True' responses are assigned a score of 1 while 'False' responses are assigned a score of 0 (Zero). Individual subscales scores are obtained by summing the scores belonging to a particular subscale (A subscale score ranges

from 0 to 9) while total score is obtained by summing all the items under the scale (Ranges from 0 to 90). Higher score indicates higher level of family environment while lower score indicates lower level of family environment.

The original FES has good internal consistency with Cronbach's  $\alpha$ 's ranging from 0.74 to 0.87 for three dimensions and the overall stability is very good with two-week test-retest reliabilities ranging from .77 to .92 (Hill, 1995). It has good predictive and construct validity (Moos & Moos, 1981). The adapted Bangla version has high reliability and validity (Dasgupta & Bose, 1985). Each dimension of the scale had sufficient internal consistency (ranges from .50 to .70) except two dimensions such as independence and expressiveness. The scale has been reported to have factorial validity and discriminant validity (Dasgupta & Bose, 1985).

Table 14  
*Description of the FES sub-scales*

Sub-scales/Dimensions	Definition
<b>Relationship Dimensions</b>	
Cohesion	The extent to which family members are concerned and committed to the family and the degree to which family members are helpful and supportive of each other.
Expressiveness	The extent to which family members are allowed and encouraged to act openly and to express their feelings directly.
Conflict	The extent to which the open expression of anger and aggression and generally conflictual interactions are characteristics of the family.
<b>Personal Growth Dimensions</b>	
Independences	The extent to which family members are encouraged to be assertive, self-sufficient, to make their own decisions and to think things out for themselves.
Achievement-orientation	The extent to which different types of activities (i. e., school and work) are cast into an achievement oriented or competitive frame-work.
Intellectual-cultural orientation	the extent to which the family is concerned about political, social, intellectual, and cultural activities
Active-recreational orientation	The extent to which the family participates actively in various recreational and sporting activities.
Moral-religious emphasis	The extent to which the family actively discusses and emphasizes ethical and religious issues and values.
<b>System Maintenance and System Change Dimensions</b>	
Organization	Measures how important order and organization are in the family in terms of structuring the family activities, financial planning and the explicitness and clarity in regard to family rules and responsibilities.
Control	Assesses the extent to which the family is organized in a hierarchical manner, the rigidity of family rules and procedures and the extent to which family members order each other around.



Table 15  
Item distribution of FES

Dimensions/Sub-scales	Serial number of items	Total Number of items
<b>Relationship Dimensions</b>		
Cohesion	1, <u>11</u> , 21, <u>31</u> , <u>41</u> , 51, 61, 71, 81	9
Expressiveness	2, 12, <u>22</u> , 32, 42, <u>52</u> , 62, <u>72</u> , <u>82</u>	9
Conflict	3, <u>13</u> , <u>23</u> , 33, <u>43</u> , <u>53</u> , 63, 73, 83	9
<b>Personal Growth Dimensions</b>		
Independences	<u>4</u> , 14, <u>24</u> , 34, <u>44</u> , 54, 64, <u>74</u> , <u>84</u>	9
Achievement-orientation	5, 15, <u>25</u> , 35, <u>45</u> , <u>55</u> , <u>65</u> , 75, 85	9
Intellectual-cultural orientation	6, <u>16</u> , 26, <u>36</u> , 46, 56, 66, <u>76</u> , 86	9
Active-recreational orientation	<u>7</u> , 17, <u>27</u> , 37, 47, <u>57</u> , 67, 77, <u>87</u>	9
Moral religious emphasis	8, <u>18</u> , 28, <u>38</u> , 48, 58, <u>68</u> , 78, 88	9
<b>System Maintenance and System Change Dimensions</b>		
Organization	9, 19, <u>29</u> , 39, <u>49</u> , 59, 69, <u>79</u> , 89	9
Control	<u>10</u> , <u>20</u> , 30, <u>40</u> , 50, 60, 70, 80, <u>90</u>	9
Total number of items		90

Note. Underlined items are negative items.

**2. Classroom Environment Scale (CES).** The CES was originally developed by [Trickett and Moos \(1973\)](#). It was then translated into Bangla and adapted within the socio-cultural context of India first by [DasGupta and Bose \(1985\)](#) and then by [Roy & Biswas \(1997\)](#). The scale focuses explicitly on the psychosocial environment of the high school classroom and conceptualizes that environment as a dynamic social system which induces not only teacher behavior and teacher-student interaction but also student-student interactions as well ([Trickett & Moos, 1973](#)). The original CES is a 90-item Likert type scale consisting of 9 subscales such as cohesion, involvement, teacher support, task orientation, competition, order and organization, rule clarity, teacher control, and innovation. We were used here the adapted Bangla version of [Roy & Biswas \(1997\)](#) which consists of 86 items under the scale 9 dimension (Table 16, Table 17). In this version, 55 of the items indicate favorable views while the remaining 31 items indicate unfavorable views about the aspects of classroom climate. Each of the items has 5 response alternatives such as 'strongly agree', 'agree', 'undecided', 'disagree', and 'strongly disagree'. These responses are assigned a score of 4, 3,

2, 1, and 0 respectively for each favorable item while reversed scoring is done for each negative item. Higher score indicates higher level of school environment while lower score indicates lower level of school environment. Individual subscale scores are obtained by summing the scores belonging to a particular subscale (Scores varies from dimension to dimension as the dimensions are not equal) while the total score is obtained by summing all the items under the scale (Ranges from 0 to 360).

The original CES has adequate reliability and validity. Profile stability for the nine subscales over a 2-week interval, using regular public high school classrooms, ranges from .91 to .98. The CES dimensions have been shown to correlate with student satisfaction (Trickett & Moos, 1974), teacher-student verbal interactions (Kaye, Trickett, & Quinlan, 1976), and absenteeism (Moos & Moos, 1978). The internal consistencies of the 9 dimensions of the Bangla version CES range from .53 to .75 and its validity is also satisfactory (Roy & Biswas 1997). The Bangla version has been reported to be valid (Dasgupta & Bose, 1985; Roy & Biswas 1997).

Table 16  
*Description of the CES sub-scales*

Sub-scales/Dimensions	Definitions
<b>Relationships</b>	
Cohesion	Measures the extent of students' in-group integrity, cooperation in problem solving, understanding and peer relations.
Involvement	Measures the extent of students' identification with community life in school.
Teacher support	Measures the extent of the feedback effect of happy student-teacher relationship.
<b>Personal Development</b>	
Task orientation	Measures the extent of students' incorporation of school life ideology which are transacted through plan and programme of the school
Competition	Measures the extent of students' healthy rivalry for school life success.
<b>System Maintenance and System Change</b>	
Order and organization	Measures the extent of students' disciplined behavior in school to fulfill the expectations of teachers in classroom.
Rule clarity	Measures the degree of students' conformity to school norms and code of conducts.
Teacher control	Measures the degree of students' sensitivity to school life regimentation and consequent acceptance behavior.
Innovation	Measures the extent of students' creativity in classroom performance.

Table 17

*Items distribution of CES*

Dimensions/Sub-scales	Serial number of items	Total number of items
<b>Relationships</b>		
Cohesion	1, <u>10</u> , <u>19</u> , 28, 37, 45, <u>55</u> , 64, 75, 83	10
Involvement	4, 13, <u>22</u> , 31, 40, 48, 58, 67, 78	9
Teacher support	<u>9</u> , <u>18</u> , <u>27</u> , 36, 44, 53, 54, 62, 63, <u>73</u> , 74, <u>81</u> , <u>82</u> , 86	14
<b>Personal Development</b>		
Task orientation	<u>7</u> , 16, 25, <u>34</u>	4
Competition	2, <u>11</u> , 20, 29, 38, 46, 56, 65	8
<b>System Maintenance and System Change</b>		
Order and organization	<u>5</u> , <u>14</u> , <u>23</u> , <u>32</u> , <u>41</u> , <u>49</u> , 59, <u>68</u> , <u>69</u> , 79, <u>84</u> , <u>85</u>	12
Rule clarity	6, 15, 24, <u>33</u> , 42, <u>50</u> , 60, 70	8
Teacher control	<u>8</u> , <u>17</u> , <u>26</u> , <u>35</u> , 43, 51, 52, 61, 71, 72, 80	11
Innovation	3, 12, <u>21</u> , 30, <u>39</u> , <u>47</u> , 57, 66, 76, 77	10
Total numbers of items		86

*Note.* Underlined items indicate negative items.

Among the above measures CERQ, EIS, FAS, SES, CHS, and HS were translated into Bangla and adapted within the socio-cultural context of Bangladesh in the present study. And the translations of the Bangla version of the FES, CES, and SMI were further polished, and were also adapted.

### 3.5 Procedure

**3.5.1 Translating the scales into Bangla.** At first, written permission was taken from the authors of the respective scales for translating and using them in Bangladeshi culture. Then, the English version CERQ, EIS, FAS, SES, CHS, and HS were translated into Bangla and the language of the Bangla version SMI, FES, and CES were reviewed and polished. Though the majority people of Bangladesh and West Bengal of India speak in Bangla, there is a lot of differences in socio-cultural aspects of these two countries. So, the present researcher thought that the adapted Bangla versions of the SMI, FES, and CES for West Bengal of India (Roy & Biswas, 1997) would not be suitable for Bangladeshi culture. The present investigator

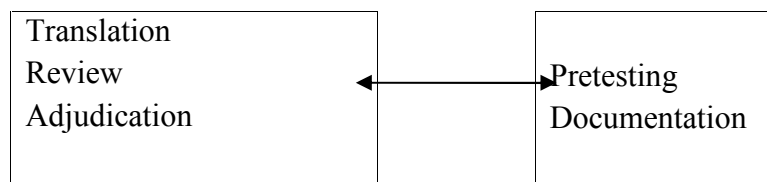
therefore felt that it is necessary to develop new and fresh adapted versions of the SMI, FES, and CES in Bangladeshi culture.

Translation procedures play a central and important role in multilingual survey projects. There are several approaches to translation. Two most widely used approaches are: Back Translation (BT) and Team Translation (TT). Evidences suggest that the TT is growing as effective for survey translation (Harkness, 2008; Pan & Puente, 2005) because it is much better in practical and theoretical terms to focus attention on first producing the best possible translation and then directly evaluating the translation produced in the target language rather than indirectly through a BT. Comparison of an original source text and a backtranslated source text provide only limited and potentially misleading insight into the quality of the target language text and audiences (Harkness, 2003; Harkness & Schoua-Glusberg, 1998; Harkness, Villar & Edwards, 2010). Even BT is rough and mechanistic assessment of translated text (Harkness, Pennel, & Schoua-Glusberg, 2004). Sometimes it has contradictory results with the original (Forward) translation. As a result, it falls short identifying the adequacy of the questions for the intended population (Blais & Gdengil, 1993). Because of these shortcomings of the BT approach TT approach was used in the present study. Translation of each scale was completed following the TRAPD (Translation, Review, Adjudication, Pretesting, and Documentation) model of TT which has the following stages.

**Stage 1: Translation.** The researcher translated the CERQ, EIS, CHS, HS, FAS, and SES, and then, sits together with the supervisor to check and modify the translations and also to polish the translation of the existing Bangla version SMI, FES, and CES. Thus, the first drafts of the scales were prepared.

**Stage 2: Review.** Six reviewers (Two experts in English, two experts in Bangla, and two experts in Psychology) independently reviewed the translations of all the scales with the translator (Researcher) and corrected or refined the translations of some of the items (Where

needed). All experts had good command both in English and Bangla. Each expert task was to inspect sentence making, wording, clarity, cultural fitness, double barrel etc. Their task was also to judge the accuracy of translation or language and the relevance/suitability of each item for measuring cognitive emotional regulation, emotional intelligence, future aspiration, school motivation, school engagement, children hopelessness, hostility, family environment, and school environment in the socio-cultural context of Bangladesh. Each expert independently rated the translation or language using 2-point scale (0 = Not correct, 1 = Correct) and the relevancy of each item using another 2-point scale (0 = Not relevant, 1 = Relevant).



*Figure 1.* The TRAPD team translation model (Source: Harkness, 2008).

**Stage 3: Adjudication.** Two adjudicators (The researcher and his supervisor) decided whether the translation is ready to move to detailed pretesting. Following the reviewer's evaluation in stage 2, accuracy of translation or language was examined by calculating for each item the Accuracy Index ( $AI = \text{Number of rating at 1} / \text{Number of experts}$ ; Table 18). The item yielding an AI of 1 ( $AI = 6/6$ ) was considered to be correctly and reliably translated (Karim & Nigar, 2014). The results are given below.

Table 18  
*Results of the Accuracy Indexes of all scales*

Scales	Total number of items	Number of items having AI =1	Number of items having AI < 1
CERQ	36	25	11
EIS	34	19	15
FAS	6	4	2
SES	18	-	18
CHS	17	6	11
HS	6	4	2
SMI	60	51	9
FES	90	78	12
CES	86	75	11

The adjudicators refined or modified 11 CERQ items, 15 EIS items, 2 FAS items, 18 SES items, 11 CHS items, 2 HS items, 9 SMI items, 12 FES items, and 11 CES items as these items had AI values < 1. The experts in stage 2 suggested some corrections to the clarity, wording, and organization of these items. The adjudicators ensured the accuracy of translation by reviewing those items (AI < 1) in the light of their comments and suggestions. They also examined the relevance/suitability of the items in Bangladeshi culture by calculating for each item the Relevance Index (RI = Number of rating at 1/Number of experts; Table, 19). They considered an item yielding an RI of 1 or .83 (RI = 6/6 or RI = 5/6) to be relevant or suitable (Karim & Nigar, 2014). The relevance results are given below.

Table 19  
*Results of the Relevance Indexes of all scales*

Scales	Total number of items	Relevant items (RI = 1 or .83)	Irrelevant (RI < .83)
CERQ	36	30	6
EIS	34	34	0
FAS	6	6	0
SES	18	18	0
CHS	17	17	0
HS	6	6	0
SMI	60	59	1
FES	90	87	3
CES	86	83	3

Because of their RI values < .83, 6 CERQ items, 1 SMI items, 3 FES items, and 3 CES items were dropped. Thus, the second draft of the Bangla version CERQ, EIS, FAS, SMI,

SES, CHS, HS, FES, and CES were finalized for piloting/pretesting on a small representative group of participants.

**Stage 4: Pretesting/pilot study.** Pilot study is important when questionnaire is translated and/or new questions are added to an existing questionnaire because an unverified questionnaire can mislead respondents during data collection and can create ambiguous or erroneous explanation during analysis (Hunt, Sparkman, & Wilcox, 1982; Braun, 2003; Bolton & Bronkhorst, 1996; U.S. Census Bureau, 2005). It helps to identify culture-specific concepts and unclear items which prevent all types of errors and problems. It also saves time and resources and reduces the selection of useless data. With this view pilot study was carried out on eleventh grade students of 'Uttara United School and College' ( $N = 100$ ). It was conducted in order to test the appropriateness of the test materials, test procedures, and how the directions of administration as well as the items of the test could be acceptable and understandable to them. Participants were requested to provide information by taking comments about the readability, feasibility, clarity, comprehensiveness, easily answerable, and 'style and formatting' of the all scales' items. The results are presented in the Table 20.

Participants were also asked to report verbally regarding difficulty of items, typos, time consuming, grammatical errors, whether easiness of instruction, questionnaire design or anything else they can spot as they go through the scales. Participants' response style, their motivation, attention during filling up questionnaires were observed and monitored. Moreover, participants' emotional reactions such as frustration, comfort level, hesitations, facial expression were also observed. Any fruitful suggestions from participants were welcomed and recorded. Some of the items of the scales were refined according to feedback of the participants. The adjudicators carried out some necessary modifications regarding wording, abstract level, unclear perspective, response style etc. However, no item was



reported to be seriously erroneous or ambiguous to be discarded. Thus, the third draft was prepared for final fielding.

**3.5.2 Data acquisition.** In Bangladesh there is no local research ethics review committee. However, steps were taken to ensure the ethics of psychosocial research. Standard data collection procedures were followed in the study. The researcher personally met each head of the selected 'schools and colleges', narrated the general purpose of the study, discussed ethical issues, and finally got permission to collect relevant data from their students. All participants were eleventh grade college students of the selected institutions (Session: 2012-2014). On the appointed date and time, the researcher went to a particular 'school and college', and then to the selected class where he was introduced by the head of the institution. At the beginning, participants were briefed about the general purpose of the study and good rapport was established with them. They were informed both verbally and in writing that the investigation is purely academic and their responses to the questionnaires would be kept confidential.

Thus, after taking their consent the paper-based survey (3<sup>rd</sup> draft) was administered to the participants. The survey components included an informed consent statement, socio-demographic section, the CERQ, EIS, FAS, SMI, SES, CHS, HS, FES and the CES. Prior to answering the questions, participants were requested to make a silent reading of the standard instructions provided with the scale regarding how to respond before going through the items or questions of the test/scale and to record their socio-demographic information (e.g., age, sex, class, family type, and socio-economic status etc.). Participants took, on average 1 hour and 20 minutes to respond to all the questionnaires. After completion of their task, the questionnaires were collected, and they were given thanks for their sincere cooperation. In this way, the surveys were administered and data were collected over a 7-months (From April to October, 2013) period from all the participants. And 64 participants were excluded from

final analyses as they provided incomplete responses to the questionnaires. Thus, the complete response rate was 93.98%.

**3.5.3 Data analyses.** Each participant's responses were scored according to the scoring principles of the CERQ, EIS, FAS, SMI, SES, CHS, HS, FES and the CES. After getting data from 1000 participants (Those who provided complete response) in this way they were fed into computer for analyzing in IBM (International Business Machines) SPSS (Statistical Package for Social Science) Statistics 21. The data analysis was done in three phase.

**Phase 1: Analyses for cross-cultural validation.** This phase is concerned with the cross-cultural validation of the scales. At first, item analysis was done followed by Exploratory Factor Analyses (EFA) and Confirmatory Factor Analyses (CFA). The participants were divided into two groups: Odd numbered participants and even numbered participants. Data for the 500 odd numbered participants were subjected to EFA whereas data for the 500 even numbered participants were subjected to CFA. However, before doing these analyses it was checked whether the data were suitable for factor analysis or not. Different experts (e.g., Cattell, 1978; Kline, 1979) recommended the minimum sample size of 100 to 250 for factor analysis. In this study we used data for 500 participants in EFA and 500 participants in CFA. Both these sample exceed the experts' recommendation. Another suggestion is that the SV (subjects-to-variable) would be from 2:1 (Guilford, 1956; Kline, 1979) to 10:1 (Everitt, 1975; Nunnally, 1978). The number of participants in this study is more than 11 times the number of FES items or variables (90; the largest scale in this study). Thus, the sample size required for factor analysis was satisfied. However before carrying out factor analysis it was examined the internal consistency by investigating inter-item correlations and item-total correlations. Then, the first set of data were analyzed in EFA, a method which is used to examine the relationships among variables without determining a particular hypothetical model which helps researchers define the construct based on the theoretical framework (Bryman &

Cramer, 2005). Then, the second set of data was analysed in CFA in order to comparison to confirm the factors extracted in EFA.

The discriminant validity was examined by correlating FES and CES with the ACERQ and LACERQ, EIS, FAS, SMI, SES, CHS, HS for both sets of data as well as for the full set of (Combining the odd-numbered and even-numbered sample) data. The reliability was also estimated by internal consistency (Cronbach's  $\alpha$ ) of the full test as well as of the subtests.

**Phase 11: Preliminary analyses.** Some preliminary analyses were done to examine the relationships of the demographic variables such as gender, socio-economic status, and family type with the major variables such as ACERQ, LACERQ, EIS, FAS, SMI, SES, CHS, and HS. For this purpose, data were analyzed in a  $2 \times 3 \times 2$  MANOVA using gender, socio-economic status, and family type as predictors, and the major variables as dependent variables. Before these analyses were done, the major assumptions of MANOVA (Multivariate Analysis of Variance) such as absence of multicollinearity among the dependent variables, multivariate normality, homogeneity of covariance, and homogeneity of error variance were tested. The multicollinearity was tested by Pearson's correlation coefficients, the multivariate normality was approximated by normal p-p plot of the residuals, the homogeneity of covariance was tested by Box's  $M$  test and the homogeneity of variance was tested by Leven's test.

#### 1. Multicollinearity of the dependent variables

Because high correlations among the dependent variables reduce the power of the tests. Tabachnick and Fidell (2013) suggest that the correlation ( $r$ ) value among the dependent variables should be moderate and should not exceed .90.

Table 21  
*Inter-scale correlation coefficients*

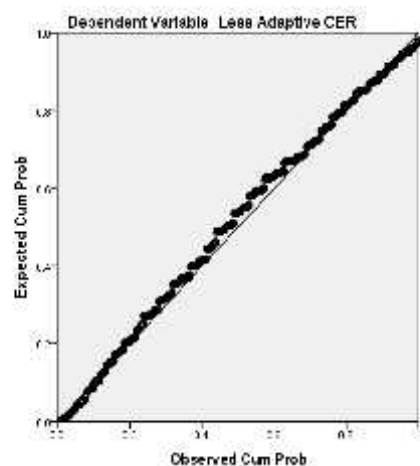
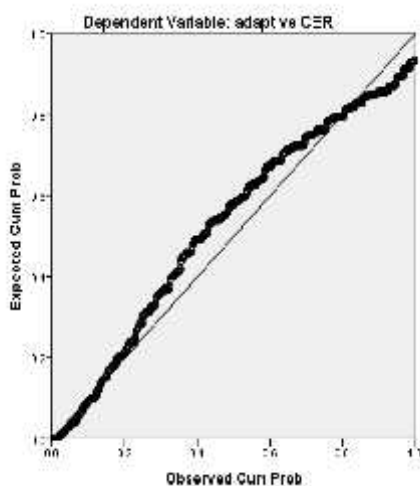
Scale	ACERQ	LCERQ	EIS	FAS	SMI	SES	CHS	HS
ACERQ	1							
LCERQ	.35**	1						
EIS	.21**	-.06	1					
FAS	.15**	.01	.26**	1				
SMI	.39**	.11**	.46**	.29**	1			
SES	.27**	.10**	.39**	.26**	.63**	1		
CHS	-.24**	.09**	-.34**	-.20**	-.45**	-.36**	1	
HS	-.10**	.07**	-.16**	-.19**	-.23**	-.23**	.26**	1

\*\*  $p < .01$  (2-tailed). \*  $p < .05$  (2-tailed).

Table 21 shows that no correlation is above .90. So there is no multicollinearity problem in the dependent variables.

2. Multivariate normality

In MANOVA it is assumed that the dependent variables (Collectively) have multivariate normality with groups. That is, for each group, each dependent variable must represent a normal distribution of scores. Furthermore, any linear combination of the dependent variables must be normally distributed. Unfortunately, multivariate normality cannot be tested by the most commonly used statistical software such as SAS and SPSS. However, if the normality of residuals for each dependent variable is achieved it can be assumed that the multivariate normality is close to achieve.



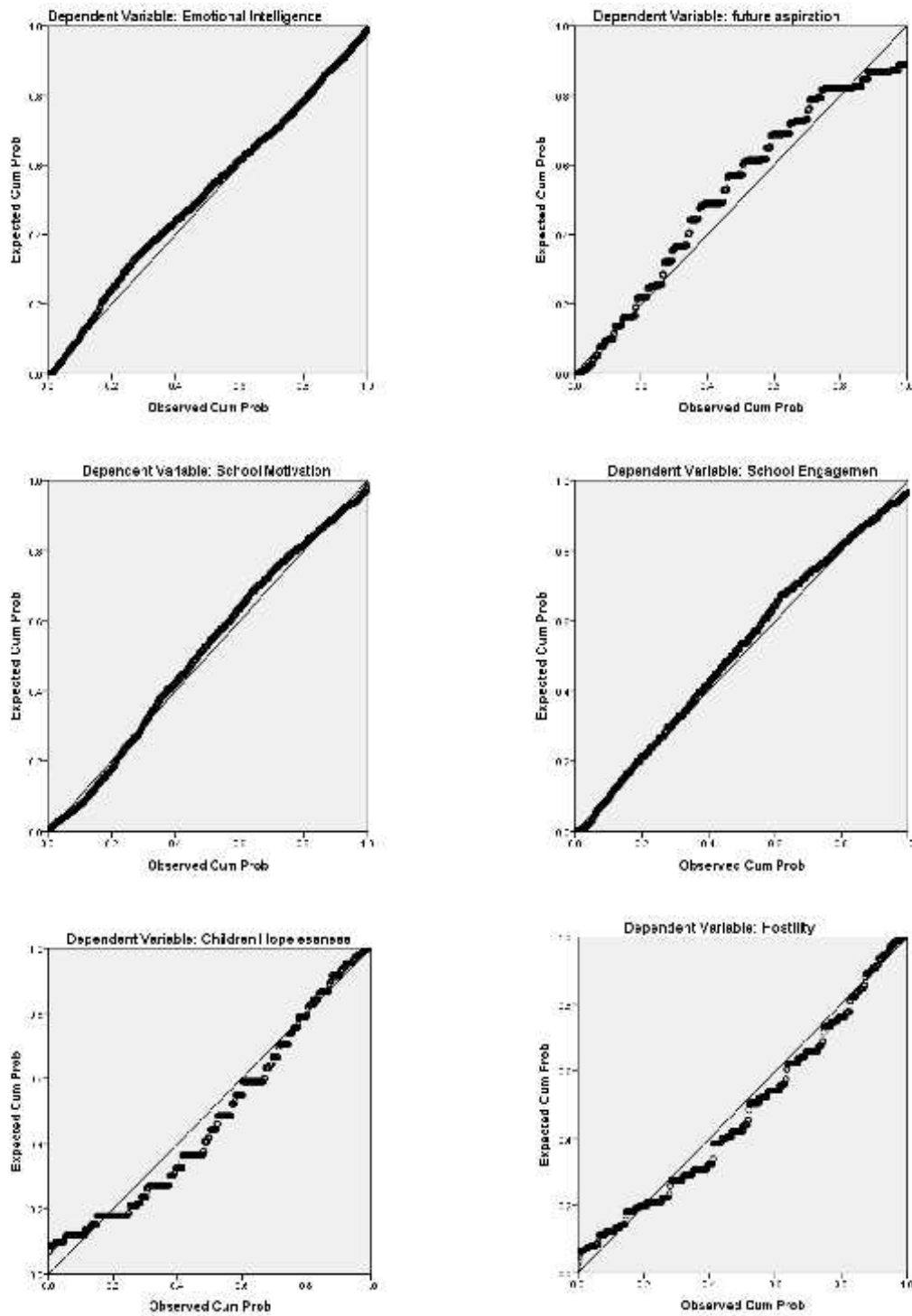


Figure 2. Normal P-P plots of standardized residuals (Independent variables: gender, socio-economic status, and family type).

The normal P-P plot of the residuals for each dependent variable in Figure 2 shows the points close to a diagonal line. Thus, assumption two is satisfied.

### 3. Homogeneity of covariance matrices

This assumption is tested by  $F$  test from Box's  $M$  statistics of equality of covariance matrices which determines whether the covariance in different groups is significantly different. Violation of this assumption may lead to an increase in Type 1 error rates as well as decreased statistical power. It is extremely sensitive to violations of the assumption of normality particularly with large sample sizes, making the Box's  $M$  test less useful than might otherwise appear. For this reason, some researchers test at the  $p = .001$ , especially when sample sizes are unequal (Tabachnick & Fidell, 2013). In the present study, sample sizes were unequal across all demographic variables such as gender, socio-economic status, and family type. Using the suggested criterion in the present study Box's  $M$  (559.06) was found to be significant ( $F_{.360, 22763.485} = 1.380; p < .001$ ). Thus assumption 3 was violated.

### 4. Homogeneity of error variances

Experts (Kaufman & McLean, 1998; Snow & Bruce, 2003) reported that if Box's  $M$  test fails to meet the assumption, then, an alternative of Box's  $M$  test is Levene's test of homogeneity of variance which tolerates violations of normality better than Box's  $M$ . The Levene's test checks homogeneity of error variance across the groups. If the Levene's test results are non-significant, this means that the assumption has been satisfied. The figures in Table 22 indicate that the assumption of the homogeneity of error variances were significant for five of the eight dependent variables. Thus, this assumption was violated in the present study.

Table 22

*Levene's test of equality error variances*

	F	df1	df2	p
Adaptive cognitive emotion regulation	2.285	11	988	.009**
Less adaptive cognitive emotion regulation	.978	11	988	.465
Emotional intelligence	1.994	11	988	.026*
Future aspiration	3.607	11	988	.000***
School motivation	2.315	11	988	.008**
School engagement	1.493	11	988	.128
Children hopelessness	2.183	11	988	.013*
Hostility	1.068	11	988	.384

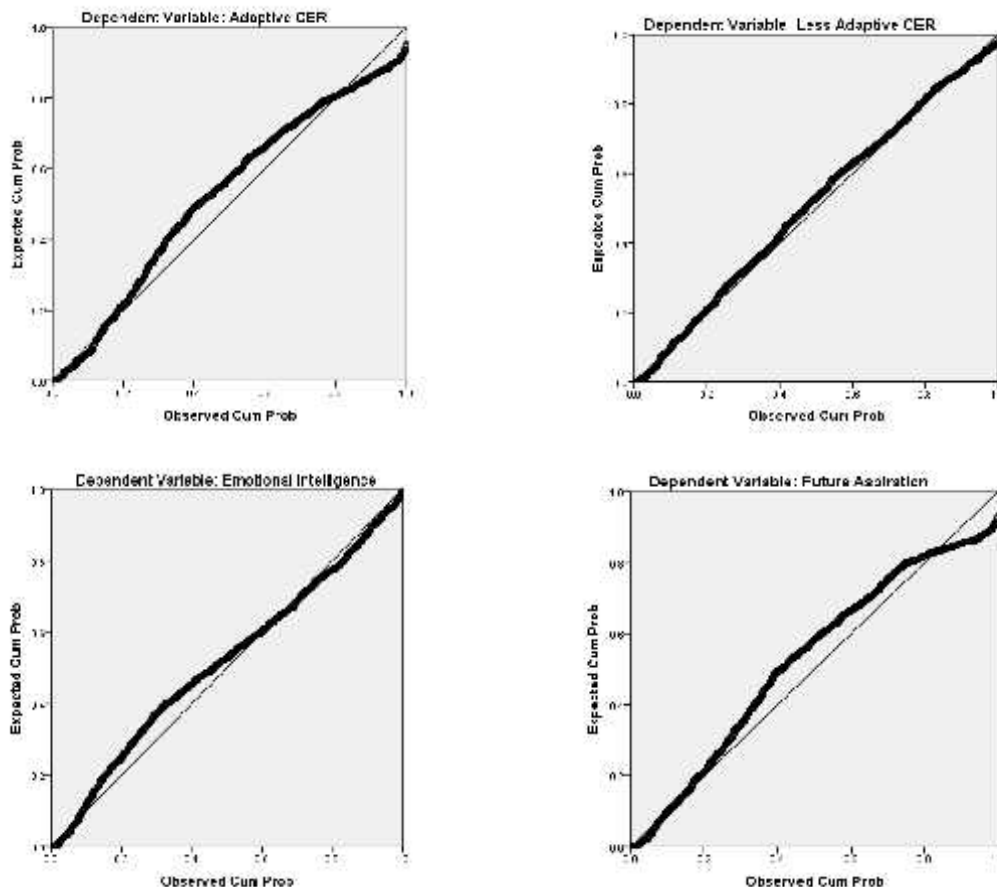
\*  $P < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

As the assumption of homogeneity of covariance and the assumption of error variance were not satisfied in the present study, Pillai's trace criterion should be used as the appropriate test for MANOVA as it is robust against the violations of any assumptions of MANOVA (Tabachnick & Fidell, 2013; Hair, Anderson, Tatham & Black, 1995).

**Phase III: Main analyses.** In order to examine the impact of family environment and school environment on adaptive cognitive emotion regulation, less adaptive cognitive emotion regulation, emotional intelligence, future aspiration, school motivation, school engagement, children hopelessness, and hostility, data were analyzed in multivariate multiple regression using family environment and school environment as predictor variables and adaptive cognitive emotion regulation, less adaptive cognitive emotion regulation, emotional intelligence, future aspiration, school motivation, school engagement, children hopelessness, and hostility as criterion variables. Before doing this analysis, the major assumptions of multivariate multiple regressions were tested. Specially, the assumption of multivariate normality of the residuals was approximated by normal p-p plot, the assumption of the linearity of criterion-predictor relationships was examined by partial regression plots, the assumption of homogeneity of variances by scatter plots, and the assumption of multicollinearity of the predictors was examined by Tolerance value and Variance Inflation Factor (VIF).

1. Multivariate normality

In MANOVA, it is assumed that the dependent variables (Collectively) have multivariate normality with groups. That is, for each group, each dependent variable must represent a normal distribution of scores. Furthermore, any linear combination of dependent variables must be normally distributed. Unfortunately, multivariate normality cannot be tested by the most commonly used statistical software such as SAS and SPSS. However, if the normality of residuals for each dependent variable is achieved it can be assumed that the multivariate normality is close to achieve. The normality of residuals for each dependent variable is given below.





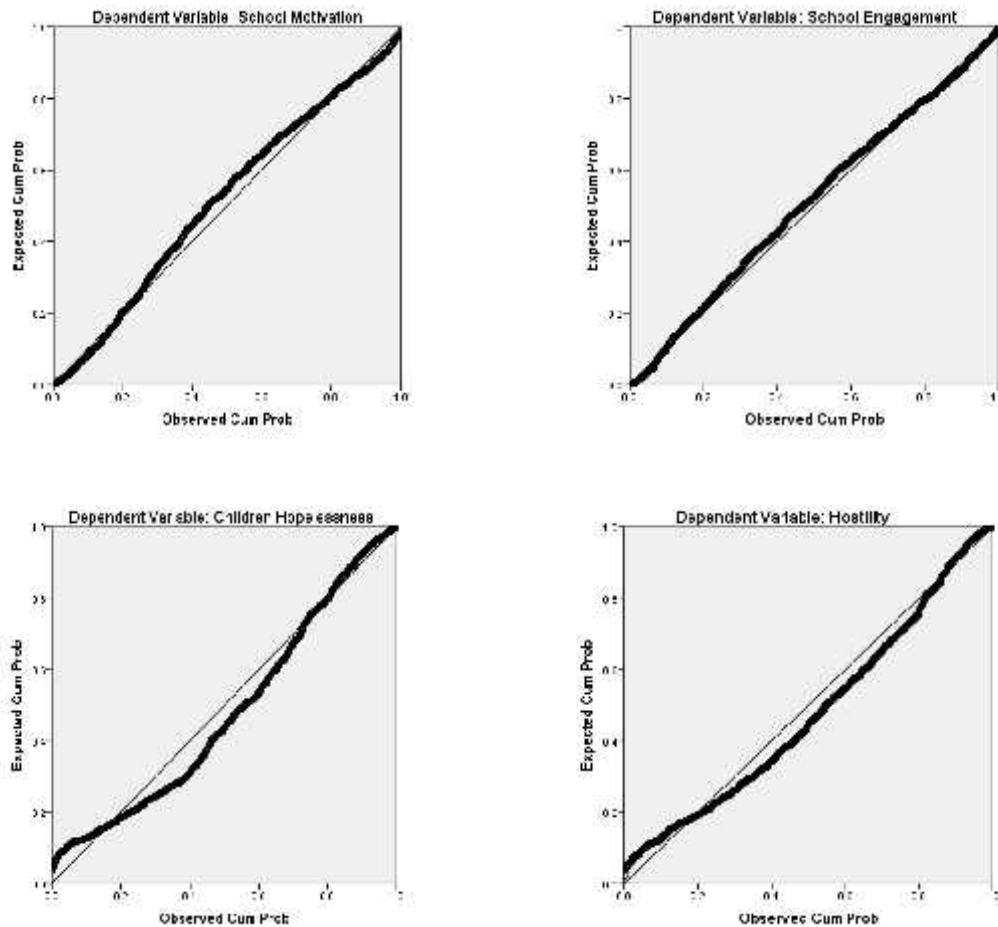
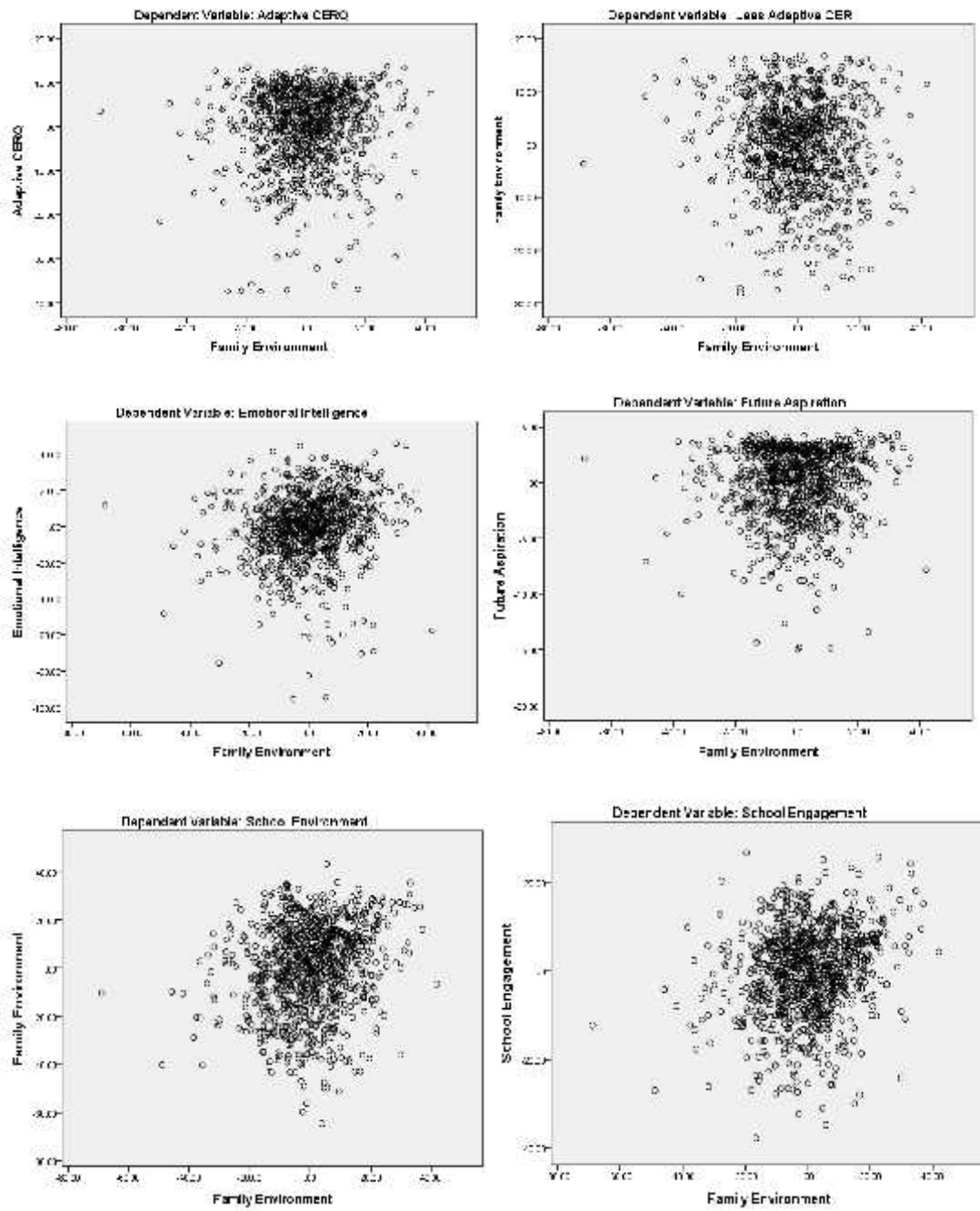


Figure 3. Normal P-P plots of standardized residuals (Independent variables: family environment and school environment).

The normal P-P plot of the residuals for each dependent variable in Figure 3 shows the points close to a diagonal line. Thus, assumption two is satisfied.

## 2. Linearity of criterion-predictor relationship

It depicts that the mean values of the outcome variable for each increment of the predictor (s) lie along a straight line. That is, the relationship which is modeling would be linear one. There are a number of ways to check linear relationship. A scatterplot using SPSS is one of them (Field, 2005) where it can be plotted the dependent variable against independent variable and visually inspected and checked whether the scatterplot seems to be linear.



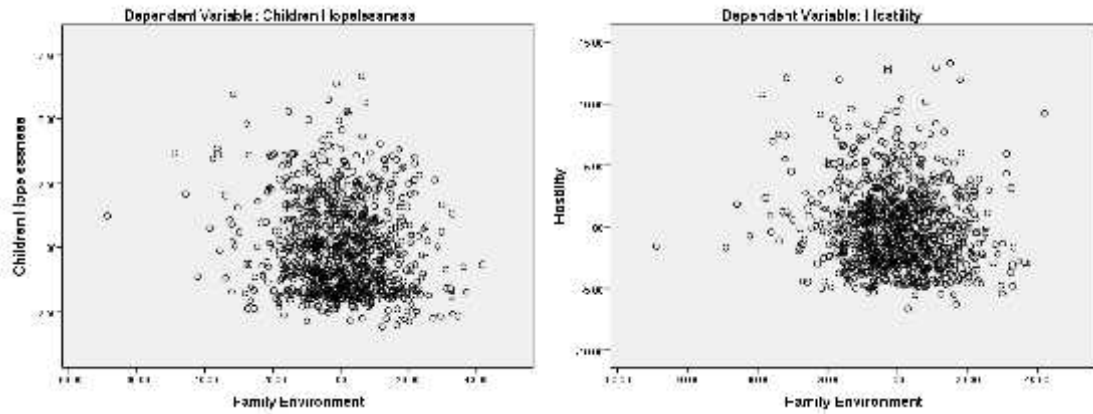
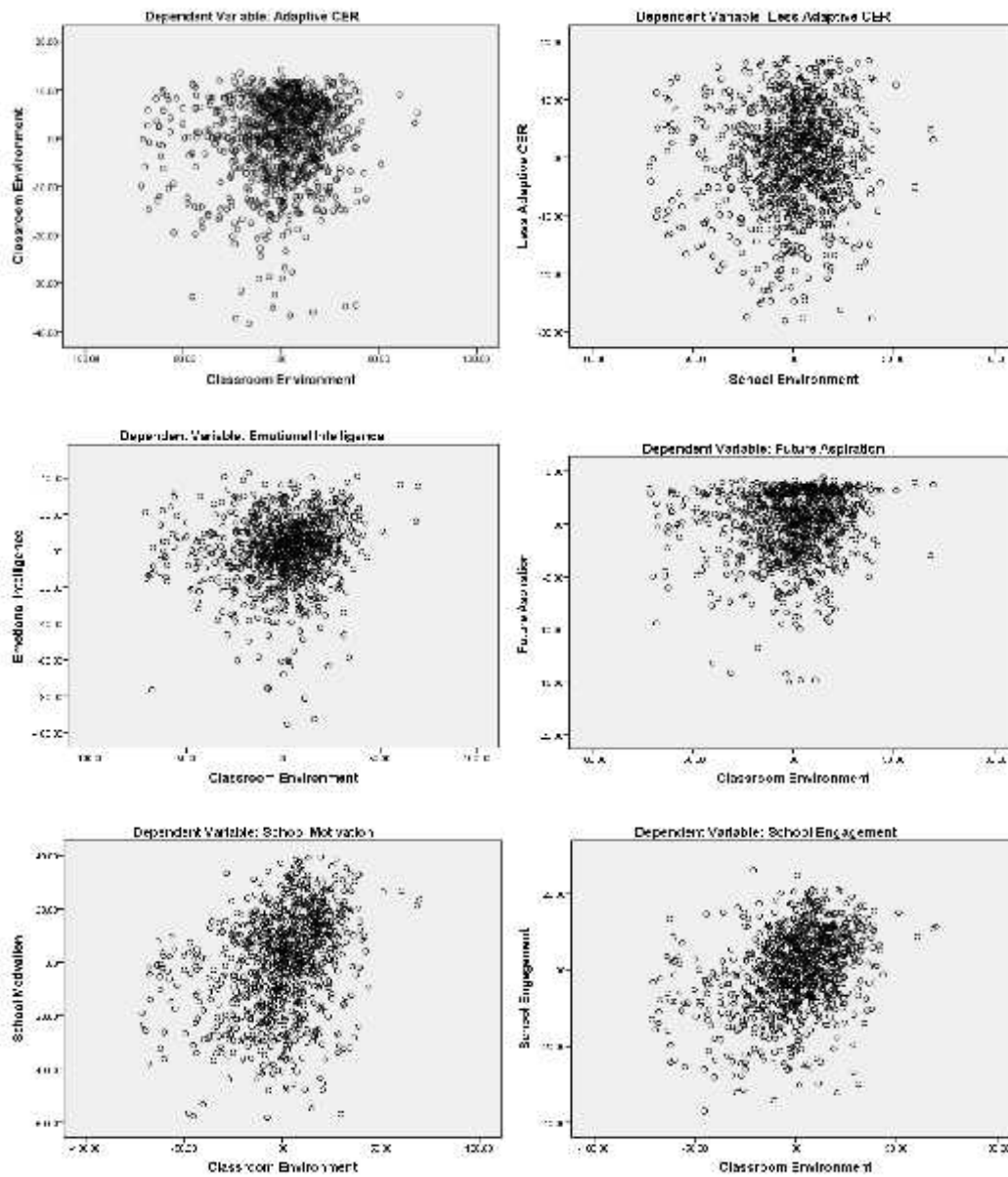


Figure 4. Partial regression plots for standardized residuals (Independent variable: family environment).



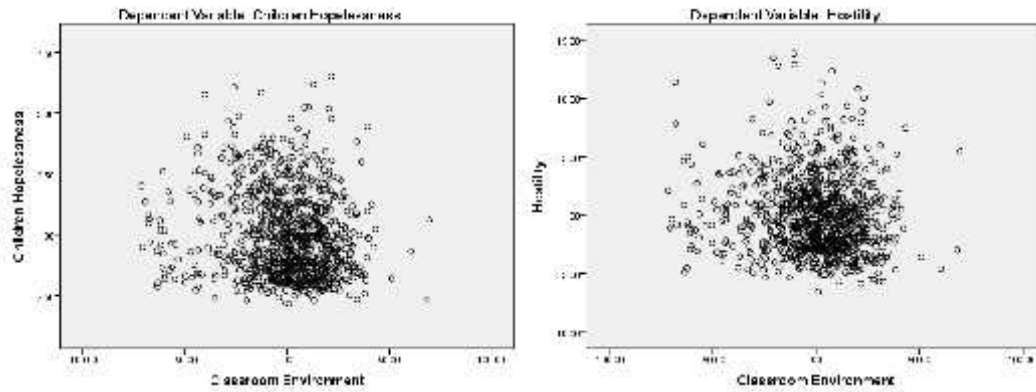
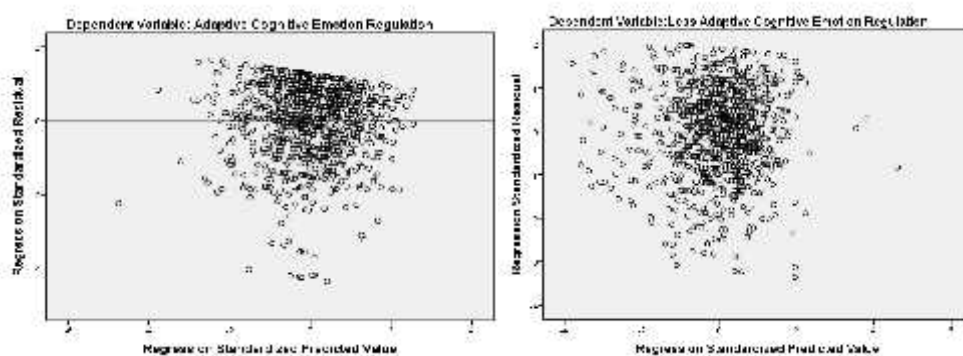


Figure 5. Partial regression plots for standardized residuals (Independent variable: school environment).

The above figure shows the criterion-predictor relationships. As demonstrated, the criterion variable such as adaptive cognitive emotion regulation, less adaptive cognitive emotion regulation, emotional intelligence, future aspiration, school motivation, school engagement, children hopelessness, and hostility are appear to be linearly related to the predictor variables such as family environment, school environment, with no visible potential outliers or influential observations (No points away from the main cluster of points). Thus, assumption two appears to be satisfied.

### 3. Homoscedasticity/Homogeneity of the variances

At each level of the predictor variable(s), the variances of the residual terms should be constant. This just means that the residuals at each level of the predictor(s) should have the same variance.



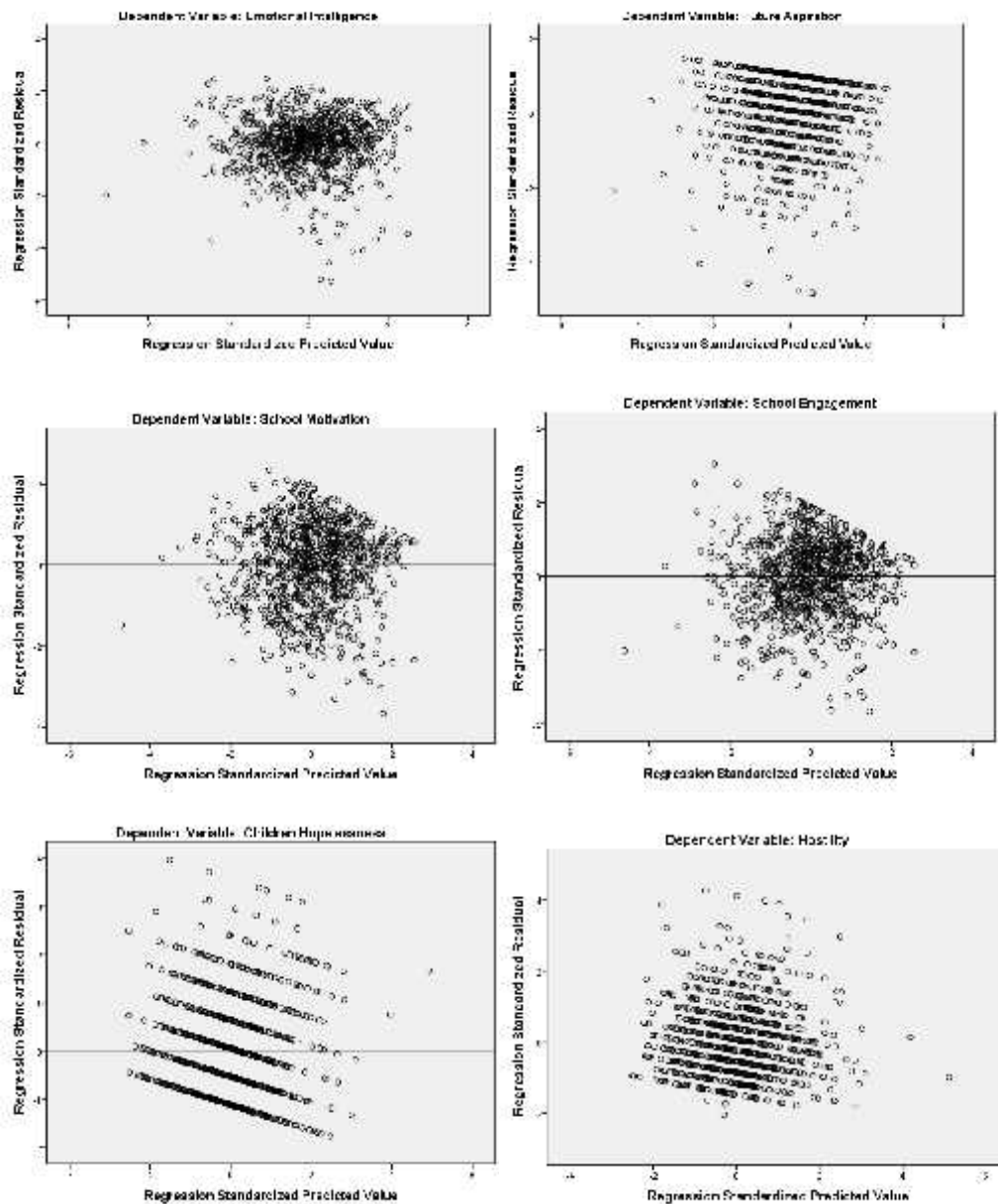


Figure 6. Scatter plots for standardized residuals.

The above scatter plots for adaptive cognitive emotion regulation, less adaptive cognitive emotion regulation, emotional intelligence, future aspiration, school motivation, school engagement, children hopelessness, and hostility indicates that the standardized residuals spread out evenly (The slope being close to ‘o’) at different levels of the standardized predicted value of the dependent variable. Thus, assumption three is satisfied.

4) Absence of multi-collinearity

Multi-collinearity implies that predictor variables should not correlate too highly (.90 or greater). Having multi-collinearity can weaken analysis. As calculation of the regression coefficients is done through matrix inversion, so the inversion would be unstable if multi-collinearity exists. In this study the correlation between family environment and school environment was .48 which is much lower than the criterion values. As recommended by [Menard \(1995\)](#) we also tested multi-collinearity of the IVs by variation inflation factor (VIF; values should be less than 10) and Tolerance value (Below .2 indicates a potential problem).

Table 23

*Tolerance and variation inflation factors of each predictor*

Predictor variables	Collinearity statistics	
	Tolerance value	Variation inflation factor
Family environment	.73	1.38
Classroom environment	.72	1.38

In this study, all VIF values are less than 10 and the tolerance statistics are all above .2. Thus, there is no multi-collinearity problem in the present data.

#### 5. Independence of observations

The assumption of independent observations has also been satisfied as each participant has only one score for each dependent variable.

## **Cross-cultural Validation of Instruments**

In order to identify the factor structure of each measure the first set of data (For 500 participants) were subjected to item analysis and exploratory factor analysis and the second set of data (For 500 participants) were subjected to confirmatory factor analysis.

### ***4.1 Factor structure of CERQ***

The CERQ has two parts: Adaptive CERQ and Less Adaptive CERQ. Theoretically, there may be negative correlation between an Adaptive CERQ item and a Less Adaptive CERQ item. Therefore, item analysis was done separately for the Adaptive CERQ items and Less Adaptive CERQ items. In order to identify the factor structure of CERQ the first set of data (For 500 participants) were subjected to item analysis and exploratory factor analysis as below.

***Item analysis (Adapted CERQ).*** The item analysis was carried out for the 16 items of the Adaptive CERQ (Four items were eliminated in the adjudication stage of translation). The correlation-matrix (*R*-matrix 1, data not shown), contained 9 negative values leading us to exclude item no. 07. Thus, 15 items were retained for factor analysis. The inter-item correlations for these items are shown in Table 24 (*R*-matrix 2). The figures in this table indicate that out of 105 inter-item correlation coefficients 101 (88.90%) were significant, the average inter-item coefficients being .26. All the item-total correlations were significant (100%) and ranged from .38 to .66 with a mean of .55.

***Item analysis (Less Adapted CERQ).*** The item analysis was carried out for the 14 items of the Less Adaptive CERQ (two items were eliminated in the adjudication stage of translation). The correlation-matrix (*R*-matrix 3, data not shown), contained 18 negative values leading us to exclude item no. 33, 34, 35, and 36. Thus 10 items were retained for factor analysis. The inter-item correlations for these items are shown in Table 25 (*R*-matrix 4). The figures in this Table indicate that out of 45 inter-item correlation coefficients 43

(95.5%) were significant, the average inter-item coefficients being .24. All the item-total correlations were significant (100%) and ranged from .46 to .67 with a mean of .57.

Thus, 25 CERQ items (15 Adaptive CERQ and 10 Less Adaptive CERQ) were retained in this stage.

Table 25

*Correlation matrix (R-matrix 4) for the Less Adaptive CERQ*

Items	cerq2	cerq3	cerq4	cerq10	cerq11	cerq12	cerq29	Cerq30	cerq31	Cerq32	Less Adaptive CERQ
cerq 2	1										
cerq 3	.384**	1									
cerq 4	.494**	.366**	1								
cerq10	.194**	.198**	.250**	1							
cerq11	.162**	.253**	.214**	.397**	1						
cerq12	.128**	.205**	.167**	.364**	.462**	1					
cerq29	.131**	.105*	.125**	.142**	.140**	.067	1				
cerq30	.228**	.236**	.251**	.377**	.289**	.268**	.365**	1			
cerq31	.168**	.124**	.144**	.288**	.182**	.170**	.249**	.374**	1		
cerq32	.050	.151**	.128**	.281**	.334**	.276**	.239**	.365**	.496**	1	
Less Adaptive CERQ	.528**	.522**	.563**	.616**	.591**	.532**	.464**	.671**	.580**	.584**	1

Note. n = 500; average inter-item coefficients .24; the average inter-item coefficients .57.

\*\* p < .01 level (2-tailed). \* p < .05 level (2-tailed).

**Exploratory factor analysis.** In order to examine whether data were suitable for factor analysis measures of sampling adequacy were carried out on the 25-item CERQ. Inspection of the R-matrix revealed a good number of coefficients .30 and above (33.33%) in the Adaptive CERQ part and 26.67% in the Less Adaptive CERQ part. The determinant of the R-matrix was .001 (> .00001; Field, 2005). This indicates that there is no multicollinearity (very highly correlated variables) or singularity (Perfectly correlated variables) problem in the data. The KMO (the Kaiser-Meyer-Olkin) measure of sampling adequacy for these set of variables was .85 which falls in the range of being meritorious and suitable (.85 > .80; Kaiser, 1970). Bartlett's test of sphericity indicated a  $\chi^2$  value of 3439.633 (p < .001). All this together supports the factorability of the R-matrix. Data for the 25-item CERQ were therefore subjected to the EFA. Method of PC (Principal Component) with varimax rotation was used. The initial analysis with Eigen value > 1.00



(the Kaiser-Guttman criterion) extracted 7-factor solution, accounting for 59.99% of the total variance (data not shown). However, [Floyd and Widaman \(1995\)](#) suggested that the scree test ([Cattle, 1966](#)) is a more accurate method for retaining factors than Kaiser-Guttman criterion. However, an inspection of the scree plot indicates a clear break after the 4<sup>th</sup> component (Figure 7a) leading us to retain 4 components.

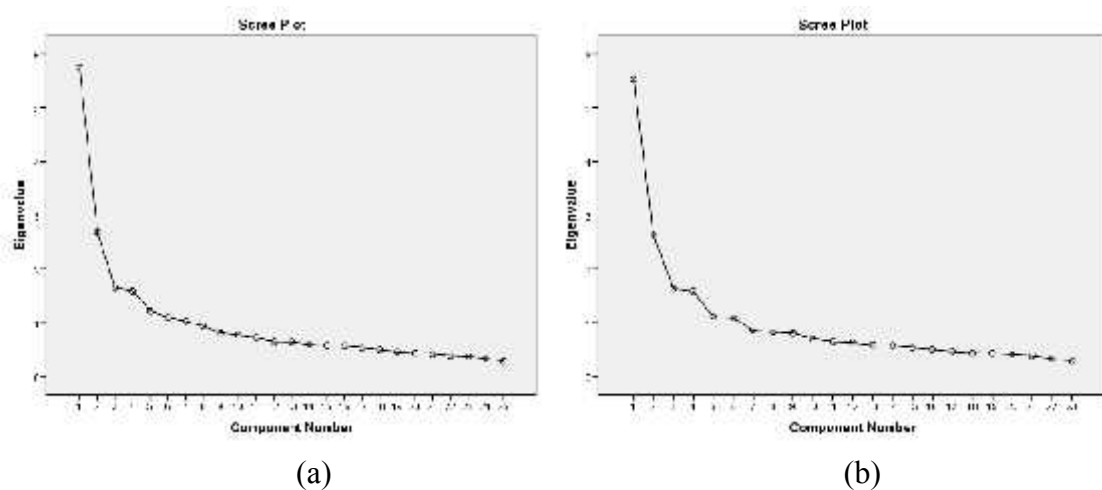


Figure 7. The scree plots generated in EFA: (a) for 25 items, and (b) for 23 items.

Considering Cattle's view, data were subjected to another EFA limiting the number of factors to 4 with all factor loadings  $< .40$  suppressed. The four factors together accounted for 46.61% of the total variance (Data not shown), but the item 08 and 14 loaded at  $< .40$ . This low factor loading indicated that perhaps item 08 and 14 can not measure cognitive emotion regulation in the socio-cultural context of Bangladesh. After discarding these items data were further subjected to EFA limiting the number of factors to 4 with all factor loadings  $< .40$  suppressed (Figure 7b). A four-factor solution of the CERQ was identified. Now the variance explained by the factors increased from 46.61 to 49.45 (2.84%).

These four factors which were rotated to position of maximum orthogonality in 6 iterations explained together 49.45% of the total variance (Table 26) which was deemed to be the most statistically and conceptually appropriate and more interpretable to the CERQ.

Table 26

*Rotated factor matrix for a reduced set of CERQ items (Item 08 and 14 discarded)*

Item numbers	Factors loading			
	F1	F2	F3	F4
Item 15	.70			
Item 16	.80			
Item 17	.83			
Item 18	.66			
Item 19	.69			
Item 21	(.45)	.49		
Item 22		.56		
Item 23		.57		
Item 25		.61		
Item 26		.64		
Item 27		.73		
Item 28		.69		
Item 10			.59	
Item 11			.51	
Item 12			.47	
Item 29			.53	
Item 30			.68	
Item 31			.68	
Item 32			.73	
Item 2				.76
Item 3				.64
Item 4				.78
Item 5				.66
Eigenvalue	3.44	2.86	2.81	2.27
Variance explained	14.95	12.41	12.22	9.88
Cronbach's (standardized) $\alpha$	.84	.78	.74	.72

*Note.*  $n = 500$ .

Factor loadings  $< .40$  were suppressed.

Items corresponding to the parenthesized loadings did not conceptually fit with the corresponding factors.

Extraction method: varimax with Kaiser normalization.

Rotation converged in 6 iterations.

Factor 1 accounts for 14.95% of the variance, Factor 2 accounts for 12.41% of the variance, Factor 3 accounts for 12.22% of the variance, and Factor 4 accounts for 9.88% of the variance. Before labelling the factors we identified one pair of cross-loadings between the first and second factors. That is item 21 was cross-loaded on Factor 1 and Factor 2 with the loadings of .45 and .49 respectively. We grouped item 21 under Factor 2, the factor of its bigger loading and best conceptual fit. Thus, Factor 1 comprises item no 15, 16, 17, 18, and 19 which we termed as 'Refocus on Positive Thought and

Planning'; Factor 2 comprises item no. 21, 22, 23, 25, 26, 27, and 28 which we termed as 'Positive Reappraisal and Putting into Perspective'; Factor 3 comprises item no. 10, 11, 12, 29, 30, 31, and 32 which we termed as 'Rumination and Catastrophizing'; and Factor 4 comprises item no. 2, 3, 4, and 5 which we termed as 'Self-blame'. Among these factors, Factor 1 and Factor 2 represent the Adaptive CERQ part and Factor 3 and Factor 4 represent the Less Adaptive CERQ part of the scale.

***Confirmatory factor analysis (CFA).*** The CFA was carried out on the second set of data ( $n = 500$ ) using IBM SPSS AMOS (Version 20) to corroborate the factor structure identified in the EFA. The model estimation method used for all analyses was Maximum Likelihood Method (MLM) with the item covariance matrix as input data. Goodness-of-fit was assessed using a number of conventional fit indices such as Chi-square ( $\chi^2/df$ ), Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), Root Mean Square Residual (RMR), and Goodness-of-Fit Statistic (GFI). The cut-off criteria for the fit indices are given below (Table 27).

Table 27  
*Cut-off criteria for the fit indices in CFA*

Fit Index	Description	Cut-offs
$\chi^2$	Indicates the discrepancy between hypothesized model and data; Test the null hypothesis that the estimated covariance-variance matrix deviates from the sample variance-covariance matrix only because of sampling error.	$p > .05$
$\chi^2/df$	Because the chi-square test is sensitive to sample size and is only meaningful if the degrees of freedom are taken into account, its value is divided by the number of degrees of freedom.	$\leq 3$ good; $< 5$ sometimes permissible
RMSEA	Shows how well the model fits the population covariance matrix, taken the number of degrees of freedom into freedom.	$< .05$ good; $.05 - .10$ moderate; $> .10$ bad
RMR	It is the square root of the discrepancy between the sample covariance matrix and the model covariance matrix.	$\leq .09$
CFI	Shows how much better the model fits, compared to a baseline model, normally the null model, adjusted for the degrees of freedom.	$> .95$ great; $\geq .90$ traditional; $> .80$ sometimes permissible
GFI	Comparison of the squared residuals from prediction with the actual data, not adjusted for the degrees of freedom.	$> .90$

Source: Reviewed from Ping (2004); Bagozzi and Yin (1988); Hair, Black, Babin and Anderson (2010); Tatar and Saltukoglu, (2010); Walker, (2010).

Hu and Bentler (1999) suggested that at least two of these indices should be used to determine goodness of model fit (Hair et al., 2010; Tatar & Saltukoglu, 2010; Walker, 2010).

**Confirmatory factor analysis of CERQ.** The CFA in the present study revealed that the four-factor model identified for the CERQ in EFA is a good fit to the data. The obtained fit statistics are depicted in Table 28.

Table 28  
*Model fit indices obtained in CFA for 23-item CERQ*

	$\chi^2$	df	$\chi^2/df$	RMSEA	RMR	CFI	GFI
Unmodified fit indices	707.5*	224	3.12	.06	.11	.86	.88
Modified fit indices	580.99*	221	2.63	.06	.10	.90	.90

$n = 500$ . \*  $p < .05$ .

The above table indicates that the the value of  $\chi^2$  was significant. Experts reported that a non-significant  $\chi^2$  value is difficult to achieve with large sample size (Byrne, 1994; Pang, Strodl, & Oei, 2013). The sample size in the present study was moderate to relatively large ( $n = 500$ ). To demonstrate good fit the chi-square statistics for our measurement model normalized by degrees of freedom ( $\chi^2/df$ ) should not exceed 5.0. The normalized  $\chi^2$  value is 3.12 ( $< 5$ ; Chang & Law, 2008). The values of RMSEA and CFI fit well the reference values (Table 27). However, the values of RMR and GFI (Unmodified) lie below the criterion values. So, Modification Indices (MIs) were examined which identified similar theoretical content between some of the items. Parameters with high MIs  $> 35$  have been noted as potential areas for structure misfit leading to poor fit the model. Three modification index values greater than 35 were identified. Generally, the level of MIs depends on the extreme position of the parameter value and it varies from research to research. For example, Walker (2010) considered  $>100$  as MIs and Lowe, Ang, & Loke (2011) considered  $> 20$  as MIs in their reseach. Three modification indices indicated three correlated measurement errors, one between items 18 and 19, one between items 22 and 23, and a third one between item 31 and 32. So, the modified CFA was run again allowing the items in each pair to covary. Then, the model was quiet improved. The modified fit indices indicated an acceptable model fit to the data [ $\chi^2(221) = 580.99$ , RMSEA = .06, RMR = .10, CFI = .90, GFI = .90]. The factor structure of the four-factor solution is given in Figure 8.

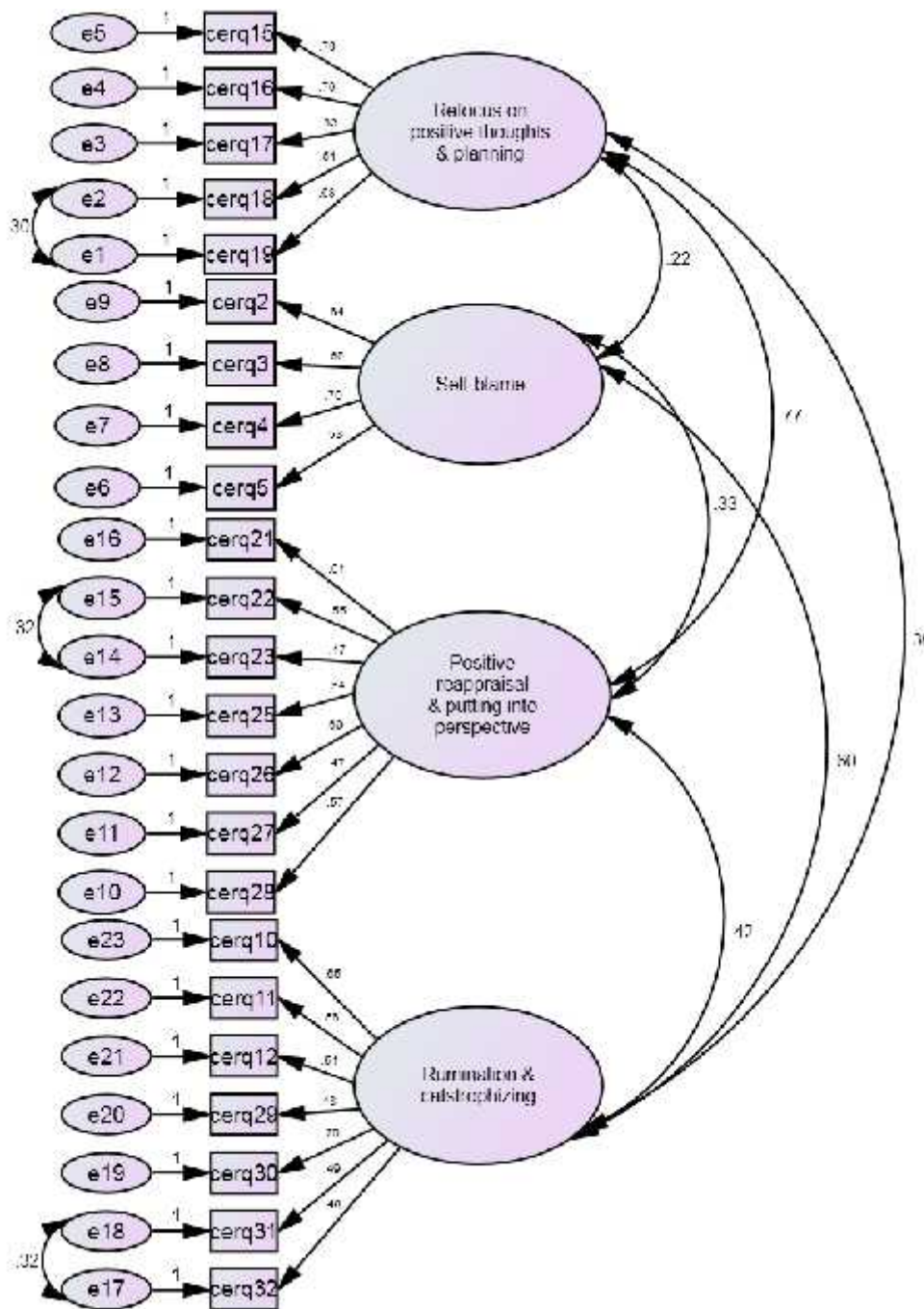


Figure 8. Factor structure of the four-factor solution for the CERQ (Standardized parameter).

Note. Items 18 and 19 were allowed to covary due to their similar content (thinking), and high modification indices. This was also done for items 22 and 23 (self-confident), and items 31 and 32 (negative incident) (Barke, Nyenhuis., & Kroner-Herwig, 2012; Balkin, Harris, Freeman., & Huntington, 2013; Lowe et al., 2011; Walker, 2010).

The above figure displays standardized parameters. As we see, factor loadings of the four factors varied from .47 to .83. Particularly good at assessing their latent variables were items which have the largest factor loadings. These are cerq17 (.83) for latent

variable 'Refocus on Positive Thoughts and Planning', cerq4 (.70) for 'Self-blame', cerq26 (.69) for 'Positive Reappraisal and Putting into Perspective' and cerq30 (.70) for 'Rumination and Catastrophizing'. The lowest factor loading was for cerq23 (.47) and cerq27 (.47) under the latent variable 'Positive Reappraisal and Putting into Perspective'. The correlation between latent variables varied from .22 to .77. The lowest correlation ( $r = .22$ ) was found between 'Refocus on Positive Thoughts and Planning' and 'Self-blame'. The highest correlation ( $r = .77$ ) was found between 'Refocus on Positive Thoughts and Planning' and 'Positive Reappraisal and Putting into Perspective'. This correlation indicates that these two latent variables are inseparable among four factor model of CERQ.

The standardized factor coefficients obtained in CFA are presented in comparison with those found in EFA in the following table. The figures in this table indicate that the coefficients obtained in CFA are fairly consistent with those obtained in EFA.

Table 29

*Factor loadings from exploratory and confirmatory factor analysis on CERQ (Four-factor model)*

Item numbers	Factors loadings								
	F1: Refocus on positive thoughts & planning		F2: Positive reappraisal & putting into perspective		F3: Rumination & Catastrophizing		F4: Self-blame		
	EFA	CFA	EFA	CFA	EFA	CFA	EFA	CFA	
Item 15	.70	.70							
Item 16	.80	.79							
Item 17	.83	.83							
Item 18	.66	.54							
Item 19	.69	.63							
Item 21	(.45)		.49	.61					
Item 22			.56	.55					
Item 23			.57	.47					
Item 25			.61	.54					
Item 26			.64	.69					
Item 27			.73	.47					
Item 28			.69	.57					
Item 10					.59	.65			
Item 11					.51	.56			
Item 12					.47	.54			
Item 29					.53	.48			
Item 30					.68	.70			
Item 31					.68	.49			
Item 32					.73	.48			
Item 2							.76	.64	
Item 3							.64	.60	
Item 4							.78	.70	
Item 5							.66	.53	
Eigenvalue	3.44		2.86		2.81		2.27		
Variance explained (%)	14.95		12.41		12.22		9.88		

#### 4.2 Factor structure of EIS

**Item analysis.** The item analysis was carried out for the 34 items of the EIS (No item was eliminated in the adjudication stage of translation). The correlation matrix (*R*-matrix 5, Table 30) contained no negative values and out of 561 inter-item correlation coefficients 555 (98.93%) were significant, the average inter-item coefficients being .28. All the item-total correlations were significant and ranged from .33 to .84 with a mean of .58. Thus, all the items were retained in this stage.

**Exploratory factor analysis.** In order to examine whether data were suitable for factor analysis measures of sampling adequacy were carried out on the 34-item EIS. Inspection of the *R*-matrix revealed a good number of coefficient .30 and above (39.92%). The KMO measure of sampling adequacy for these set of variables was .92 which falls in the range of



being superb ( $.92 > .90$ ; Kaiser, 1970). Bartlett's test of sphericity indicated a  $\chi^2$  value of 7274.93 ( $p < .001$ ). All this together supports the factorability of the  $R$ -matrix. Data for the full set of EIS were therefore subjected to EFA. Method of PC with varimax rotation was used. The initial analysis with Eigen value  $> 1.00$  (the Kaiser-Guttman criterion) extracted 7-factor solution accounting for 56.61% of the total variance (Data not shown). However, an inspection of scree plot indicates a clear break after the 7<sup>th</sup> component (Figure 9a), leading us to retain 7 components.

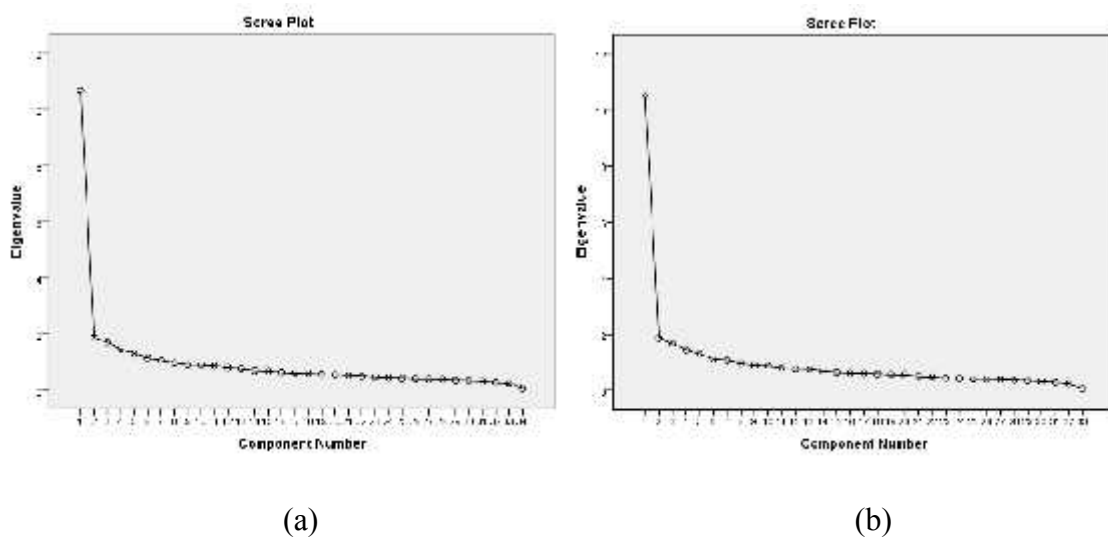


Figure 9. The scree plots generated in EFA: (a) for 34 items, and (b) for 33 items.

Considering Cattle's view, data were subjected to another EFA, limiting the number of factors to 7 with all factor loadings  $< .40$  suppressed. These seven factors which were rotated to position of maximum orthogonality in 10 iterations explained together 56.60% (Table 31) of the total variance of measured variable (Data not shown), but item no. 28 loaded at  $< .40$ . The low factor loading indicates that perhaps item 28 can not measure emotional intelligence in Bangladesh culture. After discarding this item data were further subjected to EFA with all factor loadings  $< .40$  suppressed limiting the number of factors to 7. Again, a seven-factor solution (Figure 9b) of the EIS were identified which was deemed to be the most statistically and conceptually appropriate and more interpretable to the EIS.

Table 31  
 Rotated factor matrix for a reduced set of EIS items (Item 28 discarded)

Item number	Factor loadings						
	F1	F2	F3	F4	F5	F6	F7
Item 02	.60						
Item 03	.67						
Item 11	.58						
Item 12	.65						
Item 23		.44					
Item 24		.53					
Item 25		.59					
Item 26		.89					
Item 27		.87					
Item 04	(.43)		.61				
Item 05			.73				
Item 06			.74				
Item 07			.71				
Item 14				.64			
Item 15				.60			
Item 16				.63			
Item 17				.53			
Item 21				.60			
Item 22				.49			
Item 08					.64		
Item 09					.73		
Item 10					.43		
Item 13					.48		
Item 01					.44		(-.42)
Item 29	(.45)					.41	
Item 30						.70	
Item 31						.48	
Item 32	(.48)					.42	
Item 33						.65	
Item 34						.58	
Item 18							.63
Item 19							.52
Item 20							.44
Eigenvalue	3.22	3.19	2.96	2.94	2.45	2.37	1.83
Variance explained (%)	9.78	9.66	8.98	8.92	7.41	7.20	5.54

Note. n = 500.

Factor loadings < .40 were suppressed.

Items corresponding to the parenthesized loadings did not conceptually fit with the corresponding factors.

Extraction method: varimax with Kaiser normalization.

Rotation converged in 10 iterations.

Factor 1 accounts for 9.78% of the variance, Factor 2 accounts for 9.66% of the variance, Factor 3 accounts for 8.98% of the variance, Factor 4 accounts for 8.92% of the variance, Factor 5 accounts for 7.41% of the variance, Factor 6 accounts for 7.20% of the variance and Factor 7 accounts for 5.54% of the variance. Before labeling the factors we identified four pairs of cross-loadings between the factors. Specifically, item 29 was cross loaded on Factor 1 and Factor 6 with the loadings of .45 and .41 respectively; item 32 was cross loaded on Factor 1 and Factor 6 with the loadings of .48 and .42 respectively; item 1 was cross loaded on Factor 5 and Factor 7 with the loadings of .44 and -. 42 respectively;

and item 4 was cross loaded on Factor 1 and Factor 3 with the loadings of .43 and .61 respectively. We grouped both item 29 and item 32 under Factor 6, the factor of their smaller loadings but best conceptual fit; item 1 under Factor 5, the factor of its greater loadings and best conceptual fit, and item 4 under Factor 3, the factor of its greater loading and best conceptual fit.

Factor 1 comprises item no. 2, 3, 11, and 12 which we termed as ‘Self-confidence and Analytic’; Factor 2 comprises item no. 23, 24, 25, 26, and 27 which we termed as ‘Self-awareness and Development’; Factor 3 comprises item no. 4, 5, 6, 7 which we termed as ‘Empathy’; Factor 4 comprises item no. 14, 15, 16, 17, 21, and 22 which we termed as ‘Emotional Stability’; Factor 5 comprises item no. 1, 8, 9, 10, and 13 which we termed as ‘Enthusiasm and Firmness’; Factor 6 comprises item no. 29, 30, 31, 32, 33, and 34 which we termed as ‘Integrity and Commitment’; and finally Factor 7 comprises item no. 18, 19, and 20 which we termed as ‘Survival’.

**Confirmatory factor analysis of EIS.** The CFA in the present study revealed that the seven-factor model identified for the EIS in EFA is a good fit to the data. The obtained fit statistics are depicted in Table 32.

Table 32  
*Model fit indices for 33-item EIS obtained in CFA*

	$\chi^2$	df	$\chi^2/df$	RMSEA	RMR	CFI	GFI
Modified fit indices	1512.7*	474	3.19	.07	.09	.84	.84
Unmodified fit indices	1325.99*	469	2.83	.06	.08	.87	.86

*n* = 500. \**p* < .05.

The above table indicates that the value of  $\chi^2$  was significant (*p* < .05). The normalized  $\chi^2$  value is 2.83 (< 5). The values of RMSEA and RMR fit well the reference values (Table 27). However, the values of CFI and GFI (Unmodified) lie below the criterion values. So, MIs were examined which identified similar theoretical content between some of the items. Parameters with high MIs > 21 have been noted as potential areas for structure misfit leading to poor fit the model. Five modification index values

greater than 21 were identified which indicated five correlated measurement errors, one between items 2 and 3, one between items 8 and 9, one between item 14 and 15, one between item 23 and 24 and a fifth one between item 23 and 25. So, when CFA was run allowing these items in each pair to covary the model was quite improved. The modified fit indices indicated an acceptable model fit to the data [ $\chi^2(469) = 1325.99$ , RMSEA = .06, RMR = .08, CFI = .87, GFI = .86]. The factor structure of the seven-factor solution is given in Figure 10.

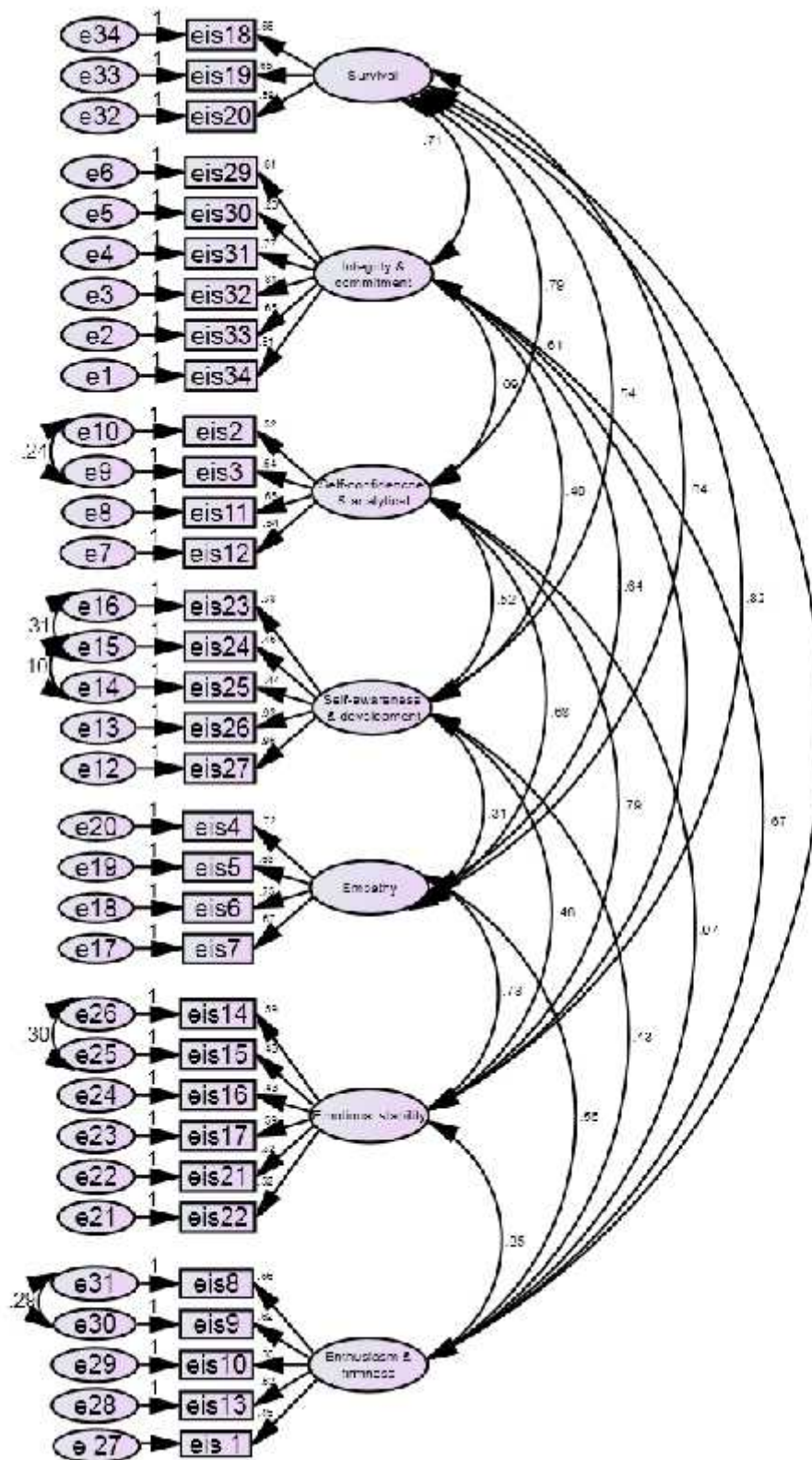


Figure 10. Factor structure of the seven-factor solution for the EIS (Standardized parameter).

Note. Items 2 and 3 were allowed to covary due to their similar content (self-understanding) and modification indices. This was also done for items 8 and 9 (ability), items 14 and 15 (feelings) and items 23 and 24 (positive attitudes) and items 23 and 25 (achievement). (Barke et al., 2012; Balkin et al., 2013; Lowe et al., 2011; Walker, 2010).

The above figure displays standardized parameters. As we see, factor loadings of the seven factors varied from .23 to .98. Particularly good at assessing, their latent variables were items which have the largest factor loadings. These are eis26 (.98) for the latent variable 'Self-awareness and Development', eis19 (.65) for Survival, eis32 (.81) for 'Integrity and Commitment', eis3(.64) and eis12 (.64) for 'Self-confidence and Analytic', eis6 (.75) for Empathy, eis14 (.59) and eis17 (.59) for 'Emotional Stability', and eis9 (.62) and eis13 (.62) for 'Enthusiasm and Firmness'. The lowest factor loading was for item 30 (.23) under the latent variable 'Integrity and Commitment'. The correlations among latent variables varied from .31 to .97. The lowest correlation ( $r = .32$ ) was found between 'Self-awareness and Development' and 'Empathy'. The highest correlation ( $r = .97$ ) was found between 'Self-confidence and Analytic' and 'Enthusiasm and Firmness'. This correlation indicates that these two latent variables are inseparable among the seven-factor model of EIS.

The standardized factor coefficients obtained in CFA are presented in comparison with those found in EFA in Table 33. The figures in this table indicate that the coefficients obtained in CFA are fairly consistent with those obtained in EFA.

Table 33  
*Factor loadings from exploratory and confirmatory factor analysis on EIS (Seven-factor model)*

Item number	Factor loadings													
	F1: Self-confidence & analytic		F2: Self-awareness & development		F3: Empathy		F4: Emotional stability		F5: Ethusiasm & firmness		F6: Integrity & Commitment		F7: Survival	
	EFA	CFA	EFA	CFA	EFA	CFA	EFA	CFA	EFA	CFA	EFA	CFA	EFA	CFA
Item 02	.60	.52												
Item 03	.67	.64												
Item 11	.58	.68												
Item 12	.65	.64												
Item 23			.44	.38										
Item 24			.53	.46										
Item 25			.59	.44										
Item 26			.89	.98										
Item 27			.87	.96										
Item 04	(.43)				.61	.72								
Item 05					.73	.68								
Item 06					.74	.75								
Item 07					.71	.67								
Item 14							.64	.59						
Item 15							.60	.48						
Item 16							.63	.43						
Item 17							.53	.59						
Item 21							.60	.32						
Item 22							.49	.52						
Item 08									.64	.56				
Item 09									.73	.62				
Item 10									.43	.56				
Item 13									.48	.62				
Item 01									.44	.45				
Item 29	(.45)										.41	.61		(-.42)
Item 30											.70	.23		
Item 31											.48	.77		
Item 32	(.48)										.42	.81		
Item 33											.65	.65		
Item 34											.58	.51		
Item 18													.63	.55
Item 19													.52	.65
Item 20													.44	.59
Eigenvalue	3.22		3.19		2.96		2.94		2.45		2.37		1.83	
Variance explained (%)	9.78		9.66		8.98		8.92		7.41		7.20		5.54	

### 4.3 Factor Structure of FAS

*Item analysis.* The item analysis was carried out for the 6 items of the FAS (No item was eliminated in the adjudication stage of translation). The correlation matrix (*R*-matrix 6, Table 34) contained no negative values and all the 15 inter-item correlation coefficients were significant, the average inter-item coefficients being .39. All the item-total correlations were significant and ranged from .68 to .74 with a mean of .73.

Table 34  
*Correlation matrix (R-matrix 6) for FAS*

Items	fas1	fas 2	fas 3	fas 4	fas 5	fas 6	FAS
fas1	1						
fas 2	.566**	1					
fas 3	.405**	.432**	1				
fas 4	.308**	.317**	.391**	1			
fas 5	.302**	.396**	.366**	.514**	1		
fas 6	.265**	.371**	.319**	.342**	.490**	1	
FAS	.676**	.713**	.679**	.693**	.742**	.683**	1

Note. n = 500; average inter-item correlation = .39; average item-total correlation = .73.

\*\*P < .01(two-tailed).

**Exploratory factor analysis.** In order to examine whether data were suitable for factor analysis measures of sampling adequacy were carried out on the 6 item-FAS. Inspection of the R-matrix revealed that most of the coefficients .30 and above (93%). The determinant of the R-matrix was .478 (> .00001; Field, 2005). This indicates that there is no multicollinearity (Very highly correlated variables) or singularity (perfectly correlated variables) problem in the data. The KMO measure of sampling adequacy for these set of variables was .73 which falls in the range of being suitable (.73 > .70; Kaiser, 1970). Bartlett's test of sphericity indicated a  $\chi^2$  value of 366.368 ( $p < .001$ ). All this together supports the factorability of the R-matrix. Data for the full set of FAS items were therefore subjected to EFA. Method of PC with varimax rotation was used. The initial analysis with Eigen value > 1.00 (the Kaiser-Guttman criterion) extracted 1-factor solution consistently with the scree plot (Figure 11).



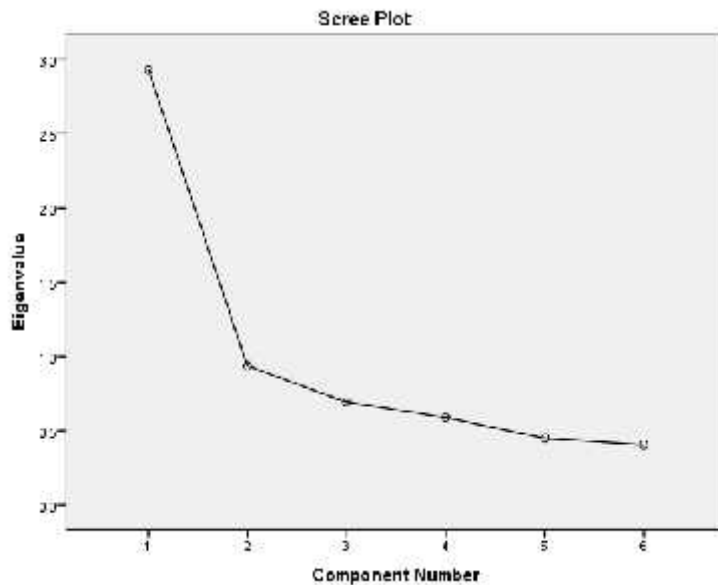


Figure 11. The scree plots generated in EFA for 6 items.

**Confirmatory factor analysis.** The CFA in the present study revealed that the one-factor model identified for the FAS in EFA is good fit to the data. The fit statistics are depicted in Table 35.

Table 35

Model fit indices for 6-item FAS obtained in CFA

	$\chi^2$	df	$\chi^2/df$	RMSEA	RMR	CFI	GFI
Obtained fit indices	132.4*	9	14.71	.17	.05	.82	.93
Modification fit indices	24.558*	7	3.51	.07	.02	.98	.98

*n* = 500. \* *p* < .05.

The above table indicates that the value of  $\chi^2$  was significant (*p* < .05). The normalized  $\chi^2$  value is 3.51 (< 5). The values of RMR, CFI, and GFI fit well the reference values (Table 27). However, the value of RMSEA (Unmodified) lies below the criterion values. So, MIs were examined which identified similar theoretical content between some of the items. Parameters with high MIs > 34 have been noted as potential areas for structure misfit leading to poor fit the model. Two modification index values greater than 34 were identified which indicated two correlated measurement errors, one between items 1 and 2, and the second one between items 5 and 6. So, when the CFA was run allowing the items in each pair to covary the model was quite improved. The

modified fit indices indicated a good model fit to the data [ $\chi^2(7) = 24.558$ , RMSEA = .07, RMR = .02; CFI = .98, GFI = .98]. The factor structure of the one-factor solution is given in Figure 12.

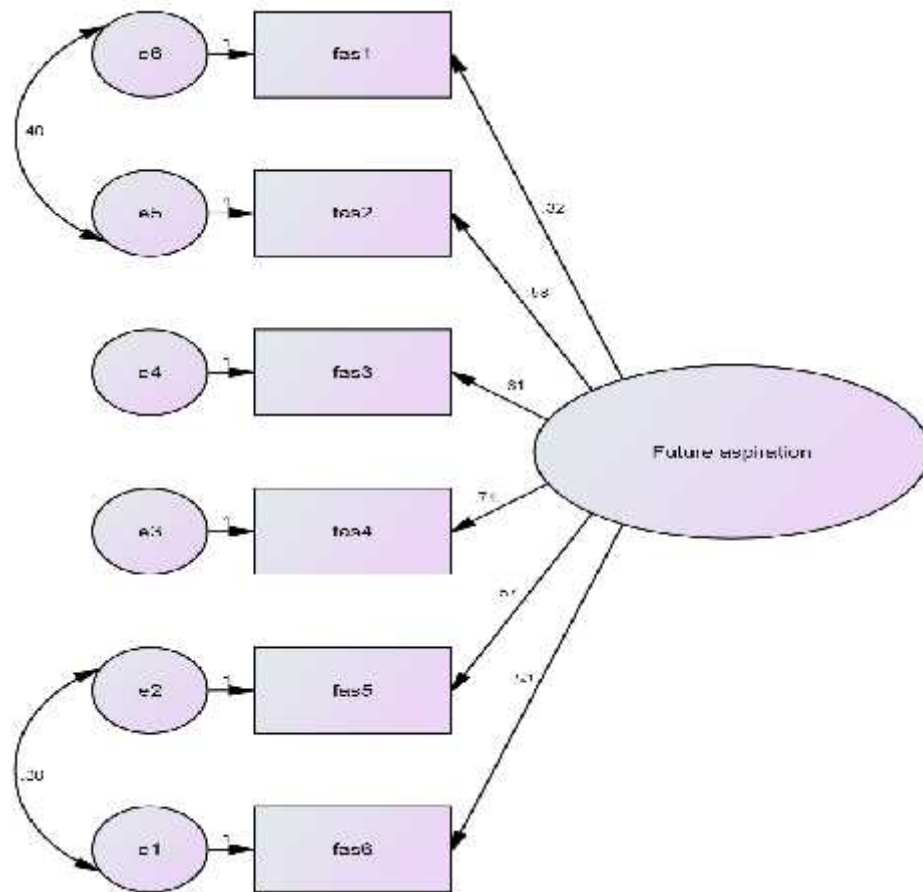


Figure 12. Factor structure of the one-factor solution for the FAS (Standardized parameter).

Note. Items 1 and 2 were allowed to covary due to their similar content (study in college) and high modification indices. This was also done for items 5 and 6 (consideration). (Barke et al., 2012; Balkin et al., 2011; Lowe et al., 2011; Walker, 2010).

The above figure displays standard parameters. As we see, factor loadings of the one-factor varied from .32 to .74. Particularly good at assessing its latent variable (Future Aspiration) were items which have the largest factor loading. This was for fas4 (.74) under the latent variable Future Aspiration. On the other hand, the lowest factor loading was for fas1 (.32).

#### 4.4 Factor structure of SMI

In order to have a single school motivation score for each participants, the items under the 'Making Excuse and Blaming Others' dimension of the scale were scored in reversed order (Because this dimension measures negative aspect of school motivation unlike the two other dimensions which measure positive aspect of school motivation).

**Item analysis.** The item analysis was carried out for the 59 items of the SMI (One item was eliminated in the adjudication stage of translation). The correlation-matrix (*R*-matrix 7, data not shown), contained 469 negative values leading us to excluded 27 items (Item no.06, 08, 09, 10, 12, 14, 15, 16, 18, 20, 21, 22, 23, 24, 30, 33, 37, 38, 40, 43, 45, 46, 50, 54, 58, 59, and 60). Thus, 32 items were retained for factor analysis. The inter-item correlations for these items are shown in Table 36 (*R*-matrix 8). The figures in this table indicate that, out of 496 inter-item correlation coefficients 441 (88.9%) were significant, the average inter-item coefficients being .24. All the item-total correlations were significant (100%) and ranged from .32 to .58 with a mean of .52.

**Exploratory factor analysis.** In order to examine whether data were suitable for factor analysis measures of sampling adequacy were carried out on the 32-item SMI. Inspection of the *R*-matrix revealed a good number of coefficients .30 and above (35.28%). The determinant of the *R*-matrix was .0000186 ( $>.00001$ ; Field, 2005). This indicates that there is no multicollinearity (Very highly correlated variables) or singularity (Perfectly correlated variables) problem in the data. The KMO measure of sampling adequacy for these set of variables was .92 which falls in the range of being superb (.92  $>.90$ ; Kaiser, 1970). Bartlett's test of sphericity indicated a  $\chi^2$  value of 5318.21 ( $p < .001$ ). All these together support the factorability of the *R*-matrix. Data for the 32-item SMI were therefore subjected to EFA. Method of PC with varimax rotation was used. The initial analysis with Eigen value  $> 1.00$  (the Kaiser-Guttman criterion) extracted 7-factor solution, accounting for 54.94% of the total

variance (Data not shown). However, an inspection of the scree plot indicates a clear break after the 3<sup>rd</sup> component (Figure 13a) leading us to retain 3 components.

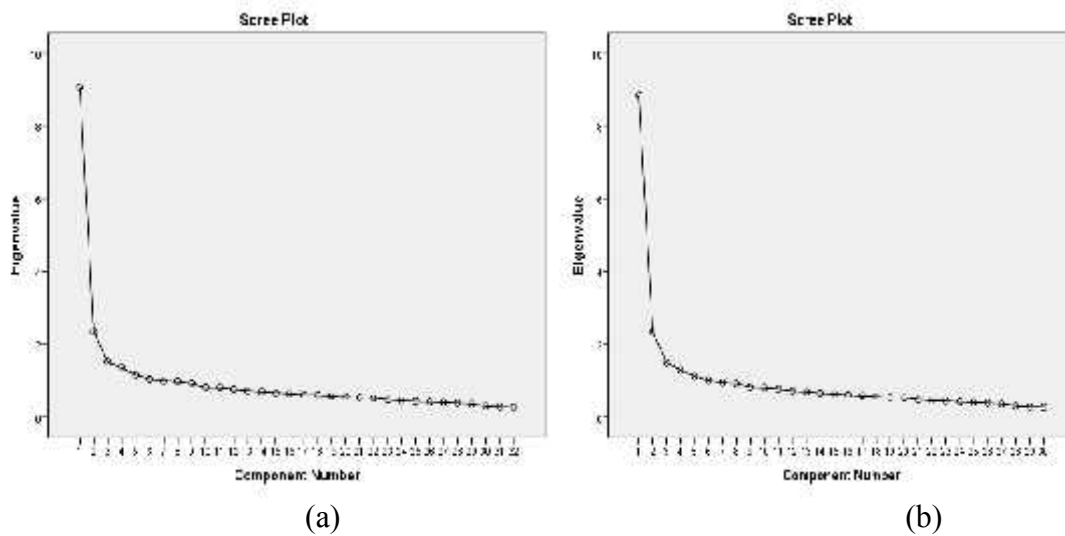


Figure 13. The scree plots generated in EFA: (a) for 32 items, and (b) for 30 items.

Considering Cattle’s view, data were subjected to another EFA limiting the number of factors to 3 with all factor loadings < .40 suppressed. The three-factor together accounted for 40.49% of the total variance (Data not shown), but the item 02 loaded at < .40. The low factor loading indicates that perhaps item 02 can not measure of school motivation in Bangladesh culture. After discarding this item data were further subjected to EFA with all factor loadings < .40 suppressed limiting the number of factors to 3 (Figure 13a). A three-factor solution of the SMI was identified. Now, the variance explained by the factors increased from 40.49 to 41.36 (.87%), but item 01 showed loaded at < .40. Discarding item 01 the data were further run in EFA with all factor loadings < 40 suppressed without specifying the number of factors. Once again, scree plot (Figure 13b) is similar but total variance further increased from 41.36% to 42.35% (.99%) which was deemed to be the most statistically and conceptually appropriate and more interpretable to the SMI. These three factors which were rotated to position of maximum orthogonality in 6 iterations explained together 42.35% of the total variance (Table 37).

Table 37

*Rotated factor matrix for a reduced set of SMI items (Item 01 and 02 discarded)*

Item numbers	Factor loadings		
	F1	F2	F3
Item 05	.43		
Item 17	.46		
Item 25	.47		
Item 26	.65		
Item 27	.57	(.47)	
Item 28	.57	(.43)	
Item 29	.53		
Item 31	.48		
Item 34	.48		
Item 36	.58		
Item 44	.44		
Item 48	.60		
Item 49	.61		
Item 52	.59		
Item 53	.67		
Item55	.48		
Item 56	.74		
Item 03		.48	
Item 04		.45	
Item 07		.59	
Item 11		.74	
Item 13		.56	
Item 19		.59	
Item 51		.56	
Item 57		.52	
Item 32			.71
Item 35			.50
Item 39			.61
Item 41			.71
Item 42			.75
Eigenvalue	5.80	4.16	2.75
Variance explained	19.32	13.85	9.17
Cronbach's (standardized) $\alpha$	.90	.80	.72

*Note.*  $n = 500$ .

Factor loadings < .40 were suppressed.

Items corresponding to the parenthesized loadings did not conceptually fit with the corresponding factors.

Extraction method: varimax with Kaiser normalization.

Rotation converged in 6 iterations.

Factor 1 accounts for 19.32% of the variance, Factor 2 accounts for 13.85% of the variance, and Factor 3 accounts for 9.17% of the variance. Before labelling the factors we identified two pairs of cross-loadings between the factors. Specifically, item 27 was

cross-loaded on Factor 1 and Factor 2 with the loadings of .57 and .47 respectively; item 28 was cross-loaded on Factor 1 and Factor 2 with the loadings of .57 and .43 respectively. Both the items were grouped under Factor 1, the factor of their larger loading and best conceptual fit. Thus, Factor 1 comprises item no. 5, 17, 25, 26, 27, 28, 29, 31, 34, 36, 44, 48, 49, 52, 53, 55, and 56 which labeled as ‘Commitment, Interest, and Enthusiasm; Factor 2 comprise item no. 3, 4, 7, 11, 13, 19, 51, and 57 which we termed as ‘Affiliation with Parents, and Peers’; and Factor 3 comprises item no. 32, 35, 39, 41, and 42 which we termed as ‘Making Excuse and Balaming Others’.

**Confirmatory factor analysis of SMI.** The CFA in the present study revealed that the three-factor model identified for the SMI in EFA is a good fit to the data. The fit statistics are depicted in Table 38.

Table 38  
*Model fit indices obtained in CFA for 30-item SMI*

	$\chi^2$	df	$\chi^2/df$	RMSEA	RMR	CFI	GFI
Unmodified fit indices	1034.29*	402	2.57	.06	.08	.86	.87
Modified fit indices	867.4*	398	2.18	.05	.07	.90	.89

*n* = 500. \* *p* < .05.

The above table indicates that the value of  $\chi^2$  was significant (*p* < .05). The normalized  $\chi^2$  value is 2.57 (< 5). The values of RMSEA and RMR fit well the reference values (Table 27). However, the values of CFI and GFI (Unmodified) lie below the criterion values. So, MIs were examined which identified similar theoretical content between some of the items. Parameters with high MIs > 33 have been noted as potential areas for structure misfit leading to poor fit the model. Four modification index values greater than 33 were identified which indicate four correlated measurement errors, one between items 11 and 13, one between items 25 and 26, one between item 48 and 49, and a fourth one between item 53 and 56. So, when the CFA was run allowing the items in each pair to covary the model was quite improved. The modified fit indices indicated an

acceptable model fit to the data [ $\chi^2(398) = 867.4$ , RMSEA = .05, RMR = .07; CFI = .90, GFI = .89]. The factor structure of the three-factor solution is given in Figure 14.

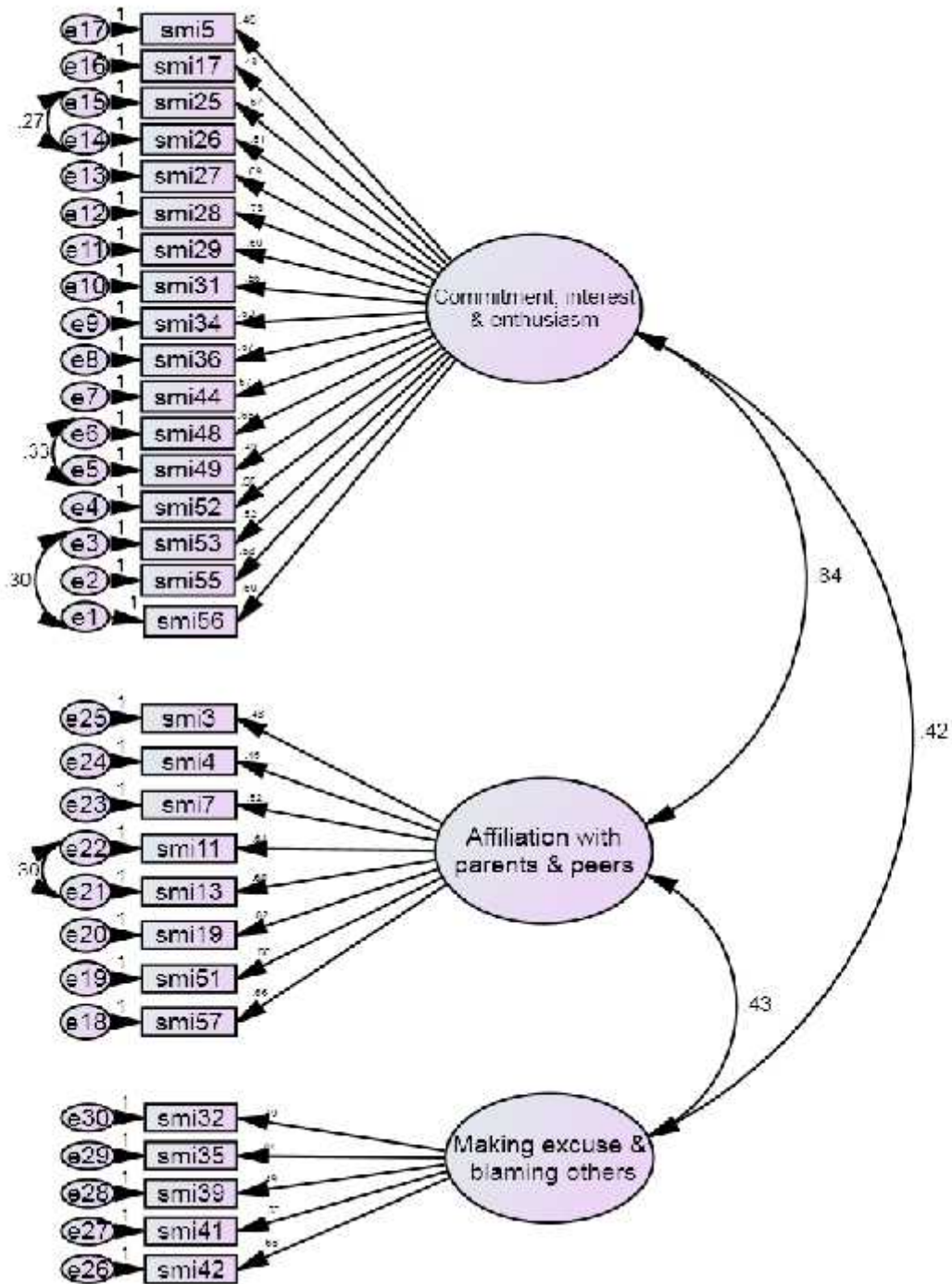


Figure 14. Factor structure of the three-factor solution for the SMI (Standardized parameter).

Note. Items 11 and 13 were allowed to covary due to their similar content (happiness) and high modification indices. This was also done for items 25 and 26 (knowledge), items 48 and 49 (try to work), and item 53 and 56 (joyful) (Barke et al., 2012; Balkin et al., 2013; Lowe et al., 2011; Walker, 2010).

The above figure displays standard parameters. As we see, factor loadings of the three factors varied from .45 to .73. Particularly good at assessing their latent variables were items which have the largest factor loadings. These are smi28 (.73) for the latent variable 'Commitment, Interest, and Enthusiasm', smi51 (.66) and smi57 (.66) for 'Affiliation with Peers and Parents', smi42 (.66) for 'Making Excuse and Blaming Others'. The lowest factor loading was for smi4 (.45) and smi5 (.45)) for the latent variable 'Commitment, Interest, and Enthusiasm' and 'Affiliation with Peers and Parents'. Correlation between latent variables varied from .42 to .84. The lowest correlation ( $r = .42$ ) was found between 'Commitment, Interest, and Enthusiasm' and 'Making Excuse and Blaming Others'. The highest correlation ( $r = .84$ ) was found between 'Commitment, Interest, and Enthusiasm' and 'Affiliation with Peers and Parents'. The correlation indicates that these two latent variables are inseparable among the three-factor model of SMI.

The standardized factor coefficients obtained in CFA are presented in comparison with those found in EFA in Table 39. The figures in this table indicate that the coefficients obtained in CFA are fairly consistent with those obtained in EFA.



Table 39

*Factor loadings from exploratory and confirmatory factor analysis on SMI (Three-factor model)*

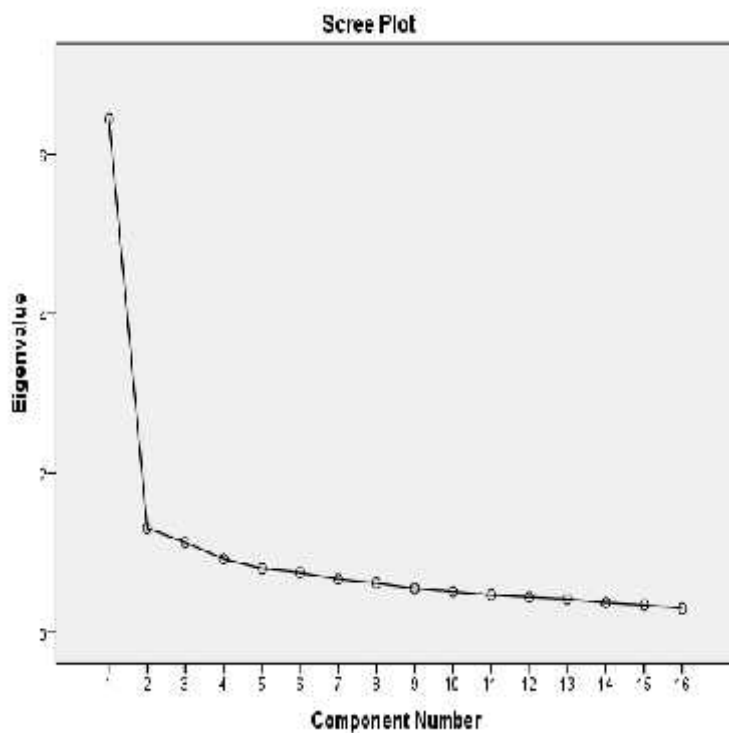
Item number	Factor loadings					
	F1: Commitment, Interest, & enthusiasm		F2: Affiliation with parents & peers		F3: Making excuse & blaming others	
	EFA	CFA	EFA	CFA	EFA	CFA
Item 05	.43	.45				
Item 17	.46	.48				
Item 25	.47	.57				
Item 26	.65	.61				
Item 27	.57	.69	(.47)			
Item 28	.57	.73	(.43)			
Item 29	.53	.60				
Item 31	.48	.55				
Item 34	.48	.50				
Item 36	.58	.57				
Item 44	.44	.57				
Item 48	.60	.65				
Item 49	.61	.49				
Item 52	.59	.58				
Item 53	.67	.52				
Item55	.48	.53				
Item 56	.74	.60				
Item 03			.48	.48		
Item 04			.45	.45		
Item 07			.59	.52		
Item 11			.74	.64		
Item 13			.56	.60		
Item 19			.59	.62		
Item 51			.56	.66		
Item 57			.52	.66		
Item 32					.71	.49
Item 35					.50	.44
Item 39					.61	.49
Item 41					.71	.53
Item 42					.75	.66
Eigenvalue	5.80		4.16		2.75	
Variance explained (%)	19.32		13.85		9.17	

**4.5 Factor structure of SES**

*Item analysis.* The item analysis was carried out for the 18 items of the SES (item no.19 was eliminated in the adjudication stage of translation).The correlation matrix (*R-*

matrix 9, data not shown) contained 6 negative values leading us to exclude item no. 02 and 05. Thus 16 items were retained for factor analysis. The inter-item correlations for these items are shown in Table 40 (*R*-matrix 10). The figures in this table indicate that out of 120 inter-item correlation coefficients 106 (88.33%) were significant, the average inter-item coefficients being .35. All the item-total correlations were significant and ranged from .32 to .73 with a mean of .63.

***Exploratory factor analysis.*** In order to examine whether data were suitable for factor analysis measures of sampling adequacy were carried out on the 16-item SES. Inspection of the *R*-matrix revealed a substantial number of coefficients .30 and above (66.67%). The determinant of the *R*-matrix was .002 ( $>.00001$ ; Field, 2005). This indicates that there is no multicollinearity (Very highly correlated variables) or singularity (Perfectly correlated variables) problem in the data. The KMO measure of sampling adequacy for these set of variables was .92 which falls in the range of being superb (.92  $>.90$ ; Kaiser, 1970). Bartlett's test of sphericity indicated a  $\chi^2$  value of 3100.77 ( $p < .001$ ). All this together supports the factorability of the *R*-matrix. Data for the 16-item SES were therefore subjected to EFA. Method of PC with varimax rotation was used. The initial analysis with Eigen value  $> 1.00$  (the Kaiser-Guttman criterion) extracted 3-factor solution, accounting for 55.48% of the total variance (Data not shown). However, an inspecting of the scree plot indicates a clear break after the 3<sup>rd</sup> component (Figure 15) leading us to retain 3 components.



*Figure 15.* The scree plots generated in EFA for 16 items.

Considering Cattle's view, data were subjected to another EFA limiting the number of factors to 3, with all factor loadings  $<.40$  suppressed. The three-factor which were rotated to position of maximum orthogonality in 6 iterations, accounted for 55.48% of the total variance (Table 41) which was deemed to be the most statistically and conceptually appropriate and more interpretable to the SES.

Table 41

*Rotated factor matrix for a reduced set of SES items (item 02 and item 05 discarded)*

Item numbers	Factor loading		
	F1	F2	F3
Item 01		.76	
Item 03		.75	
Item 04		.77	
Item 06			.69
Item 07			.64
Item 08			.59
Item 09			.67
Item 10	(.40)		.57
Item 11	(.45)		.48
Item 12	.54		
Item 13	.61		
Item 14	.71		
Item 15	.72		
Item 16	.72		
Item 17	.59		
Item 18	.65		
Eigenvalue	3.82	2.54	2.52
Variance explained	23.84	15.87	15.73
Cronbach's(standardized) $\alpha$	.86	.78	.78

*Note.*  $n = 500$

Factor loadings  $< .40$  were suppressed.

Items corresponding to the parenthesized loadings did not conceptually fit with the corresponding factors.

Extraction method: varimax with Kaiser normalization.

Rotation converged in 6 iterations.

Factor 1 accounts for 23.84% of the variance, Factor 2 accounts for 15.87% of the variance, and Factor 3 accounts for 15.73% of the variance. Before labelling the factors we identified two pairs of cross-loadings. Specifically, item 10 was cross-loaded on Factor 1 and Factor 3 with the loadings of .40 and .57 respectively; item 11 was cross-loaded on Factor 1 and Factor 3 with the loadings of .45 and .48 respectively. We grouped both the item 10 and item 11 under Factor 3, the factor of their larger loading and best conceptual fit. Thus, Factor 1 comprises item no. 12, 13, 14, 15, 16, 17, and 18 which we termed as 'Cognitive Engagement'; Factor 2 comprises item no. 1, 3, 4 which we termed as 'Behavioural Engagement'; and Factor 3 comprises item no. 6, 7, 8, 9, 10, and 11 which we termed as 'Emotional Engagement'.

**Confirmatory factor analysis.** The CFA in the present study revealed that the three-factor model identified for the SES in EFA is a good fit to the data. Analysis of data demonstrated that, the value of  $\chi^2$  was significant [ $\chi^2_{(101)} = 251.62, p < .05$ ]. The normalized  $\chi^2$  value is 2.5 ( $< 5$ ). The values of other fit indices fit well (RMSEA = .05, RMR = .06, CFI = .94, GFI = .94) the reference values (Table 27). The factor structure of the three-factor solution is given in Figure 16.

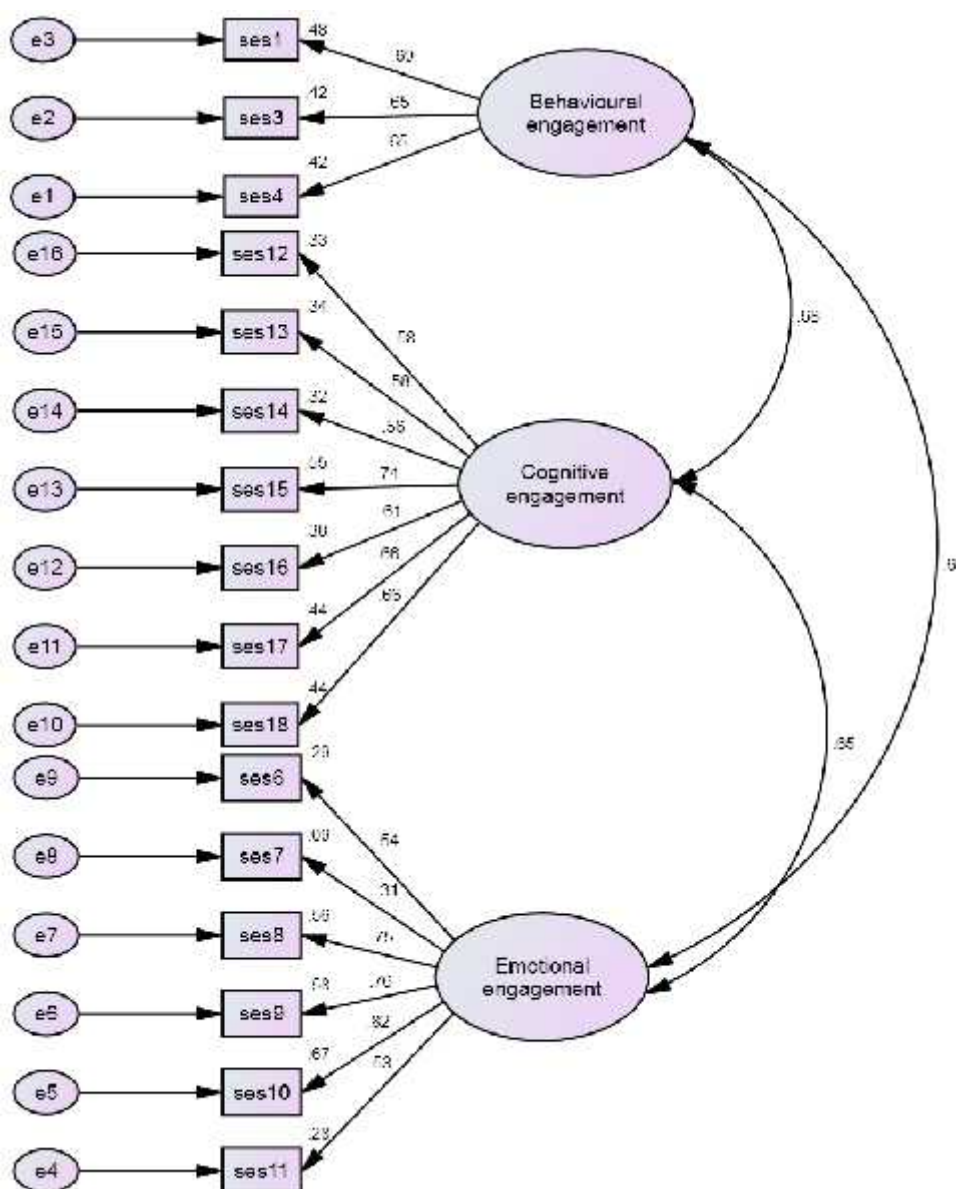


Figure 16. Factor structure of the three-factor solution for the SES (Standardized parameter).

The above figure displays standardized parameters. As we see, factor loadings of the three factors varied from .31 to .82. Particularly good at assessing their latent variables were items which have the largest factor loadings. These are ses10 (.82) for the latent variable 'Emotional Engagement', ses15 (.74) for 'Cognitive Engagement', and ses3 (.65) and ses4 (.65) for 'Emotional Engagement'. The lowest factor loading was for ses7 (.31) under the the latent variable 'Behavioural Engagement'. Correlations among the latent variables varied from .65 to .69. The lowest correlation ( $r = .65$ ) was found between 'Cognitive Engagement' and 'Emotional Engagement'. The highest correlation ( $r = .69$ ) was found between 'Emotional Engagement' and 'Behavioural Engagement' which reveals that in the three-factor model of SES, 'Behavior Engagement and Emotional Engagement' are inseparable.

The standardized factor coefficients obtained in CFA are presented in comparison with those found in EFA in Table 42. The figures in this table indicate that the coefficients obtained in CFA are fairly consistent with those obtained in EFA.

Table 42

*Factor loadings from exploratory and confirmatory factor analysis on SES (Three-factor model)*

Item numbers	Factor loadings					
	F1: Cognitive engagement		F2: Behavioural engagement		F3: Emotional engagement	
	EFA	CFA	EFA	CFA	EFA	CFA
Item 01			.76	.69		
Item 03			.75	.65		
Item 04			.77	.65		
Item 06					.69	.54
Item 07					.64	.31
Item 08					.59	.75
Item 09					.67	.76
Item 10	(.40)				.57	.82
Item 11	(.45)				.48	.53
Item 12	.54	.58				
Item 13	.61	.58				
Item 14	.71	.56				
Item 15	.72	.74				
Item 16	.72	.61				
Item 17	.59	.66				
Item 18	.65	.66				
Eigenvalue	3.82		2.54		2.52	
Variance explained (%)	23.84		15.87		15.73	

#### 4.6 Factor structure of CHS

In order to have a single hopelessness score for each participants, the items under the ‘Pessimistic’ dimension of the scale were scored in reversed order (Because this dimension measures the characteristics opposite to the characteristics measured by the ‘Optimistic’ dimension).

**Item analysis.** The item analysis was carried out for the 17 items of the CHS (No item was eliminated in the adjudication stage of translation). The correlation matrix (*R*-matrix 11, data not shown) contained 28 negative values leading us to exclude 8 items (Item no. 01, 04, 08, 10, 11, 12, 14, and 17). Thus 9 items were retained for factor analysis. The inter-item correlations for these items are shown in Table 43 (*R*-matrix 12). The figures in this table indicate that out of 36 inter-item correlations 22 (61.11%) were significant, the average inter-item coefficients being .17. All the item-total correlations were significant and ranged from .34 to .60 with a mean of .51.

Table 43

*Correlation matrix (R-matrix 12) for CHS*

Items	chs2	chs3	chs5	chs6	chs7	chs9	chs13	chs15	chs16	CHS
chs2	1									
chs3	.114*	1								
chs5	.138**	.005	1							
chs6	.110*	.072	.117**	1						
chs7	.205**	.115**	.121**	.325**	1					
chs9	.341**	.086	.036	.175**	.226**	1				
chs13	.296**	.030	.001	.179**	.173**	.324**	1			
chs15	.248**	.052	.052	.183**	.133**	.357**	.342**	1		
chs16	.164**	.076	.097*	.271**	.240**	.147**	.253**	.183**	1	
CHS	.595**	.335**	.348**	.462**	.491**	.603**	.603**	.597**	.519**	1

Note.  $n = 500$ ; average inter-item correlation = .17; average item-total correlation = .51.

\*\*  $p < .01$  (2-tailed). \*  $p < .05$  (2-tailed).

**Exploratory factor analysis.** In order to examine whether data were suitable for factor analysis measures of sampling adequacy were carried out on the 9-item CHS. Inspection of the *R*-matrix revealed a few number of coefficients .30 and above (5.56%). The determinant of the *R*-matrix was .40 ( $> .00001$ ; Field, 2005). This indicates that there is

no multicollinearity (Very highly correlated variables) or singularity (Perfectly correlated variables) problem in the data. The KMO measure of sampling adequacy for these set of variables was .76 which falls into the range of being suitable (.76 > .70; Kaiser, 1970). Bartlett's test of sphericity indicated a  $\chi^2$  value of 451.93 ( $p < .001$ ). All this together supports the factorability of the  $R$ -matrix. Data for the 9-item CHS were therefore subjected to EFA. Method of PC with varimax rotation was used. The initial analysis with Eigen value > 1.00 (the Kaiser-Guttman criterion) extracted 2-factor solution, accounting for 40.31% of the total variance (Data not shown). However, an inspection of the scree plot indicates a clear break after the 2<sup>nd</sup> component leading us to retain 2 components (Figure 17a).

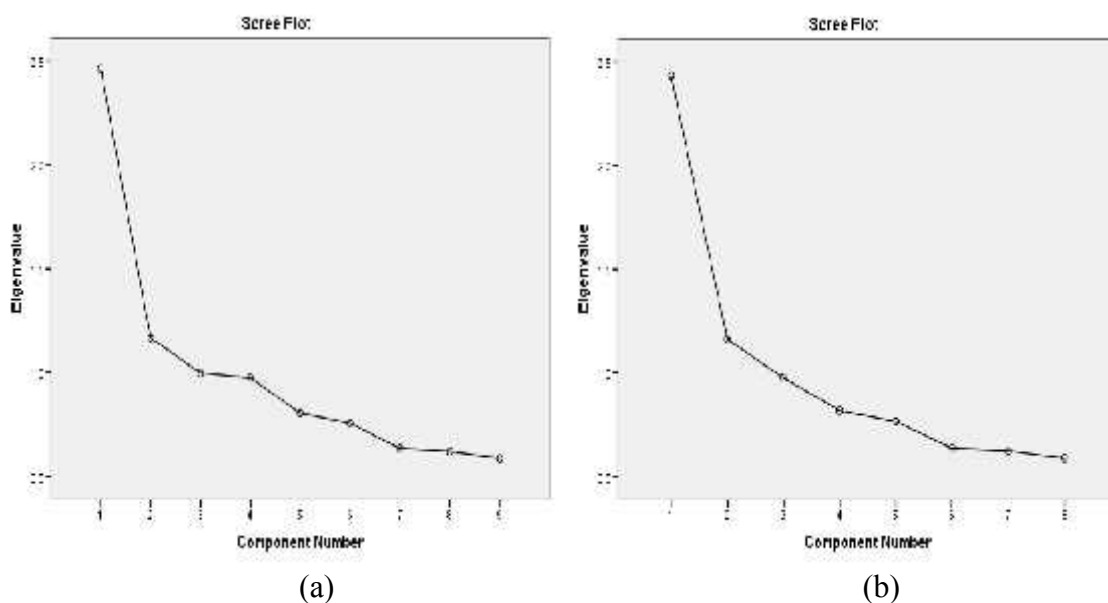


Figure 17. The scree plots generated in EFA: (a) for 9 items, and (b) for 8 items.

Considering Cattle's view data were subjected to another EFA, limiting the number of factors to 2 with all factor loadings < .40 suppressed. These two factors together accounted for 40.308 % of the total variance (data not shown). But item 03 loaded at < .40. This low factor loading indicated that perhaps item 03 can not measure children's hopelessness in Bangladeshi culture. After discarding this items data were further subjected to EFA limiting the number of factors to 2 with all factor loadings < .40



suppressed (Figure 17b). A two-factor solution of the CHS was identified. Now, the variance explained by the factors increased from 40.308% to 44.95% (4.65%) which was deemed to be the most statistically and conceptually appropriate and more interpretable to the CHS (Table 44).

Table 44

*Rotated factor matrix for a reduced set on CHS items (Item 03 discarded)*

Item numbers	Factor loadings	
	F1	F2
Item 02	.61	
Item 09	.73	
Item 13	.71	
Item 15	.70	
Item 05		.53
Item 06		.70
Item 07		.67
Item 16		.57
Eigenvalue	2.01	1.58
Variance explained	25.17	19.77
Cronbach's (standardized) $\alpha$	.65	.49

*Note.*  $n = 500$ .

Factor loadings  $< .40$  were suppressed.

Items corresponding to the parenthesized loadings did not conceptually fit with the corresponding factors.

Extraction method: varimax with Kaiser normalization.

Rotation converged in 3 iterations.

Factor 1 accounts for 25.17% of the variance, Factor 2 accounts for 19.77% of the variance. Thus, Factor 1 comprises item no. 2, 9, 13, and 15, which we termed as 'Pessimistic'; Factor 2 comprises item no. 5, 6, 7, and 16 which we termed as 'Optimistic'.

**Confirmatory factor analysis of CHS.** The CFA in the present study revealed that the two-factor model identified for the CHS in EFA is a good fit to the data. Analysis of data demonstrated that, the value of  $\chi^2$  was significant [ $\chi^2 (19) = 26.04, p < .05$ ]. The normalized  $\chi^2$  value is 1.5 ( $< 5$ ). The values of other fit indices (RMSEA = .03, RMR = .01, CFI = .98, GFI = .98) fit well the reference values (Table 27). The factor structure of the two-factor solution is given in Figure 18.

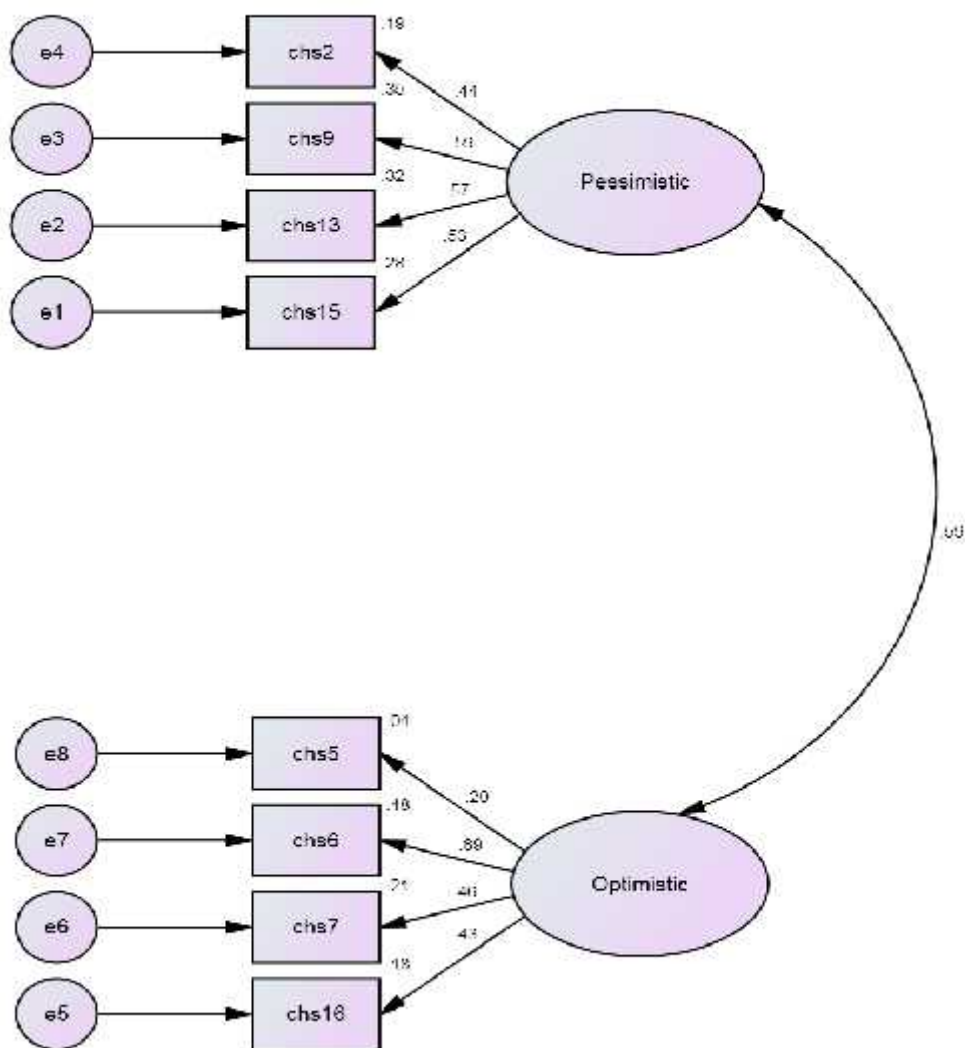


Figure 18. Factor structure of the two-factor solution for the CHS (Standardized parameter).

The above figure displays standardized parameters. As we see, factor loadings of the two factors varied from .20 to .69. Particularly good at assessing their latent variables were items which have the largest factor loadings. These are chs6 (.69) for the latent variable 'Optimistic' and chs9 (.59) for 'Pessimistic'. The lowest factor loading was for item chs5 (.20) under the latent variable 'Optimistic'. Correlation between the two latent variables is .59.

The standardized factor coefficients obtained in CFA are presented in comparison with those found in EFA in Table 45. The figures in this table indicate that the coefficients obtained in CFA are fairly consistent with those obtained in EFA.

Table 45

*Factor loadings from exploratory and confirmatory factor analysis on CHS (Two-factor model)*

Item numbers	Factor loadings			
	F1: Pessimistic		F2: Optimistic	
	EFA	CFA	EFA	CFA
Item 02	.61	.44		
Item 09	.73	.59		
Item 13	.71	.57		
Item 15	.70	.53		
Item 05			.53	.20
Item 06			.70	.69
Item 07			.67	.46
Item 16			.57	.43
Eigenvalue	2.01		1.58	
Variance explained (%)	25.17		19.77	

#### 4.7 Factor structure of HS

**Item analysis.** The item analysis was carried out for the 6 items of the HS (No item was eliminated in the adjudication stage of translation). The correlation matrix (*R*-matrix 13, Table 46) contained no negative values and all the 15 inter-item correlation coefficients were significant, the average inter-item coefficients being .24. All the item-total correlations were also significant and ranged from .50 to .67 with a mean of .61.

Table 46

*Correlation matrix (R-matrix 13) for HS*

Items	hs1	hs2	hs3	hs4	hs5	hs6	HS
hs1	1						
hs2	.385**	1					
hs3	.126**	.192**	1				
hs4	.253**	.264**	.250**	1			
hs5	.166**	.183**	.225**	.166**	1		
hs6	.229**	.288**	.218**	.453**	.241**	1	
HS	.598**	.660**	.504**	.643**	.565**	.666**	1

Note.  $n = 500$ ; average inter-item correlation = .24; average item-total correlation = .61.

\*\*  $P < .01$  (two-tailed).

**Exploratory factor analysis.** In order to examine whether data were suitable for factor analysis measures of sampling adequacy were carried out on the 6-item HS. Inspection of the *R*-matrix revealed a few number of coefficients .30 (13%) and above. The determinant of the *R*-matrix was .48 ( $> .00001$ ; Field, 2005). This indicates that there is no multicollinearity (Very highly correlated variables) or singularity (Perfectly correlated variables) problem in the data. The KMO measure of sampling adequacy for these set of variables was .73 which falls in the range of being suitable (.73 > .70; Kaiser, 1970). Bartlett's test of sphericity indicated a  $\chi^2$  value of 366368 ( $p < .001$ ). All this together supports the factorability of the *R*-matrix. Data for the full set of HS were therefore subjected to EFA. Method of PC with varimax rotation was used. The initial analysis with Eigen value > 1.00 (the Kaiser-Guttman criterion) extracted 1-factor solution consistently with the scree plot (Figure 19).

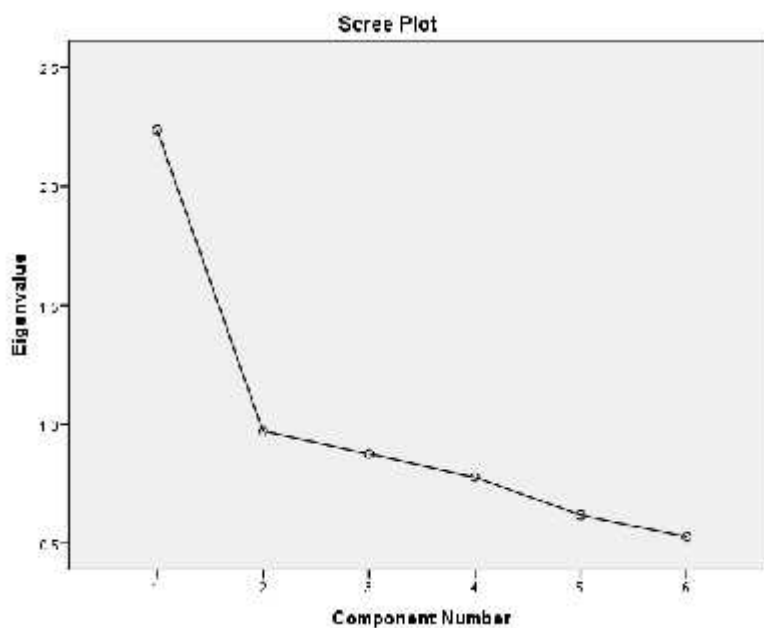


Figure 19. The scree plots generated in EFA for 6 items.

**Confirmatory factor analysis of HS.** The CFA in the present study revealed that the one-factor model identified for the HS in EFA is a good fit to the data. The fit statistics are depicted in Table 47.

Table 47  
*Model fit indices for 6-item HS obtained in CFA*

	$\chi^2$	df	$\chi^2/df$	RMSEA	RMR	CFI	GFI
Obtained fit indices	83.5*	9	9.27	.13	.06	.85	.95
Modification fit indices	17.377*	8	2.175	.05	.03	.98	.99

$n = 500$ . \* $p < .05$ .

The above table indicates that the value of  $\chi^2$  was significant ( $p < .05$ ). The normalized  $\chi^2$  value is 2.175 ( $< 5$ ). The values of RMR, CFI, and GFI also fit well the reference values (Table 27). However, the value of RMSEA (Unmodified) lies below the criterion value. So, MIs were examined which identified similar theoretical content between some of the items. Parameters with high MIs  $> 45$  have been noted as potential areas for structure misfit leading to poor fit the model. One modification index value greater than 45 was identified which indicated a correlated measurement error between item 1 and item 2. When CFA was run allowing these items covary the model was quite improved. The modified fit indices indicated a good model fit to the data [ $\chi^2(8) = 17.38$ , RMSEA = .05, RMR = .03, CFI = .98, GFI = .99]. The factor structure of the one-factor solution is given in Figure 20.

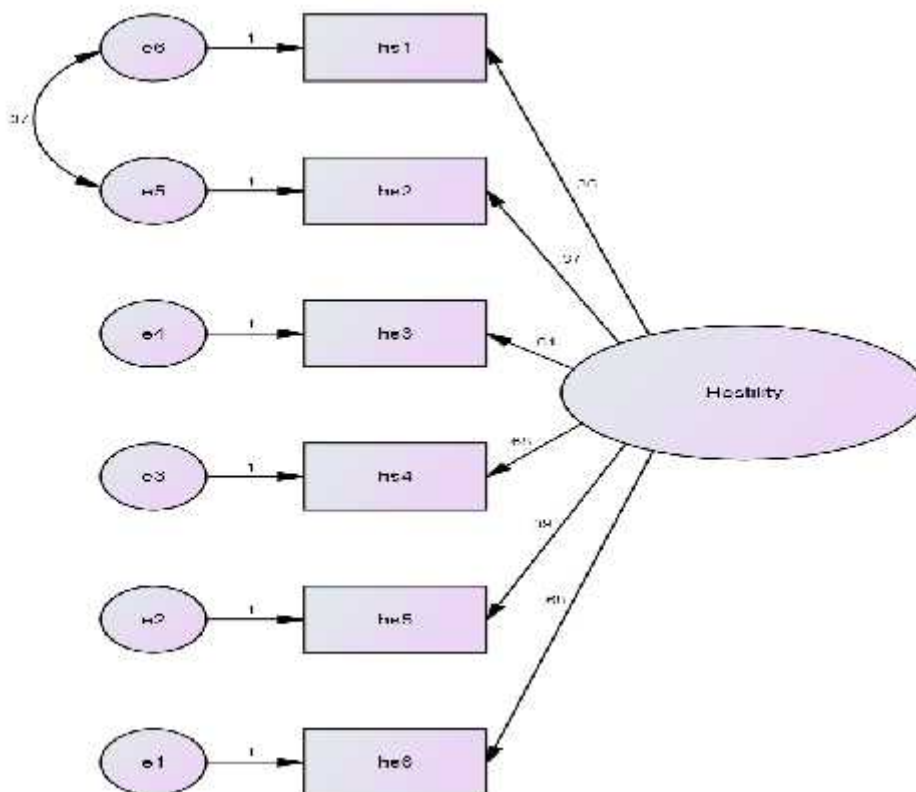


Figure 20. Factor structure of the one-factor solution for the hostility scale (Standardized parameter).

Note. Items 1 and 2 were allowed to covary due to their similar content (imitating) and high modification indices (Barke et al., 2012; Balkin et al., 2013; Lowe et al., 2011; Walker, 2010).

The above figure displays standardized parameters. As we see, factor loadings for different factors varied from .36 to .68. Particularly good at assessing its latent variable (Hostility) were items which have the largest factor loading. This was for hs4 (.68) under the latent variable 'Hostility'. The lowest factor loading was for hs1 (.36) under the latent variable 'Hostility'.

#### 4.8 Factor structure of FES

**Item analysis.** The item analysis was carried out for the 87 items of the FES (Three items were eliminated in the adjudication stage of translation). The correlation-matrix ( $R$ -matrix 14, data not shown) contained 733 negative values leading us to exclude 36 items (Item no. 01, 06, 07, 10, 16, 18, 20, 23, 24, 31, 32, 34, 37, 38, 42, 44, 46, 48, 49, 51, 55, 56, 61, 67, 69, 71, 72, 73, 75, 76, 80, 81, 82, 84, 85, and 87). Thus, 51 items were retained for factor analysis. The inter-item correlations for these items are shown in Table 48 ( $R$ -

matrix 15). The figures in this table indicate that out of 1275 inter-item correlation coefficients 1204 (94.43%) were significant, the average inter-item coefficients being .22. All the item-total correlations were significant and ranged from .28 to .67 with a mean of .48.

**Exploratory factor analysis.** In order to examine whether data were suitable for factor analysis measures of sampling adequacy were carried out on the 51-item FES. Inspection of the *R*-matrix revealed a good number of coefficients .30 and above (17.65%). The KMO measure of sampling adequacy for these set of variables was .94 which falls in the range of being superb (.94 > .90; Kaiser, 1970). Bartlett's test of sphericity indicated a  $\chi^2$  value of 6125.85 ( $p < .001$ ). All this together supports the factorability of the *R*-matrix. Data for the 51-item FES were therefore subjected to EFA. Method of PC with varimax rotation was used. The initial analysis with Eigen value > 1.00 (the Kaiser-Guttman criterion) extracted 13-factor solution, accounting for 54.3% of the total variance (Data not shown). An inspection of the scree plot indicates a clear break after the 2<sup>nd</sup> component (Figure 21a) leading us to retain 2 components.

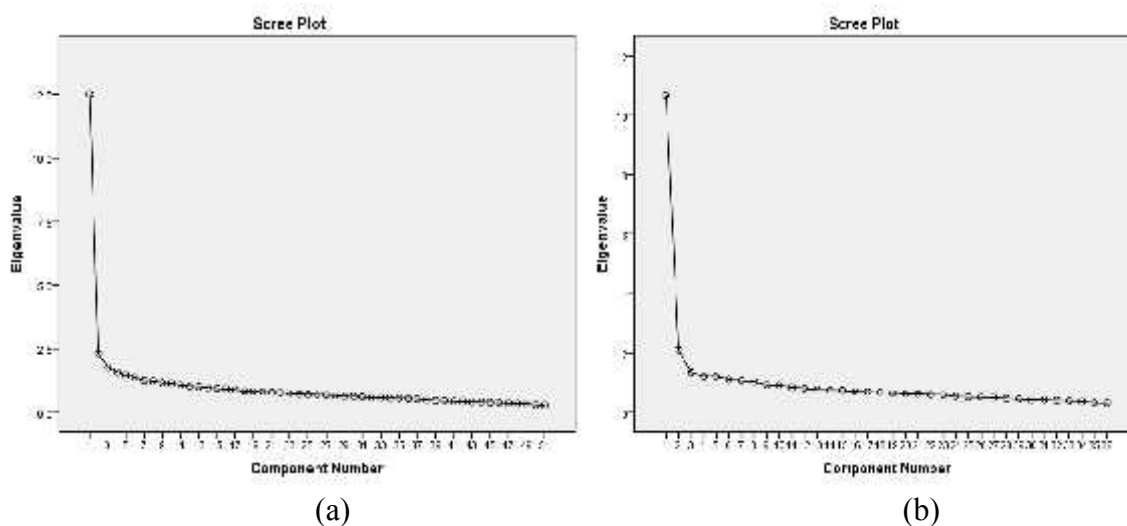


Figure 21. The scree plots generated in EFA: (a) for 51 items, and (b) for 36 items.

Considering Cattle's view, data were subjected to another EFA limiting the number of factors to 2 with all factor loadings  $< .40$  suppressed. The two factors together accounted for 29.059% of the total variance (data not shown), but item no. 02, 11, 12, 13, 17, 25, 27, 35, 36, 57, 60, 62, 64, 78, and 86 loaded at  $< .40$ . The low factor loadings indicate that perhaps these items can not measure family environment in Bangladeshi culture. After discarding these items data were further subjected to EFA limiting the number of factors to 2, with all factor loadings  $< .40$  suppressed (Figure 21b). Now, the variance explained by the factors increased from 29.06% to 35.41% (6.35%). This two-factor solution which was rotated to position of maximum orthogonality in 3 iterations explained together 35.41% of the total variance (Table 49) which was deemed to be the most statistically and conceptually appropriate and more interpretable to FES.



Table 49

*Rotated factor matrix for a reduced set of FES items (Items 02, 11, 12, 13, 17, 25, 27, 35, 36, 57, 60, 62, 64, 78, and 86 discarded)*

Item numbers	Factor loadings	
	F1	F2
Item 04	.41	
Item 05	.55	
Item 08	.45	
Item 09	.49	
Item 14	.54	
Item 15	.59	
Item 19	.60	
Item 21	.65	
Item 26	.61	
Item 28	.49	
Item 33	.46	
Item 39	.63	
Item 40	.65	
Item 45	.64	
Item 47	.44	
Item 50	.56	
Item 54	.45	
Item 58	.63	
Item 59	.59	
Item 63	.43	
Item 65	.50	
Item 66	.52	
Item 68	.50	
Item 74	.52	
Item 77	.50	
Item 79	.49	
Item 83	.59	
Item 03		.65
Item 22		.54
Item 29		.50
Item 30	(.49)	.45
Item 41		.51
Item 43		.53
Item 52		.76
Item 53		.73
Item 70	(.48)	.44
Eigenvalue	8.54	4.23
Variance explained	23.72	11.83
Cronbach's (standardized) $\alpha$	.92	.80

*Note.*  $n = 500$ .

Factor loadings < .40 were suppressed.

Items corresponding to the parenthesized loadings did not conceptually fit with the corresponding factors.

Extraction method: varimax with Kaiser normalization.

Rotation converged in 3 iterations.

Factor 1 accounts for 23.7% of the variance and Factor 2 accounts for 11.83% of the variance. Before labeling the factors we identified two pairs of cross-loadings between the factors. Specifically, item 30 was cross loaded on Factor 1 and Factor 2 with the loadings of .49 and .45 respectively; item 70 was cross loaded on Factor 1 and Factor 2 with the loadings of .48 and .44 respectively. We grouped both the item 30 and item 70 under Factor 2, the factor of their smaller loadings but best conceptual fit. Thus, Factor 1 comprises item no. 4, 5, 8, 9, 14, 15, 19, 21, 26, 28, 33, 39, 40,45, 47, 50, 54, 58, 59, 63, 65, 66, 68, 74, 77, 79, and 83 which we termed as ‘Achievement-, Order-, and Culture Orientation’; Factor 2 comprises item no. 3, 22, 29, 30, 41, 43, 52, 53, and 70 which we termed as ‘Emotional Atmosphere’.

**Confirmatory factor analysis of FES.** The CFA in the present study revealed that the two-factor model identified for the FES in EFA is a good fit to the data. The obtained fit statistics are depicted in Table 50.

Table 50  
*Model fit indices for 36-item FES obtained in CFA*

	$\chi^2$	df	$\chi^2/df$	RMSEA	RMR	CFI	GFI
Unmodified fit indices	1525.5*	593	2.57	.06	.03	.83	.85
Modified fit indices	1326.3*	589	2.25	.05	.03	.86	.87

*n* = 500. \* *p* < .05.

The above table indicates that the value of  $\chi^2$  was significant (*p* < .05). The normalized  $\chi^2$  value is 2.25 (< 5). The values of RMSEA, RMR, and CFI fit well the reference values (Table 27). However, the values of RMSEA and GFI (Unmodified) lie below the criterion values. So, MIs were examined which identified similar theoretical content between some of the items. Parameters with high MIs > 24 have been noted as potential areas for structure misfit leading to poor fit the model. Four modification index values greater than 24 were identified which indicated four correlated measurement errors, one between items 52 and 53, one between items

43 and 52, one between items 14 and 15 and a fourth one between items 65 and 66. So, when the CFA was run allowing the items in each pair to covary the model was quite improved. The modified fit indices indicated an acceptable model fit to the data [ $\chi^2(589) = 1326.3$ , RMSEA = .05, RMR = .03, CFI = .86, GFI = .87]. The factor structure of the four-factor solution is given in Figure 22.

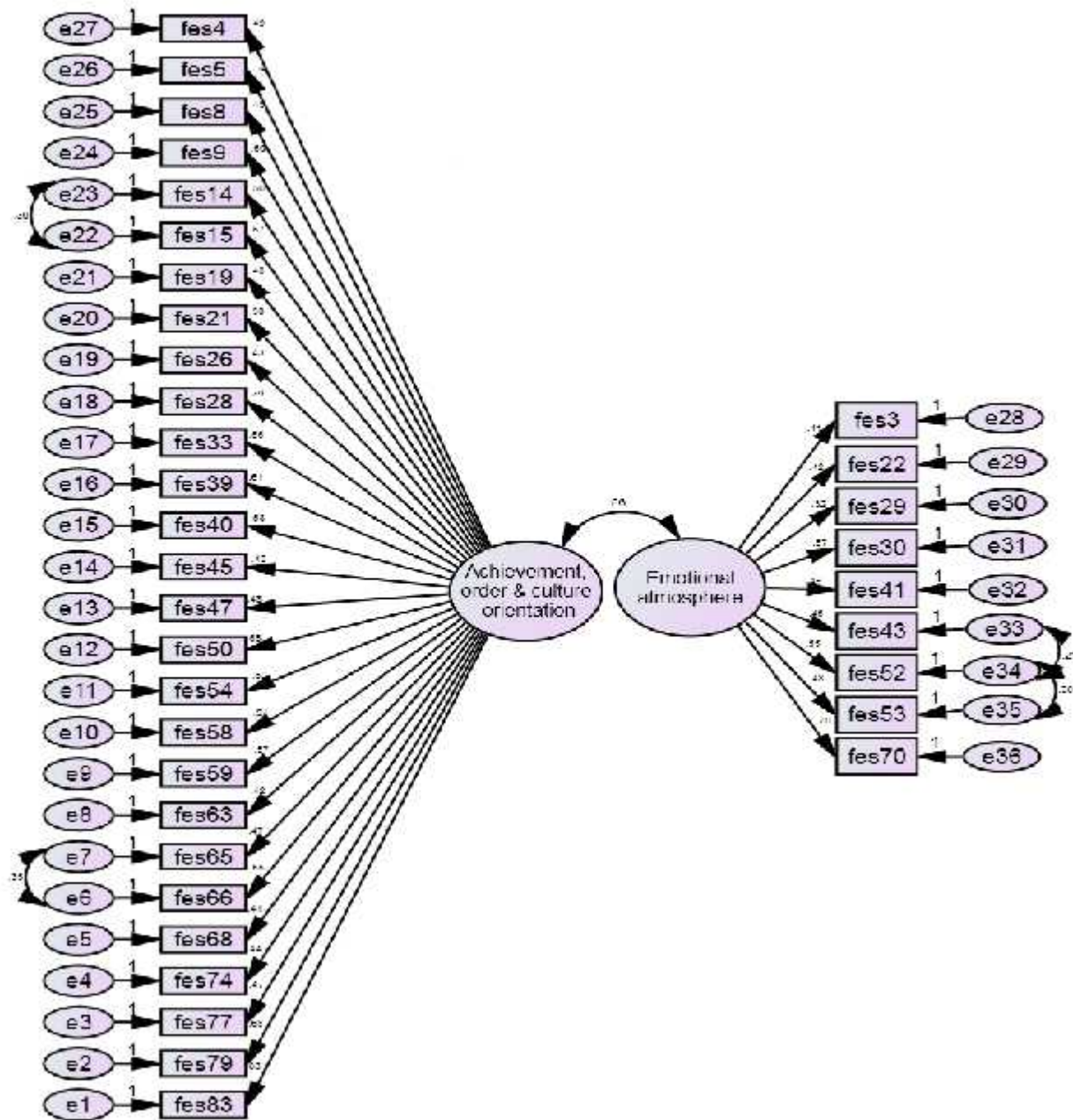


Figure 22. Factor structure of the two-factor solution for the family environment scale (Standardized parameter).

Note. Items 52 and 53 were allowed to covary due to their similar content (quarreling) and high modification indices. This was also done for items 43 and 52 (criticism), items 14 and 15 (development), and items 65 and 66 (study) (Barke, Nyenhuis., & Kroner-Herwig, 2012; Balkin, Harris, Freeman., & Huntington, 2013; Lowe, Ang., & Loke, 2011; Walker, 2010).

The above figure displays standardized parameters. As we see, factor loadings of the four factors varied from .32 to .70. Particularly good at assessing their latent variables were items which have the largest factor loadings. These are fes70 (.70) for the latent variable 'Emotional Atmosphere' and fes45 (.68) for 'Achievement-, Order- and Culture Orientation'. The lowest factor loading was for fes29 (.32) under the latent variable 'Emotional Atmosphere'. The correlation between two latent variables ('Achievement-, Order- and Culture Orientation' and 'Emotional Atmosphere') is .86.

The standardized factor coefficients obtained in CFA are presented in comparison with those found in EFA in Table 51. The figures in this table indicate that the coefficients obtained in CFA are fairly consistent with those obtained in EFA.

Table 51

*Factor loadings from exploratory and confirmatory factor analysis of FES (Two-factor model)*

Item numbers	Factor loadings			
	F1: Achievement, - order-, & culture orientation		F2: Emotional atmosphere	
	EFA	CFA	EFA	CFA
Item 04	.41	.49		
Item 05	.55	.54		
Item 08	.45	.45		
Item 09	.49	.50		
Item 14	.54	.56		
Item 15	.59	.57		
Item 19	.60	.48		
Item 21	.65	.58		
Item 26	.61	.43		
Item 28	.49	.39		
Item 33	.46	.55		
Item 39	.63	.61		
Item 40	.65	.66		
Item 45	.64	.68		
Item 47	.44	.48		
Item 50	.56	.66		
Item 54	.45	.59		
Item 58	.63	.54		
Item 59	.59	.57		
Item 63	.43	.42		
Item 65	.50	.47		
Item 66	.52	.55		
Item 68	.50	.41		
Item 74	.52	.44		
Item 77	.50	.47		
Item 79	.49	.68		
Item 83	.59	.60		
Item 03			.65	.41
Item 22			.54	.42
Item 29			.50	.32
Item 30	(.49)		.45	.67
Item 41			.51	.49
Item 43			.53	.46
Item 52			.76	.55
Item 53			.73	.48
Item 70	(.48)		.44	.70
Eigenvalue	8.54		4.23	
Variance explained	23.72		11.83	

**3.9 Factor structure of CES**

**Item analysis.** The item analysis was carried out for the 83 items of the FES (Three items were eliminated in the adjudication stage of translation).The correlation matrix (*R*-matrix 16, data not shown) contained 813 negative values leading us to exclude 21 items (Item no. 17, 20,

25, 27, 28, 38, 47, 51, 53, 54, 55, 56, 57, 61, 63, 72, 77, 78, 79, 80, and 81). Thus 62 items were retained for factor analysis. The inter-item correlations for these items are shown in Table 52 (*R*-matrix 17). The figures in this table indicate that out of 1891 inter-item correlation coefficients 1777 (93.97%) were significant, the average inter-item coefficients being .25. All the item-total correlations were significant and ranged from .28 to .69 with a mean of .51.

**Exploratory factor analysis.** In order to examine whether data were suitable for factor analysis measures of sampling adequacy were carried out on the 62-item CES. Inspection of the *R*-matrix revealed a good number of coefficients .30 and above (31.72%). The KMO measure of sampling adequacy for these set of variables was .95 which falls in the range of being superb (.95 > .90; Kaiser, 1970). Bartlett's test of sphericity indicated a  $\chi^2$  value of 11552.314 ( $p < .001$ ). All this together supports the factorability of the *R*-matrix. Data for the 62-item CES were therefore subjected to EFA. Method of PC with varimax rotation was used. The initial analysis with Eigen value > 1.00 (the Kaiser-Guttman criterion) extracted 11- factor solution, accounting for 54.3% of the total variance (data not shown). However, an inspection of the scree plot indicates a clear break after the 4<sup>th</sup> component (Figure 23a) leading us to retain 4 components.

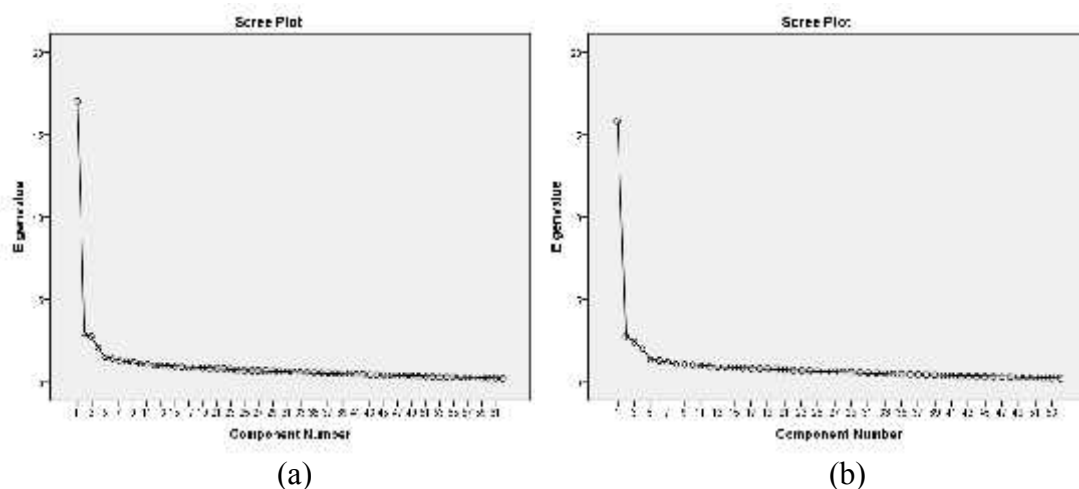


Figure 23. The scree plots generated in EFA: (a) for 62 items, and (b) for 54 items.

Considering Cattle's view, data were subjected to another EFA limiting the number of factors to 4 with all factor loadings  $< .40$  suppressed. The four factors together accounted for 40.09% of the total variance (Data not shown), but item no. 03, 11, 12, 41, 49, 52, 67, and 83 loaded at  $< .40$ . The low factor loadings indicate that perhaps these items can not measure classroom environment in Bangladeshi culture. After discarding these items data were further subjected to EFA limiting the number of factors to 4, with all factor loadings  $< .40$  suppressed (Figure 23b). Now, the variance explained by the factors increased from 40.09 % to 42.58 % (2.49%) which was deemed to be the most statistically and conceptually appropriate and more interpretable to the CES. The four factors which were rotated to position of maximum orthogonality in 7 iterations explained together 42.58% of the total variance (Table 53).



Table 53

*Rotated factor matrix for a reduced set of CES items (Items 02, 11, 12, 13, 17, 25, 27, 35, 36, 57, 60, 62, 64, 78, and 86 are discarded)*

Item numbers	Factor loadings			
	F1	F2	F3	F4
Item 30	.54			
Item 36	.58			
Item 42	.59			
Item 43	.58			
Item 44	.64			
Item 45	.46			
Item 48	.42			
Item 59	.63			
Item 60	.60			
Item 62	.61			
Item 64	.43			
Item 65	.41			
Item 71	.66			
Item 73	.62			
Item 75	.60			
Item 76	.65			
Item 01		.60		
Item 02		.63		
Item 04		.67		
Item 05		.42		
Item 06		.57		
Item 13		.58		
Item 15		.62		
Item 16		.57		
Item 29	(.44)	.46		
Item 31		.55		
Item 37		.47		
Item 39	(.43)	.44		
Item 40		.54		
Item 46	(.42)	.40		
Item 58		.56		
Item 66		.61		
Item 74	(.52)	.44		
Item 82		.44		
Item 24			.54	
Item 32			.62	
Item 33			.70	
Item 34			.56	
Item 35			.72	
Item 50			.41	
Item 68			.42	
Item 69			.41	
Item 70	(.56)		.48	
Item 07				.54
Item 08				.58
Item 09				.47
Item 10				.47
Item 14				.45
Item 18				.63
Item 19				.59
Item 21				.44
Item 22				.46
Item 23				.50
Item 26				.50
Eigenvalue	7.66	7.15	4.19	4.00
Variance explained	14.19	13.24	7.75	7.40
Cronbach's (standardized) $\alpha$	.91	.91	.83	.79

Note.  $n = 500$ .

Factor loadings  $< .40$  were suppressed.

Items corresponding to the parenthesized loadings did not conceptually fit with the corresponding factors.

Extraction method: varimax with Kaiser normalization.

Rotation converged in 7 iterations.

Factor 1 accounts for 14.19% of the variance, Factor 2 accounts for 13.24% of the variance, Factor 3 account for 7.75% of the variance, and Factor 4 accounts for 7.40% of the variance. Before labeling the factors we identified five pairs of cross-loadings. Specifically, item 29 was cross loaded on Factor 1 and Factor 2 with the loadings of .44 and .46 respectively; item 39 was cross loaded on Factor 1 and Factor 2 with the loadings of .43 and .44 respectively; item 46 was cross loaded on Factor 1 and Factor 2 with the loadings of .42 and .40 respectively; item 70 was cross loaded on Factor 1 and Factor 2 with the loadings of .52 and .44 respectively. We grouped both the item 29 and 39 under Factor 2, the factor of their larger loadings and best conceptual fit; item 46 and 74 under Factor 2, the factor of their smaller loadings but best conceptual fit; and item 70 under Factor 3, the factor of its smaller loading but best conceptual fit. Factor 1 comprises item no. 30, 36, 42, 43, 44, 45, 48, 59, 60, 62, 64, 65, 71, 73, 75, and 76 which we termed as ‘Pupil-centered’; Factor 2 comprises item no. 1, 2, 4, 5, 6, 13, 15, 16, 29, 31, 37, 39, 40, 46, 58, 66, 74, and 82 which we termed as ‘Enthusiasm, Innovation, and Competition’; Factor 3 comprises item no. 24, 32, 33, 34, 35, 50, 68, 69, and 70 which we termed as ‘Order and Organization’; Factor 4 comprises item no. 7, 8, 9, 10,14, 18, 19, 21, 22, 23, and 26 which we termed as ‘Authoritativeness and Indulgence’.

**Confirmatory factor analysis.** The CFA in the present study revealed that the four-factor model identified for the CES in EFA is a good fit to the data. The obtained fit statistics are depicted in Table 54.

Table 54  
*Model fit indices obtained in CFA for 54-item CES*

	$\chi^2$	df	$\chi^2/df$	RMSEA	RMR	CFI	GFI
Modified fit indices	3637.9*	1371	2.65	.06	.05	.77	.78
Unmodified fit indices	3365.9*	1363	2.46	.05	.04	.80	.79

*n* = 500. \**p* < .05.

The above table indicates that the value of  $\chi^2$  was significant. The normalized  $\chi^2$  value is 2.46 (< 5). The values of RMSEA and RMR fit well the reference values (Table

27). However, the values of CFI and GFI (Unmodified) lie below the criterion values. So, MIs were examined which identified similar theoretical content between some of the items. Parameters with high MIs  $> 18$  have been noted as potential areas for structure misfit leading to poor fit the model. Eight modification index values greater than 18 were identified which indicated eight correlated measurement errors, one between items 44 and 62, one between items 42 and 36, one between items 36 and 30, one between items 75 and 76, one between items 1 and 2, one between items 33 and 35, one between items 33 and 70, and a eighth one between items 7 and 8. So, when CFA was run allowing the items in each pair to covary the model was quiet improved. The modified fit indices indicated an acceptable model fit to the data [ $\chi^2 (1363) = 3365.9$ , RMSEA = .05, RMR = .04, CFI = .80, GFI = .79]. The factor structure of the four-factor solution is given in figure 24.

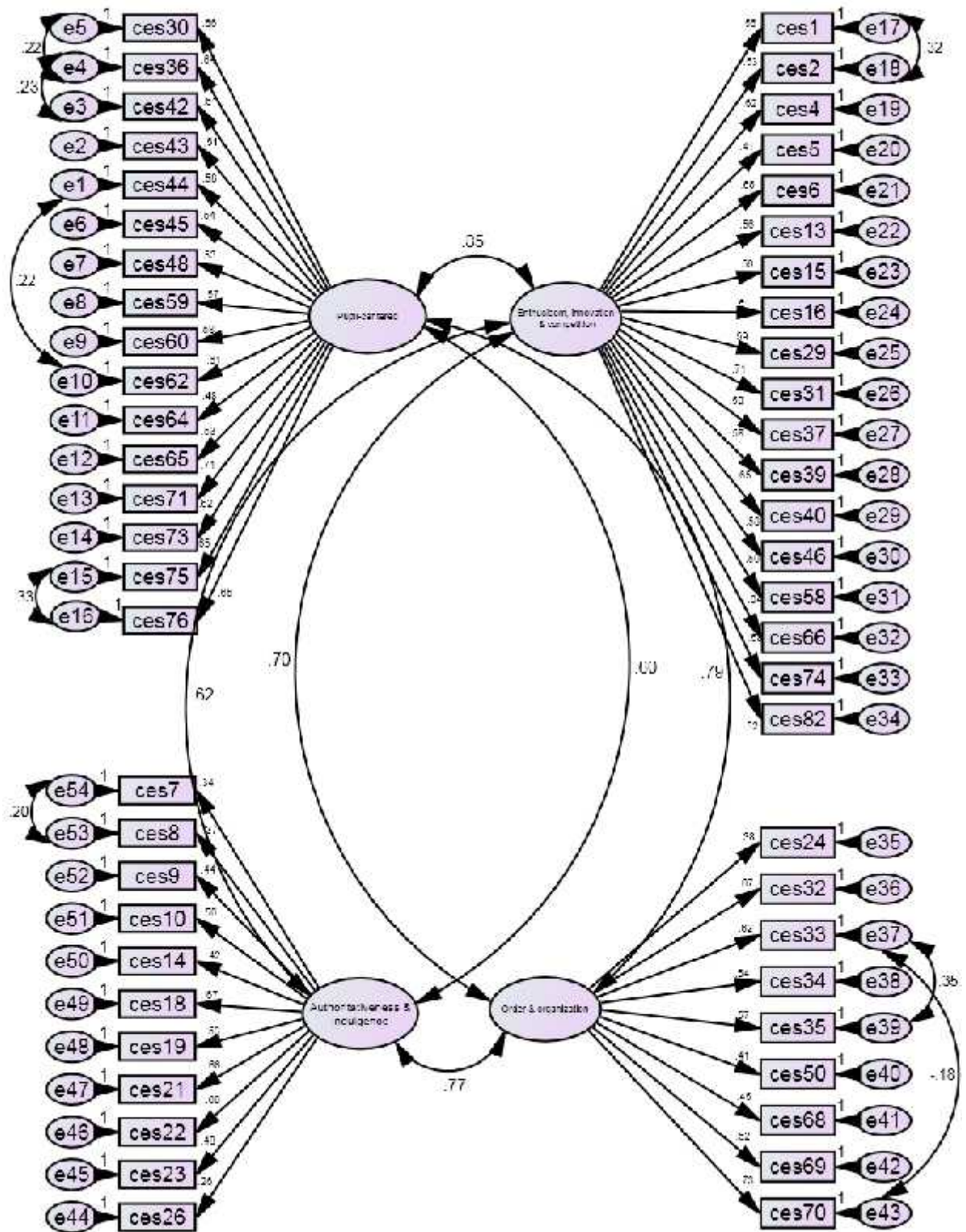


Figure 24. Factor structure of the four-factor solution for the CERQ (Standardized parameter).

Note. Items 44 and 62 were allowed to covary due to their similar content (good relation) and high modification indices. This was also done for items 42 and 36 (cordiality to student), item 36 and 30 (utmost trying), item 75 and 76 (planning), item 1 and 2 (encouragement), item 33 and 35 (rules), item 33 and 70 (class environment), and item 7 and 8 (teachers' behavior) (Barke et al., 2012; Balkin et al., 2013; Lowe et al., 2011; Walker, 2010).

The above figure displays standardized parameters. As we see, factor loadings of the four factors varied from .41 to .73. Particularly good at assessing their latent variables were items which have the largest factor loadings. These are ces71 (.71) for latent variable 'Pupil-centered, ces18 (.67) for 'Authoritativeness and Indulgence', ces70 (.73) for 'Order and Organization', and ces31 (.71) for 'Enthusiasm, Innovation, and Competition'. The lowest factor loading was for item 50 (.41) under the latent variable 'Order and Organization'. Correlation between the latent variables varied from .60 to .85. The lowest correlation ( $r = .60$ ) was between 'Pupil-centered' and 'Authoritativeness and Indulgence' and the highest correlation ( $r = .85$ ) was between 'Pupil-centered' and 'Enthusiasm, Innovation, and Competition'. This correlation indicates that these two latent variables are inseparable among the four-factor model of CES.

The standardized factor coefficients obtained in CFA are presented in comparison with those found in EFA in Table 55. The figures in this table indicate that the coefficients obtained in CFA are fairly consistent with those obtained in EFA.

Table 55

*Factor loadings from exploratory and confirmatory factor analysis on CES (Four-factor model)*

Item numbers	Factor loadings							
	F1: Pupil – centered		F2: Enthusiasm, Innovation, & competition		F3: Order & organization		F4: Authoritativeness & indulgence	
	EFA	CFA	EFA	CFA	EFA	CFA	EFA	CFA
Item 30	.54	.66						
Item 36	.58	.64						
Item 42	.59	.61						
Item 43	.58	.51						
Item 44	.64	.58						
Item 45	.46	.54						
Item 48	.42	.53						
Item 59	.63	.57						
Item 60	.60	.58						
Item 62	.61	.61						
Item 64	.43	.48						
Item 65	.41	.53						
Item 71	.66	.71						
Item 73	.62	.62						
Item 75	.60	.65						
Item 76	.65	.65						
Item 01			.60	.56				
Item 02			.63	.53				
Item 04			.67	.62				
Item 05			.42	.41				
Item 06			.57	.55				
Item 13			.58	.56				
Item 15			.62	.56				
Item 16			.57	.51				
Item 29	(.44)		.46	.59				
Item 31			.55	.71				
Item 37			.47	.50				
Item 39	(.43)		.44	.58				
Item 40			.54	.65				
Item 46	(.42)		.40	.58				
Item 58			.56	.59				
Item 66			.61	.64				
Item 74	(.52)		.44	.58				
Item 82			.44	.52				
Item 24					.54	.38		
Item 32					.62	.67		
Item 33					.70	.62		
Item34					.56	.64		
Item 35					.72	.57		
Item50					.41	.41		
Item 68					.42	.45		
Item 69					.41	.52		
Item 70	(.56)				.48	.73		
Item 07							.54	.34
Item 08							.58	.37
Item 09							.47	.44
Item10							.47	.50
Item 14							.45	.42
Item 18							.63	.67
Item 19							.59	.53
Item 21							.44	.66
Item 22							.46	.60
Item 23							.50	.48
Item 26							.50	.26
Eigenvalue	7.66		7.15		4.19		4.00	
Variance explained (%)	14.19		13.24		7.75		7.40	

#### **4.10 Validity**

##### **4.10.1 Translation validity**

**Content validity.** As reported by the judges the Bangla version CERQ, EIS, FAS, SMI, SES, CHS, HS, FES, and CES have content validity (See the method section for details).

**Face validity.** The face validity of the Bangla version CERQ, EIS, FAS, SMI, SES, CHS, HS, FES, and CES were examined by getting comments about the readability, logicity, clarity, comprehensiveness, easily answerable and 'style and formatting' of the scale items. The percentages of participants who commented on these aspects of face validity of the measures are shown in Table 20 which indicates that the percentages of participants responded 'Yes' on the readability, logicity, clarity, comprehensiveness, easily answerable, and 'style and formatting' aspects of the face validity ranged from 88 % to 98% for CERQ, 82 % to 97% for EIS, 86 % to 95% for FAS, 84 % to 98% for SMI, 86 % to 98% for SES, 87 % to 96% for CHS, 88 % to 97% for HS, 87 % to 97% for FES, and 86 % to 98% for CES. Thus, all the measures have good face validity.

##### **4.10.2 Construct validity**

In order to determine the empirical validity of each scale data for the 1000 participants were analyzed. The convergent validity and discriminant validity of the CERQ, EIS, FAS, SMI, SES, CHS, HS, FES, and CES were examined by investigating the inter-factor and factor-total correlations of each scale and their correlations with each other.

**4.10.2.1 Convergent validity.** To examine convergent validity of the Bangla version CERQ (ACERQ and LACERQ), it was hypothesized that all the factors under the major ACERQ dimension would be positively correlated with each other and with the ACERQ total. Similarly, all the factors under the major LACERQ dimension would be positively

correlated with each other and with the LACERQ total. The inter-ACERQ factor correlation (Pearson's *r*) was significant, the coefficient between 'Refocus on Positive Thoughts and Planning' and 'Positive Reappraisal and Putting into Perspective' being .55. The factors under the ACERQ were also significantly correlated with the ACERQ-total, with the coefficients ranging from .83 to .92 (Table 56). Similarly, the inter-LACERQ factor correlation (Pearson's *r*) was also significant, the correlation coefficient being .41. The factors under the LACERQ were also significantly correlated with the LACERQ-total, with the coefficients ranging from .76 to .90 (Table 57).

Table 56  
*Correlation matrix for CERQ factors (ACERQ part)*

CERQ factors/CERQ	F1: RPTP	F2: PRPP	Adaptive CERQ
F1: Refocus on Positive Thoughts and Planning (RPTP)	1		
F2: Positive Reappraisal and Putting into Perspective (PRPP)	.55**	1	
Adaptive CERQ	.83**	.92**	1

Note. *N* = 1000. \*\* *p* < .01.

Table 57  
*Correlation matrix for CERQ factors (LACERQ part)*

CERQ factors/CERQ	F3: RC	F4: SB	Less Adaptive CERQ
F3: Rumination and Catastrophizing (RC)	1		
F4: Self-blame (SB)	.41**	1	
Less Adaptive CERQ	.90**	.76**	1

Note. *N* = 1000. \*\* *p* < .01.

The convergent validity of the Bangla version EIS was examined by estimating inter-factor correlations and the factor-total correlations. The inter-factor correlations (Pearson's *r*) were all positively significant, with the coefficient ranging from .39 to .66 (Table 58). The seven factors also significantly correlated with the full EIS, with the coefficient of .70 to .79.



Table 58  
*Correlation matrix for EIS and its factors*

EIS factors/EIS	F1: SCA	F2: SAD	F3: EM	F4: ES	F5: EF	F6: IC	F7: SU	EIS
F1: Self-confidence and Analytic (SCA)	1							
F2: Self-awareness and Development (SAD)	.52**	1						
F3: Empathy (E)	.52**	.39**	1					
F4: Emotional Stability (ES)	.50**	.49**	.48**	1				
F5: Enthusiasm and Firmness (EF)	.66**	.46**	.46**	.43**	1			
F6: Integrity and Commitment (IC)	.53**	.51**	.49**	.45**	.51**	1		
F7: Survival (S)	.50**	.51**	.47**	.55**	.44**	.52**	1	
EIS	.79**	.76**	.70**	.75**	.76**	.77**	.73**	1

Note. N = 1000. \*\*  $p < .01$ .

The Bangla version SMI comprised of two positive dimensions ('Commitment, Interest, and Enthusiasm'; 'Affiliation with Parents and Peers') and one negative dimension (Making Excuse and Blaming Others). As the items of the negative dimension were reversely scored, it was hypothesized that there would be positive correlations between the factors, and between the factors with the SMI-total (Table 59). As hypothesized, there were positive correlation between 'Commitment, Interest, and Enthusiasm' and 'Affiliation with Parents and Peers' ( $r = .69, p < .01$ ); between 'Commitment, Interest, and Enthusiasm' and 'Making Excuse and Blaming Others' ( $r = .30, p < .01$ ); between 'Affiliation with Parents and Peers' and 'Making Excuse and Blaming Others' ( $r = .27, p < .01$ ). The factors also correlated significantly with the full SMI, with the coefficient of .30 to .64. The SMI had strongest correlation ( $r = .64$ ) with F1 (Commitment, Interest, and Enthusiasm) and the weakest ( $r = .30$ ) with F3 (Making Excuse and Blaming Others).

Table 59  
*Correlation matrix for SMI and its factors*

SMI factors/SMI	F1: CIE	F2: APP	F3: MEBO	SMI total
F1: Commitment, Interest, and Enthusiasm (CIE)	1			
F2: Affiliation with Parents and Peers (APP)	.69**	1		
F3: Making Excuse and Blaming Others (MEBO)	.30**	.27**	1	
SMI total	.64**	.42**	.30**	1

Note. N = 1000. \*\*  $p < .01$ .

The convergent validity of the Bangla version SES was examined by estimating inter-factor correlations and the factor-total correlations. The inter-factor correlations (Pearson's *r*) were all positively significant with the coefficient of .53 to .57. The three factors also significantly correlated with the full SES, the coefficient ranging from .74 to .89 (Table 60).

Table 60  
*Correlation matrix for SES and its factors*

SES factors/SES	F1: CogEn	F2: BE	F3: EE	SES
F1: Cognitive Engagement (CogEn)	1			
F2: Behavioural Eengagement (BE)	.56**	1		
F3: Emotional Engagement (EE)	.57**	.53**	1	
SES	.89**	.74**	.85**	1

Note. *N* = 1000. \*\* *p* < .01.

As mentioned earlier the Bangla version CHS comprised of one positive factor (Optimistic) and one negative factor (Pessimistic). However, as the items of the positive dimension were reversed scored, it was hypothesized that there would be significantly positive correlation between these factors. As hypothesized the correlation between these factors were significantly positive (*r* = .32). The two factors also significantly correlated with the CHS-total, with the coefficient of .73 to .88 (Table 61). Thus, the CHS has good convergent validity.

Table 61  
*Correlation matrix for CHS and its factors*

CHS factors/CHS	F1: PE	F2: OP	CHS
F1: Pessimistic (P)	1		
F2: Optimistic (O)	.32**	1	
CHS	.88**	.73**	1

Note. *N* = 1000. \*\* *p* < .01.

To examine the convergent validity of the Bangla version FES, it was hypothesized that there would be positive correlations between the FES factors, and between the FES factors and the FES total (Table 62). As hypothesized inter-factor correlation (Pearson's *r*) was positively significant (*r* = .62). The two factors also significantly correlated with

the full FES, with the coefficient of .80 to .97. The FES had strongest correlation ( $r = .97$ ) with F1 (Achievement-, Order- and Culture Orientation) and the weakest ( $r = .80$ ) with F2 (Emotional Atmosphere).

Table 62

*Correlation matrix for FES and its factors*

FES factors/FES	F1: AOCR	F2: EA	FES
F1: Achievement-, Order- and Culture Orientation (AOCR)	1		
F2: Emotional Atmosphere (EA)	.62**	1	
FES	.97**	.80**	1

Note.  $N = 1000$ . \*\*  $p < .01$ .

Finally, the convergent validity of the Bangla version CES was examined by estimating inter-factor correlations and the factor-CES total correlations. The inter-factor correlations (Pearson's  $r$ ) were all positively significant, with the coefficient of .49 to .75 (Table 63). The four factors also significantly correlated with the full CES, the coefficient ranging from .72 to .90.

Table 63

*Correlation matrix for CES and its factors*

CES factors/CES	F1 : PuC	F2 : EIC	F3 : AuIn	F4:OO	CES
F1 : Pupil-centered (PuC)	1				
F2 : Enthusiasm, Innovation, and Competition (EIC)	.75**	1			
F3 : Authoritativeness and Indulgence (AuIn)	.50**	.49**	1		
F4 : Order and Organization (OO)	.65**	.58**	.54**	1	
CES	.90**	.89**	.72**	.79**	1

Note.  $N = 1000$ . \*\*  $p < .01$ .

**4.10.2.2 Discriminant validity.** It was hypothesized that there would be negative or non-significant correlations between the FES and LACERQ, between FES and HS, between FES and CHS, between CES and HS, between CES and CHS, between CES and LACERQ, between SES and CHS, between SES and LACERQ, between SES and HS, between SMI and CHS, between SMI and LACERQ, between SMI and HS, between EIS and CHS, between EIS and LACERQ, between EIS and HS, between ACERQ and CHS, between ACERQ and LACERQ, between ACERQ and HS, between FAS and CHS,

between FAS and LACERQ, and between FAS and HS. As hypothesized, FES had non-significant correlation with LACERQ ( $r = -.04$ ), and significantly negative correlations with both CHS ( $r = -.23$ ) and HS ( $r = -.19$ ). Similarly, CES had significantly negative correlations with CHS ( $r = -.23$ ) and HS ( $r = -.17$ ), but positive correlation with LACERQ ( $r = .05$ ). FAS had significantly negative correlations with CHS ( $r = -.20$ ) and HS ( $r = -.19$ ) and non-significant correlation with LACERQ ( $r = .01$ ). SMI had significantly negative correlations with CHS ( $r = -.45$ ) and HS ( $r = -.23$ ) and non-significant correlation with LACERQ ( $r = .11$ ). EIS had significantly negative correlations with CHS ( $r = -.34$ ) and HS ( $r = -.16$ ) and non-significant correlation with LACERQ ( $r = .06$ ). SMI had negative correlations with CHS ( $r = -.24$ ) and HS ( $r = -.10$ ), but significantly positive correlation with LACERQ ( $r = .11$ ). Finally, SES had significantly negative correlations with CHS ( $r = -.36$ ) and HS ( $r = -.23$ ), but significantly positive with LACERQ ( $r = .10$ ). All these values fairly support the discriminant validity (Table 64) of the measures.

Table 64  
*Correlation matrix for different measures*

Scale	ACERQ	LACERQ	EIS	FAS	SMI	SES	CHS	HS	FES	CES
ACERQ	1									
LACERQ	.35**	1								
EIS	.21**	-.06	1							
FAS	.15**	.01	.26**	1						
SMI	.39**	.11**	.46**	.29**	1					
SES	.27**	.10**	.39**	.26**	.63**	1				
CHS	-.24**	.09**	-.34**	-.20**	-.45**	-.36**	1			
HS	-.10**	.07*	-.16**	-.19**	-.23**	-.23**	.26**	1		
FES	.13**	-.04	.27**	.12**	.37**	.38**	-.23**	-.19**	1	
CES	.15**	.05*	.25**	.15**	.44**	.47**	-.23**	-.17**	.49**	1

\*\*  $p < .01$ . \*  $p < .05$ .

**4.11 Reliability**

The inter-item correlation matrix of each scale or subscale contained no negative values (Table 24, Table 25, Table 30, Table 34, Table 36, Table 40, Table 43, Table 46, Table 48, Table 52), indicating that the items were measuring the characteristics that the respective scale or subscale was supposed to measure. The reliability of the Bangla

version of each scale was further examined by estimating internal consistency. The coefficient of the Cronbach's  $\alpha$  was calculated (Table 65).

***Adaptive CERQ.*** Cronbach's  $\alpha$  (Unstandardized) for the Bangla version Adaptive CERQ was .84, for the 1st sample, .83 for the 2<sup>nd</sup> sample, and .85 for the combined sample. The coefficient for the 'Refocuse on Positive Thoughts and Planning', and 'Positive Reappraisal and Putting into Perspective' were .83 and .77 for the 1<sup>st</sup> sample; .82 and .77 for the 2<sup>nd</sup> sample, and .83 and .77 for the combined sample.

***Less Adaptive CERQ.*** Cronbach's  $\alpha$  (Unstandardized) for the Bangla version Less ACERQ was .77 for the 1<sup>st</sup> sample, .80 for both the 2<sup>nd</sup> and the combined sample. The coefficients for the 'Rumination and Catastrophizing', 'Self-blame' were .74, .72 for the 1<sup>st</sup> sample; .76, .71 for the 2<sup>nd</sup> sample, and .75, .71 for the combined sample.

Table 65  
Cronbach's  $\alpha$  (Unstandardized)

Name and dimensions of the scales		Unstandardized $\alpha$		
The Scale	Dimensions	Sample 1(500)	Sample 11(500)	Total sample :1000
ACERQ	Refocus on Positive Thoughts and Planning (RPTP)	.84	.85	.85
	Positive Reappraisal and Putting into Perspective (PRPP)	.83	.82	.83
LACERQ		.77	.80	.80
	Rumination and Catastrophizing (RC)	.74	.76	.75
EIS	Self-blame (SB)	.72	.71	.71
	Self-confidence and Analytic (SCA)	.93	.92	.92
	Self-awareness and Development (SAD)	.80	.73	.77
	Empathy (E)	.83	.81	.82
	Emotional Stability (ES)	.80	.80	.80
	Enthusiasm and Firmness (EF)	.72	.66	.69
	Integrity and Commitment (IC)	.72	.71	.71
	Survival (S)	.76	.74	.75
FAS		.67	.62	.58
SMI		.78	.75	.77
	Commitment, Interest, and Enthusiasm (CIE)	.91	.91	.91
	Affiliation with Parents and Peers (APP)	.90	.89	.89
SES	Making Excuse and Blaming Others (MEBO)	.76	.80	.79
		.72	.65	.68
	Cognitive Engagement (CogEn)	.89	.87	.88
	Behavioural Engagement (BE)	.84	.82	.83
CHS	Emotional Engagement (EE)	.78	.70	.74
		.77	.80	.77
	Pessimistic (P)	.65	.63	.64
HS	Optimistic (O)	.65	.61	.63
		.45	.46	.46
FES		.65	.70	.68
CES	Achievement-, Order- and Culture Orientation (AOCR)	.93	.92	.92
	Emotional Atmosphere (EA)	.92	.91	.92
	Pupil-centered (PuC)	.79	.78	.79
CES	Enthusiasm, Innovation, and Competition (EIC)	.95	.94	.95
	Authoritativeness and Indulgence (AuIn)	.91	.90	.90
	Order and Organization (OO)	.90	.90	.90
		.80	.76	.78
		.83	.80	.82

**Internal consistency of EIS.** Cronbach's  $\alpha$  (Unstandardized) for the Bangla version EIS was .93, for the 1<sup>st</sup> sample, .92 for both the 2<sup>nd</sup> and the combined sample. The coefficients for the 'Self-confidence and Analytic', 'Self-awareness and Development', Empathy, Emotional Stability, 'Enthusiasm and Firmness', 'Integrity and Commitment', and Survival were .80, .83, .80, .72, .72, .76, and .67 for the 1<sup>st</sup> sample; .73, .81, .80, .66, .71, .74, and .62 for the 2<sup>nd</sup> sample, and .77, .82, .80, .69, .71, .75, and .58 for the combined sample.

**Internal consistency of FAS.** Cronbach's  $\alpha$  (Unstandardized) for the Bangla version FAS was .78 for the 1<sup>st</sup> sample, .75 for the 2<sup>nd</sup> sample, and .77 for the combined sample.

**Internal consistency of SMI.** Cronbach's  $\alpha$  (Unstandardized) for the Bangla version SMI was .91 for both the two samples and for the combined sample. The coefficients for the 'Commitment, Interest, and Enthusiasm', 'Affiliation with Parents and Peers', and 'Making Excuse and Blaming Others' were .90, .76, and .72 for the 1<sup>st</sup> sample; .89, .90, and .65 for the 2<sup>nd</sup> sample and .89, .79, and .68 for the combined sample.

**Internal consistency of SES.** Cronbach's  $\alpha$  (Unstandardized) for the Bangla version SES was .89 for the 1<sup>st</sup> sample, .87 for the 2<sup>nd</sup> sample, and .88 for the combined sample. The coefficients for the 'Cognitive Engagement', 'Behavioural Engagement, and Emotional Engagement' were .84, .78, and .78 for the 1<sup>st</sup> sample; .82, .70, and .78 were for the 2<sup>nd</sup> sample, and .83, .74, and .77 for the combined sample.

**Internal consistency of CHS.** Cronbach's  $\alpha$  (Unstandardized) for the Bangla version CHS was .65 for the 1<sup>st</sup> sample, .63 for the 2<sup>nd</sup> sample, and .64 for the combined sample. The coefficients for the 'Pessimistic' and 'Optimistic' were .65 and .45 for the 1<sup>st</sup> sample, .61 and .46 for the 2<sup>nd</sup> sample, and .63 and .46 for the combined sample.

**Internal consistency of HS.** Cronbach's  $\alpha$  (Unstandardized) for the Bangla version HS was .65 for the 1<sup>st</sup> sample, .70 for the 2<sup>nd</sup> sample, and .68 for the combined sample.

**Internal consistency of FES.** Cronbach's  $\alpha$  (Unstandardized) for the Bangla version FES was .93 for the 1<sup>st</sup> sample, .92 for the 2<sup>nd</sup> sample, and .92 for combined sample. The coefficients for the 'Achievement-, Order-, and Culture Orientation', 'Emotional Atmosphere' were .92 and .79 for the 1<sup>st</sup> sample, .91 and .78 were for the 2<sup>nd</sup> sample and .92 and .79 for the combined sample.

**Internal consistency of CES.** Cronbach's  $\alpha$  (Unstandardized) for the Bangla version CES was .95 for the 1<sup>st</sup> sample, .94 for the 2<sup>nd</sup> sample, and .95 for combined sample. The

coefficients for the 'Pupil-Centered', 'Enthusiasm, Innovation, and Competition', 'Order and Organization', 'Authoritativeness and Indulgence' were .91, .90, .80, and .83 for the 1<sup>st</sup> sample; .90, .90, .76, .80 for the 2<sup>nd</sup> sample and .90, .90, .78, .82 for combined sample.



## Results

### 5.1 Preliminary analyses

The relationship of the socio-demographic variables such as gender, socio-economic status, and family type with the major study variables such as ACER, LACER, EI, FA, SM, ScEn, CH, and H were investigated. Data were analyzed in MANOVA Multivariate Analysis of Variance using gender, socio-economic status, and family type as independent variables and ACER, LACER, EI, FA, SM, ScEn, CH, and H as criterion/dependent variables. Table 66 shows the results of MANOVA. As illustrated by the multivariate (Pillai's

Table 66  
MANOVA for group differences in ACER, LACER, EI, FA, SM, ScEn, CH, and H

Group Effect and Dependent Variable		Statistics	
		Pillai's trace (F)	Univariate (F)
Gender		4.543**	
	Adaptive Cognitive Emotion Regulation (ACER)		16.939**
	Less Adaptive Cognitive Emotion Regulation (LACER)		1.463
	Emotional Intelligence (EI)		1.999
	Future Aspiration (FA)		1.141
	School Motivation (SM)		14.226**
	School Engagement (ScEn)		.708
	Children Hopelessness (CH)		2.233
	Hostility (H)		.077
Socio-economic Status		1.081	
	Adaptive Cognitive Emotion Regulation (ACER)		.138
	Less Adaptive Cognitive Emotion Regulation (LACER)		3.369**
	Emotional Intelligence (EI)		.939
	Future Aspiration (FA)		.326
	School Motivation (SM)		.250
	School Engagement (ScEn)		.162
	Children Hopelessness (CH)		.326
	Hostility (H)		1.665
Family Type		1.564	
	Adaptive Cognitive Emotion Regulation (ACER)		1.694
	Less Adaptive Cognitive Emotion Regulation (LACER)		3.895**
	Emotional Intelligence (EI)		1.984
	Future Aspiration (FA)		2.629
	School Motivation (SM)		.854
	School Engagement (ScEn)		2.096
	Children Hopelessness (CH)		4.639**
	Hostility (H)		.292

Gender × Family Type		1.192	
	Adaptive Cognitive Emotion Regulation (ACER)		.024
	Less Adaptive Cognitive Emotion Regulation (LACER)		1.761
	Emotional Intelligence (EI)		.077
	Future Aspiration (FA)		.241
	School Motivation (SM)		.159
	School Engagement (ScEn)		.585
	Children Hopelessness (CH)		.489
	Hostility (H)		3.504
Gender × Socio-economic Status		.808	
	Adaptive Cognitive Emotion Regulation (ACER)		.977
	Less Adaptive Cognitive Emotion Regulation (LACER)		1.433
	Emotional Intelligence (EI)		.382
	Future Aspiration (FA)		.332
	School Motivation (SM)		1.614
	School Engagement (ScEn)		1.280
	Children Hopelessness (CH)		.840
	Hostility (H)		.360
Family Type × Socio-economic Status		1.126	
	Adaptive Cognitive Emotion Regulation (ACER)		.906
	Less Adaptive Cognitive Emotion Regulation (LACER)		1.439
	Emotional Intelligence (EI)		.106
	Future Aspiration (FA)		1.620
	School Motivation (SM)		.048
	School Engagement (ScEn)		.734
	Children Hopelessness (CH)		1.440
	Hostility (H)		.988
Gender × Family Type × Socio-economic Status		1.505	
	Adaptive Cognitive Emotion Regulation (ACER)		.456
	Less Adaptive Cognitive Emotion Regulation (LACER)		3.205**
	Emotional Intelligence (EI)		.505
	Future Aspiration (FA)		.078
	School Motivation (SM)		.026
	School Engagement (ScEn)		.469
	Children Hopelessness (CH)		1.093
	Hostility (H)		4.406**

\*\*  $p < .05$ .

Trace) statistics the overall effect of gender on a linear combination of the eight dependent variables were significant while the effects of family type and socio-economic status were not significant. The univariate results show that gender has significant effect only on ACER and SM. The nature of the impact of gender on ACER and SM is shown below in Table 67, Table 68, Figure 25, and Figure 26.

Table 67

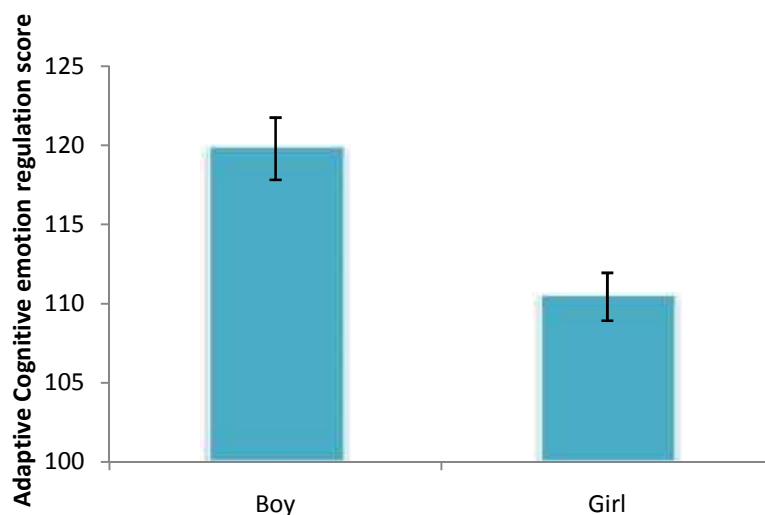
*Descriptive statistics for males and females on SM and SM dimensions*

SM dimensions/ SM	Female (n = 509)		Male (n = 491)	
	Mean	SE	Mean	SE
1. Commitment, interest, and enthusiasm	66.36	.56	61.72	.61
2. Affiliation with parents and peers	33.58	.24	30.85	.31
3. Making excuse and blaming others	20.27	.19	17.86	.22
SM	120.21	.82	110.44	.94

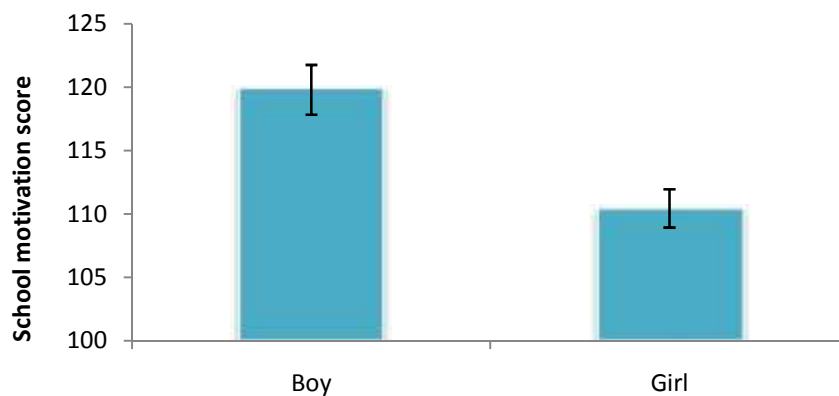
Table 68

*Descriptive statistics for males and females on Adaptive CER and Adaptive CER dimensions*

Adaptive CER/Adaptive CER dimensions	Female (n = 509)		Male (n = 491)	
	Mean	SE	Mean	SE
1. Refocus on positive thoughts and planning	22.54	.16	20.95	.20
2. Positive reappraisal and putting into perspective	28.37	.25	26.29	.26
3. Adaptive cognitive emotion regulation	50.91	.36	47.24	.41



**Figure 25.** Mean scores with SEs yielded by the boy and girl participants.



**Figure 26. Mean scores with SEs yielded by the boy and girl participants.**

As shown in the above figures and tables male adolescents have stronger ACER ( $M = 51.576$ ,  $SE = .862$ ) than female adolescents ( $M = 47.100$ ,  $SE = .662$ ) and they have also stronger SM ( $M = 119.801$ ,  $SE = 1.967$ ) than female adolescents ( $M = 110.446$ ,  $SE = 1.511$ ).

Based on these preliminary outcomes, data were analyzed separately for female and male participants in Stage 1, and collapsed across the levels of gender, socioeconomic status and family type in Stage 2 of the main analyses below. Here, it should be mentioned that according to conventional practice we did not take into consideration any significant univariate effects for separating data if the overall effects were non-significant as in the cases of socioeconomic status and family type (Table 66). Similarly, we did not take into consideration any interaction effect even if it was significant as in the case of a three-way interaction (Table 66).

## 5.2 Main analyses

### Stage 1

The significant effect of gender on ACER and SM led us to analyze both the ACER and SM data separately for male and female adolescents. We analyzed the data in multivariate multiple regression using FE and CE as the predictors and ACER and SM as the criterion variables. The results are depicted below (Table 69-Table 72).

**5.2.1 The impact of FE and CE on ACER and SM**

Table 69

*Multivariate and univariate test results (for female participants)*

Criterion variables	Statistics	
	Multivariate: Wilks' Lambda (F)	Univariate (F)
Adaptive cognitive emotion regulation (ACER)	25.037**	9.365**
School motivation (SM)		51.603**

Predictors: Family environment and school environment.

\*\* $P < .001$ .

The multivariate  $F$  statistic for Wilks' Lambda indicates that family and school environment have overall significant effect on adaptive cognitive emotion regulation and school motivation. The univariate  $F$  statistics also show that the overall model is statistical significant for both the criterion variables: adaptive cognitive emotion regulation and school motivation.

Table 70

*Parameter estimates (for female participants)*

Criterion Variables		B	SE	t
<sup>a</sup> .Adaptive Cognitive Emotion Regulation (ACER)	Intercept	37.476	3.188	11.756
	FE	.045	.029	1.554
	CE	.052	.019	2.702*
<sup>b</sup> .School Motivation (SM)	Intercept	52.342	6.728	7.780
	FE	.313	.061	5.106**
	CE	.205	.041	5.003**

a. Adjusted  $R^2 = .032$ , b. Adjusted  $R^2 = .166$ . \*  $p < .05$ . \*\*  $p < .001$ .

The parameter estimates in Table 70 indicates that both family environment (FE) and school/classroom environment (CE) have significant associations with SM. However, it is CE that has significant association with the ACER. The unstandardized regression coefficients ( $B$ , SPSS does not show standardized regression coefficients in multivariate multiple regression analysis) indicate that for 1 raw unit increment of FE, SM increases by .313 raw units, and for 1 raw unit increment of CE, ACER and SM increase by .052 and .205 raw units respectively.

Table 71

*Multivariate and univariate test results (for male participants)*

Criterion variables	Statistics	
	Multivariate: Wilks' Lambda (F)	Univariate (F)
Adaptive cognitive emotion regulation (ACER)	42.638**	3.839*
School motivation (SM)		89.112**

Predictors: Family environment and school environment

\*\*  $P < .001$ . \*  $p < .05$ .

The multivariate  $F$  statistic for Wilks' Lambda indicates that family and school/classroom environment have overall significant effect on the adaptive cognitive emotion regulation and school motivation. The univariate  $F$  statistics also show that the overall model is statistical significant for the criterion variables: adaptive cognitive emotion regulation and school motivation.

Table 72

*Parameter estimates (for male participants)*

Criterion Variable		B	SE	t
a. Adaptive Cognitive Emotion Regulation (ACER)	Intercept	38.203	3.295	11.595
	FE	.063	.013	2.005*
	CE	.013	.018	.717
b. School Motivation (SM)	Intercept	29.467	6.490	4.840
	FE	.317	.062	5.142**
	CE	.296	.035	8.344**

a. Adjusted  $R^2 = .011$ , b. Adjusted  $R^2 = .20$ . \*  $p < .05$ . \*\*  $p < .001$ .

The parameter estimates in Table 72 indicate that both family environment (FE) and school/classroom environment (CE) have significant associations with SM. However, it is FE that has significant association with ACER. The unstandardized regression coefficients ( $B$ ) indicate that for 1 raw unit increment of FE, ACER and SM increase by .063 and .317 raw units respectively, and for 1 raw unit increment of CE, SM increases by .063 raw units.

As the effects of gender, socioeconomic status, and family type were non-significant for the other six dependent variables such as less adaptive cognitive emotion regulation (LACER), emotional intelligence (EI), future aspiration (FA), school engagement (ScEn),

children hopelessness (CH), and hostility (H), data were collapsed for these dependent variables across the levels of the independent variables such as family environment (FE) and school/classroom environment (CE). That is, we analyzed the data for these DV's combinedly using FE and CE as the independent variables. The results are shown below (Table 73, Table 74).

Satge 2

In this stage, data for the other six variables, such as less adaptive cognitive emotion regulation, emotional intelligence, future aspiration, school engagement, hopelessness, and hostility, were collapsed across the levels of gender, socio-economic status, and family type, and then analyzed in MANOVA using family atmosphere and school environment as the predictors. The results are depicted below (Table 73, Table 74).

**5.2.2 The impact of FE and CE on LACER, EIS, FA, ScEn, CH, and H**

Table 73

*Multivariate and univariate test results (data being collapsed across gender)*

Criterion variables	Statistics	
	Multivariate: Wilks' Lambda (F)	Univariate (F)
Less Adaptive Cognitive Emotion Regulation (LACER)		4.138*
Emotional Intelligence (EI)		48.106**
Future Aspiration (FA)	29.313**	12.174**
School Engagement (ScEn)		164.797**
Children Hopelessness (CH)		35.440**
Hostility (H)		21.990**

Predictors: Family environment and school environment.

\*  $p < .05$ . \*\*  $p < .001$ .

The multivariate  $F$  statistic for Wilks' Lambda indicates that family and school environment have overall significant effect on less adaptive cognitive emotion regulation, emotional intelligence, future aspiration, school engagement, children hopelessness and hostility. The univariate  $F$  statistics also show that the overall model is statistical significant

for the criterion variables: less adaptive cognitive emotion regulation, emotional intelligence, future aspiration, school engagement, children hopelessness and hostility.

Table 74

*Parameter estimates (for the overall model)*

Dependent Variable		<i>B</i>	SE	<i>t</i>
<sup>a</sup> Less Adaptive Cognitive Emotion Regulation (LACER)	Intercept	38.917	2.324	16.749
	FE	-.051	.022	-2.346*
	CE	.034	.013	2.593*
<sup>b</sup> Emotional Intelligence (EI)	Intercept	78.446	4.874	16.094
	FE	.251	.045	5.527**
	CE	.122	.028	4.414**
<sup>c</sup> Future Aspiration (FA)	Intercept	16.828	.838	20.073
	FE	.013	.008	1.678
	CE	.015	.005	3.248***
<sup>d</sup> School Engagement (ScEn)	Intercept	16.810	2.627	6.398
	FE	.150	.024	6.151***
	CE	.179	.015	11.967***
<sup>e</sup> Children Hopelessness (CH)	Intercept	5.684	.458	12.403
	FE	-.017	.004	-4.027***
	CE	-.012	.003	-4.520***
<sup>f</sup> Hostility (H)	Intercept	16.437	.863	19.042
	FE	-.031	.008	-3.920***
	CE	-.014	.005	-2.783**

a. Adjusted  $R^2 = .040$ , b. Adjusted  $R^2 = .086$ , c. Adjusted  $R^2 = .022$ , d. Adjusted  $R^2 = .247$ , e. Adjusted  $R^2 = .065$ , f. Adjusted  $R^2 = .040$ . \*  $p < .05$ . \*\*  $p < .005$ . \*\*\*  $p < .001$ .

The parameter estimates in Table 74 indicates that both family environment (FE) and school/classroom environment (CE) have significant associations with LACER, EI, ScEn, CH and Hostility. However, it is CE that significant association with FA. The unstandardized regression coefficients (*B*) indicate that for one raw unit increament of FE less adaptive cognitive emotion regulation decreases by .051 raw units, and for one unit increment of CE it increases by .034 raw units. For one raw unit increament of FE and one raw unit increment of CE the emotional intelligence increases by .251 and .122 raw units respectively; for one raw unit increment of CE future aspiration increases by .015 raw units however, future aspiration does not change with FE. For one raw unit increament of FE and one raw unit increment of CE school engagement increases by .150 and .179 raw units; for one raw unit increament of



FE and one raw unit increment of CE children's hopelessness decreases by -.017 and -.012 raw units; for one raw unit increment of FE and one raw unit increment of CE children's hopelessness decreases by -.031 and -.014 raw units respectively.

### 5.3 Supplementary findings

**5.3.1 Correlation between family environment and the study variables.** The different aspects of family environment were correlated with the major variables such as ACER, LACER, EI, FA, SM, ScEn, CH, and Hostility and the dimensions of ACER, LACER, EI, SM, ScEn, and CH. Results (Table 75) showed that FE is significantly associated with adaptive cognitive emotion regulation ( $r = .13, p < .01$ ), and its dimensions such as 'refocus on positive thoughts and planning' ( $r = .15, p < .01$ ), 'positive reappraisal and putting into perspective' ( $r = .09, p < .01$ ). But, it was non-significantly associated with less adaptive cognitive emotion regulation ( $r = -.01$ ) and its dimensions such as 'self-blame' ( $r = .03$ ) but significantly associated with 'rumination and catastrophizing' ( $r = -.04, p < .05$ ). Consistently, it was significantly associated with emotional intelligence ( $r = .27, p < .01$ ), and its dimensions such as 'self-confidence and analytic' ( $r = .20, p < .01$ ), 'self-awareness and development' ( $r = .22, p < .01$ ), 'empathy' ( $r = .11, p < .01$ ), 'emotional stability' ( $r = .16, p < .01$ ), 'enthusiasm and firmness' ( $r = .22, p < .01$ ), 'integrity and commitment', ( $r = .22, p < .01$ ), and survival, ( $r = .26, p < .01$ ). FE was significantly associated with future aspiration ( $r = .12, p < .01$ ). Consistently, it was significantly associated with school motivation ( $r = .37, p < .01$ ), and its dimensions such as 'commitment, interest, and enthusiasm' ( $r = .35, p < .01$ ), 'affiliation with parents and peers' ( $r = .27, p < .01$ ), 'making excuse and blaming others' ( $r = .22, p < .01$ ). Furthermore, it was significantly associated with the school engagement ( $r = .37, p < .01$ ), and its dimensions such as cognitive engagement ( $r = .35, p < .01$ ), behavioural engagement ( $r = .29, p < .01$ ), and emotional engagement ( $r = .29, p < .01$ ). Again, it was significantly associated with children hopelessness ( $r = -.22, p < .01$ ), and its dimension such

as pessimistic ( $r = -.20, p < .01$ ), optimistic ( $r = -.15, p < .01$ ). Finally, FE is significantly associated with hostility ( $r = -.19, p < .01$ ).

'Achievement-, order- and culture orientation' aspect of FE is significantly associated with adaptive cognitive emotion regulation ( $r = .13, p < .01$ ), and its dimensions such as 'refocus on positive thoughts and planning' ( $r = .14, p < .01$ ), 'positive reappraisal and putting into perspective' ( $r = .09, p < .01$ ). But, it was non-significantly associated with less adaptive cognitive emotion regulation ( $r = -.039$ ) and its dimensions such as 'self-blame' ( $r = .02$ ), but significantly associated with 'rumination and catastrophizing' ( $r = -.07, p < .05$ ). Consistently, it was significantly associated with emotional intelligence ( $r = .27, p < .01$ ), and its dimensions such as 'self-confidence and analytic' ( $r = .22, p < .01$ ), 'self-awareness and development' ( $r = .23, p < .01$ ), 'empathy' ( $r = .10, p < .01$ ), 'emotional stability' ( $r = .16, p < .01$ ), 'enthusiasm and firmness' ( $r = .22, p < .01$ ), 'integrity and commitment', ( $r = .23, p < .01$ ), and survival, ( $r = .27, p < .01$ ). FE was significantly associated with future aspiration ( $r = .12, p < .01$ ). Consistently, it was significantly associated with school motivation ( $r = .37, p < .01$ ), and its dimensions such as 'commitment, interest, and enthusiasm' ( $r = .36, p < .01$ ), 'affiliation with parents and peers' ( $r = .27, p < .01$ ), 'making excuse and blaming others' ( $r = .20, p < .01$ ). Furthermore, it was significantly associated with school engagement ( $r = .38, p < .01$ ), and its dimensions such as cognitive engagement ( $r = .36, p < .01$ ), behavioural engagement ( $r = .29, p < .01$ ), and emotional engagement ( $r = .29, p < .01$ ). Again, it was significantly associated with children hopelessness ( $r = -.19, p < .01$ ), and its dimensions such as pessimistic ( $r = -.17, p < .01$ ), optimistic ( $r = -.15, p < .01$ ). Finally, FE is significantly associated with hostility ( $r = -.15, p < .01$ ).

Again, 'Emotional atmosphere' aspect of FE is significantly associated with adaptive cognitive emotion regulation ( $r = .10, p < .01$ ), and its dimensions such as 'refocus on

positive thoughts and planning' ( $r = .09, p < .01$ ), 'positive reappraisal and putting into perspective' ( $r = .08, p < .05$ ). It was significantly associated with less adaptive cognitive emotion regulation ( $r = -.09, p < .05$ ) and its dimension such as 'rumination and catastrophizing' ( $r = -.12, p < .05$ ), but non-significantly associated with 'self-blame' ( $r = .01$ ). FE was significantly associated with emotional intelligence ( $r = .18, p < .01$ ), and its dimensions such as 'self-confidence and analytic' ( $r = .11, p < .01$ ), 'self-awareness and development' ( $r = .15, p < .01$ ), 'empathy' ( $r = .08, p < .01$ ), 'emotional stability' ( $r = .13, p < .01$ ), 'enthusiasm and firmness' ( $r = .15, p < .01$ ), 'integrity and commitment', ( $r = .14, p < .01$ ), and survival, ( $r = .17, p < .01$ ). FE was non-significantly associated with future aspiration ( $r = .05, p < .01$ ). Consistently, it was significantly associated with school motivation ( $r = .26, p < .01$ ), and its dimensions such as 'commitment, interest, and enthusiasm' ( $r = .22, p < .01$ ), 'affiliation with parents and peers' ( $r = .19, p < .01$ ), 'making excuse and blaming others' ( $r = .24, p < .01$ ). Furthermore, it was significantly associated with school engagement ( $r = .26, p < .01$ ), and its dimensions such as cognitive engagement ( $r = .23, p < .01$ ), behavioural engagement ( $r = .21, p < .01$ ), and emotional engagement ( $r = .21, p < .01$ ). Again, it was significantly associated with children hopelessness ( $r = -.21, p < .01$ ), and its dimensions such as pessimistic ( $r = -.21, p < .01$ ), optimistic ( $r = -.11, p < .01$ ). Finally, FE is significantly associated with hostility ( $r = -.23, p < .01$ ).

**5.3.2 Correlation between classroom environment and the study variables.** The different aspects of school environment were correlated with the major variables such as ACER, LACER, EI, FA, SM, ScEn, CH, and Hostility and the dimensions of ACER, LACER, EI, SM, ScEn, and CH. Results (Table 76) showed that CE is significantly associated with adaptive cognitive emotion regulation ( $r = .15, p < .01$ ), and its dimensions such as 'refocus on positive thoughts and planning' ( $r = .19, p < .01$ ),

'positive reappraisal and putting into perspective' ( $r = .09, p < .01$ ). But CE (classroom environment) is non-significantly associated with less adaptive cognitive emotion regulation ( $r = .05$ ), and its dimensions such as 'rumination and catastrophizing' ( $r = .04$ ), 'self-blame' ( $r = .06$ ). CE is significantly associated with emotional intelligence ( $r = .24, p < .01$ ), and its dimensions such as 'self-confidence and analytic' ( $r = .20, p < .01$ ), 'self-awareness and development' ( $r = .20, p < .01$ ), empathy ( $r = .12, p < .01$ ), emotional stability ( $r = .16, p < .01$ ), 'enthusiasm and firmness' ( $r = .22, p < .01$ ), 'integrity and commitment', ( $r = .18, p < .01$ ), survival, ( $r = .20, p < .01$ ). Consistently, CE is significantly associated with future aspiration ( $r = .15, p < .01$ ). Furthermore, CE is significantly associated with school motivation ( $r = .44, p < .01$ ), and its dimension such as 'commitment, interest, and enthusiasm' ( $r = .43, p < .01$ ), 'affiliation with parents and peers' ( $r = .22, p < .01$ ), and 'making excuse and blaming others' ( $r = .36, p < .01$ ). Consistently, CE is significantly associated with school engagement ( $r = .47, p < .01$ ), and its dimensions such as cognitive engagement ( $r = .36, p < .01$ ), behavioural engagement ( $r = .39, p < .01$ ), emotional engagement ( $r = .45, p < .01$ ). Again, CE is significantly associated with children hopelessness ( $r = -.23, p < .01$ ), and its dimensions such as pessimistic ( $r = -.20, p < .01$ ), optimistic ( $r = -.17, p < .01$ ). Finally, CE is significantly associated with hostility ( $r = -.17, p < .01$ ).

Pupil-centered aspect of CE is significantly associated with adaptive cognitive emotion regulation ( $r = .16, p < .01$ ), and its dimensions such as 'refocus on positive thoughts and planning' ( $r = .20, p < .01$ ), 'positive reappraisal and putting into perspective' ( $r = .10, p < .01$ ). Consistently, CE is significantly associated with less adaptive cognitive emotion regulation ( $r = .05, p < .05$ ), and its dimensions such as 'rumination and catastrophizing' ( $r = .07, p < .05$ ), 'self-blame' ( $r = .07, p < .05$ ). CE is significantly associated with emotional intelligence ( $r = .22, p < .01$ ), and its dimensions

such as 'self-confidence and analytic' ( $r = .18, p < .01$ ), 'self-awareness and development' ( $r = .19, p < .01$ ), empathy ( $r = .12, p < .01$ ), emotional stability ( $r = .15, p < .01$ ), 'enthusiasm and firmness' ( $r = .16, p < .01$ ), 'integrity and commitment', ( $r = .16, p < .01$ ), survival, ( $r = .19, p < .01$ ). Consistently, CE is significantly associated with future aspiration ( $r = .14, p < .01$ ). Furthermore, CE is significantly associated with school motivation ( $r = .42, p < .01$ ), and its dimension such as 'commitment, interest, and enthusiasm' ( $r = .41, p < .01$ ), 'affiliation with parents and peers' ( $r = .26, p < .01$ ), and 'making excuse and blaming others' ( $r = .30, p < .01$ ). Consistently, CE is significantly associated with school engagement ( $r = .40, p < .01$ ), and its dimensions such as cognitive engagement ( $r = .30, p < .01$ ), behavioural engagement ( $r = .33, p < .01$ ), emotional engagement ( $r = .39, p < .01$ ). Again, CE is significantly associated with children hopelessness ( $r = -.19, p < .01$ ), and its dimensions such as pessimistic ( $r = -.16, p < .01$ ), optimistic ( $r = -.16, p < .01$ ). Finally, CE is significantly associated with hostility ( $r = -.09, p < .01$ ).

'Enthusiasm, innovation, and competition' aspect of CE is significantly associated with adaptive cognitive emotion regulation ( $r = .10, p < .01$ ), and its dimensions such as 'refocus on positive thoughts and planning' ( $r = .14, p < .01$ ), but non-significantly associated with 'positive reappraisal and putting into perspective' ( $r = .04$ ). Again, CE is non-significantly associated with less adaptive cognitive emotion regulation ( $r = .05, p < .05$ ), and its dimensions such as 'rumination and catastrophizing' ( $r = .05, p < .05$ ), 'self-blame' ( $r = .03, p < .05$ ). CE is significantly associated with emotional intelligence ( $r = .22, p < .01$ ), and its dimensions such as 'self-confidence and analytic' ( $r = .17, p < .01$ ), 'self-awareness and development' ( $r = .20, p < .01$ ), emotional stability ( $r = .11, p < .01$ ), 'enthusiasm and firmness' ( $r = .24, p < .01$ ), 'integrity and commitment', ( $r = .19, p < .01$ ), survival, ( $r = .18, p < .01$ ) but non-significantly associated with empathy ( $r = .05$ ).

Consistently, CE is significantly associated with future aspiration ( $r = .11, p < .01$ ). CE is significantly associated with school motivation ( $r = .36, p < .01$ ), and its dimensions such as 'commitment, interest, and enthusiasm' ( $r = .38, p < .01$ ), 'affiliation with parents and peers' ( $r = .15, p < .01$ ), and 'making excuse and blaming others' ( $r = .25, p < .01$ ). CE is significantly associated with school engagement ( $r = .45, p < .01$ ), and its dimensions such as cognitive engagement ( $r = .36, p < .01$ ), behavioural engagement ( $r = .35, p < .01$ ), and emotional engagement ( $r = .43, p < .01$ ). Again, CE is significantly associated with children hopelessness ( $r = -.18, p < .01$ ), and its dimension such as pessimistic ( $r = -.13, p < .01$ ), optimistic ( $r = -.16, p < .01$ ). Finally, CE is significantly associated with hostility ( $r = -.15, p < .01$ ).

'Authoritativeness and indulgence' aspect of CE is significantly associated with adaptive cognitive emotion regulation ( $r = .09, p < .01$ ), and its dimensions such as 'refocus on positive thoughts and planning' ( $r = .12, p < .01$ ), but non-significantly associated with 'positive reappraisal and putting into perspective' ( $r = .05$ ). Again, CE is non-significantly associated with less adaptive cognitive emotion regulation ( $r = -.01$ ), and its dimensions such as 'rumination and catastrophizing' ( $r = -.05$ ), 'self-blame' ( $r = .04$ ). CE is significantly associated with emotional intelligence ( $r = .15, p < .01$ ), and its dimension such as 'self-confidence and analytic' ( $r = .11, p < .01$ ), 'self-awareness and development' ( $r = .10, p < .01$ ), empathy ( $r = .12, p < .01$ ), emotional stability ( $r = .13, p < .01$ ), 'enthusiasm and firmness' ( $r = .16, p < .01$ ), 'integrity and commitment', ( $r = .10, p < .01$ ), survival, ( $r = .10, p < .01$ ). Consistently, CE is significantly associated with future aspiration ( $r = .11, p < .01$ ). CE is significantly associated with school motivation ( $r = .32, p < .01$ ), and its dimension such as 'commitment, interest, and enthusiasm' ( $r = .29, p < .01$ ), 'affiliation with parents and peers' ( $r = .15, p < .01$ ), and 'making excuse and blaming others' ( $r = .37, p < .01$ ). CE is significantly associated with school

engagement ( $r = .34, p < .01$ ), and its dimensions such as cognitive engagement ( $r = .26, p < .01$ ), behavioural engagement ( $r = .27, p < .01$ ), emotional engagement ( $r = .34, p < .01$ ). Again, CE is significantly associated with children's hopelessness ( $r = -.18, p < .01$ ), and its dimensions such as pessimistic ( $r = -.19, p < .01$ ), optimistic ( $r = -.09, p < .01$ ). Finally, CE is significantly associated with hostility ( $r = -.23, p < .01$ ).

'Order and organization' aspect of CE is significantly associated with adaptive cognitive emotion regulation ( $r = .16, p < .01$ ), and its dimensions such as 'refocus on positive thoughts and planning' ( $r = .19, p < .01$ ), 'positive reappraisal and putting into perspective' ( $r = .10$ ). Again, CE (classroom environment) is non-significantly associated with less adaptive cognitive emotion regulation ( $r = -.04$ ), and its dimensions such as 'rumination and catastrophizing' ( $r = -.03$ ), 'self-blame' ( $r = .05$ ). CE is significantly associated with emotional intelligence ( $r = .21, p < .01$ ), and its dimensions such as 'self-confidence and analytic' ( $r = .20, p < .01$ ), 'self-awareness and development' ( $r = .15, p < .01$ ), empathy ( $r = .15, p < .01$ ), emotional stability ( $r = .18, p < .01$ ), 'enthusiasm and firmness' ( $r = .14, p < .01$ ), 'integrity and commitment', ( $r = .14, p < .01$ ), survival, ( $r = .17, p < .01$ ). Consistently, CE is significantly associated with future aspiration ( $r = .13, p < .01$ ). CE is significantly associated with school motivation ( $r = .36, p < .01$ ), and its dimensions such as 'commitment, interest, and enthusiasm' ( $r = .33, p < .01$ ), 'affiliation with parents and peers' ( $r = .20, p < .01$ ), and 'making excuse and blaming others' ( $r = .36, p < .01$ ). CE is significantly associated with school engagement ( $r = .33, p < .01$ ), and its dimension such as cognitive engagement ( $r = .24, p < .01$ ), behavioural engagement ( $r = .32, p < .01$ ), and emotional engagement ( $r = .30, p < .01$ ). Again, CE is significantly associated with children hopelessness ( $r = -.23, p < .01$ ), and its dimensions such as pessimistic ( $r = -.22, p < .01$ ), optimistic ( $r = -.14, p < .01$ ). Finally, CE is significantly associated with hostility ( $r = -.11, p < .01$ ).

## Discussion

The purpose of the present study was to investigate whether family atmosphere and school environment can predict adolescents' cognitive-emotional functioning. Adolescents' cognitive emotion regulation, emotional intelligence, future aspiration, school motivation, school engagement, hopelessness, and hostility were considered to reflect this functioning. Reviewing the literature, in detail, it was hypothesized that these functional aspects in adolescents can be predicted by their family atmosphere and school environment. In order to achieve this purpose 1064 adolescent students were chosen randomly from seven 'schools and colleges' under DMC. The Bangla version of the CERQ, EIS, FAS, SMI, SES, CHS, HS, FES, and CES were used as the measures of the study variables. These scales were first validated within the socio-cultural context of Bangladesh in the present study. So, the results of the present study are discussed under the two major headings: psychometric properties of the Bangla version measures and study findings.

### *6.1 Psychometric properties of the Bangla version measures*

**The CERQ:** Analysis of the data in EFA identified a four-factor model for the CERQ comprising 23 items (13 items dropped; Table 26). Factor 1 (5 items) measures 'Refocus on Positive Thought and Planning', Factor 2 (7 items) measures 'Positive Reappraisal and Putting into Perspective', Factor 3 (7 items) measures 'Rumination and Catastrophizing', and Factor 4 (4 items) measures 'Self-blame'. These factors together accounted for 49.45% of the total variance, their individual contributions ranging from 9.88% to 14.95% (Table 26). Consistent with the original scale, the factors of 'Refocus on Positive Thought and Planning' and 'Positive Reappraisal and Putting into Perspective' are grouped under the dimension of 'Adaptive Cognitive Emotion Regulation' while the factors of 'Rumination and Catastrophizing' and 'Self-blame' are grouped under the dimension of dimension 'Less



Adaptive Cognitive Emotion Regulation'. Thus unlike the original scale which comprises nine factors (Garnefski et al., 2002), we demonstrated a reduced factor model for the CERQ.

Though the original CERQ comprises nine subscales, almost all the items of the two subscales ('Acceptance' and 'Other blame') were excluded through factor analysis. Only one item, i.e., item no. 5 (I think that I have to accept that this has happened) of the 'Acceptance' subscale is retained in the present study, and is subsumed under the 'Self-blame' subscale of the adapted CERQ. However, all the items of the 'Putting into Perspective' and 'Catastrophizing' subscales, and most items of the remaining five subscales are retained in the adapted version. However, the number of subscales has now been reduced to four which, in fact, covers the items of the original seven subscales. The adapted CERQ comprises 23 items whereas the original scale comprises 36 items. Despite the fact that 13 items were excluded there is a large similarity between the two versions. This similarity indicates that the CERQ is stable across cultures. Some items were found to be invalid and therefore excluded in the present study perhaps due to cultural variation between the Netherlands and Bangladesh. Specifically, the discrepancies might be due to socio-cultural characteristics or norms, social competition and unrest, habits, individualism pattern of western countries, response style etc.

Results of the CFA demonstrated good model fit to the data [ $\chi^2(221) = 580.99$ , RMSEA = .06, RMR = .10, CFI = .90, GFI = .90], and also a factor solution which is consistent with the EFA factor solution. The factors of the Bangla version CERQ show good to high internal consistency (Cronbach's  $\alpha = .71$  to  $.83$ ; Table 65), the first factor being most reliable as indicated by its highest coefficient (Cronbach's  $\alpha = .83$ ). All the factors have significant correlation with both the ACERQ ( $r = .83$  to  $.92$ ; Table 56) and the LACERQ ( $r = .76$  to  $.90$ ; Table 57). In order to examine the convergent and discriminant validity, inter-scale correlations and factor-total correlations were calculated (Table 64). It was hypothesized that ACERQ should be positively correlated with EIS, FAS, SMI, SES, FAS, FES, and CES in

order for its convergent validity, and negatively correlated with CHS, and HS in order for its discriminant validity. On the contrary, LACERQ should be positively correlated with CHS, and HS in order for its convergent validity, and negatively correlated with EIS, and FES in order for its discriminant validity. As hypothesized, ACERQ has significantly positive correlations with EIS, FAS, SMI, SES, FAS, FES, and CES ( $r = .13$  to  $.39$ ) and significantly negative correlations with CHS and HS ( $r = .10$  to  $.24$ ), and LACERQ has significantly positive correlations with CHS and HS ( $r = .07$  to  $.09$ ) and negative correlations with EIS, and FES ( $r = -.04$  to  $-.06$ ). The factor-total correlations ( $r = .83$  to  $.92$  for ACERQ and  $r = .76$  to  $.90$  for LACERQ) were also significant. All this together indicate that both the ACERQ and LACERQ have good convergent and discriminant validity. Thus the adapted CERQ can be considered as a valid and reliable instrument for measuring cognitive-emotion regulation in Bangladeshi culture.

**The EIS:** Analysis of the data in EFA identified a seven-factor model for the EIS comprising 33 items (only 1 item dropped; Table 31). Factor 1 (4 items) measures 'Self-confidence and Analytic', Factor 2 (5 items) measures 'Self-awareness and Development', Factor 3 (4 items) measures 'Empathy', Factor 4 (6 items) measures 'Emotional Stability', Factor 5 (5 items) measures 'Enthusiasm and Firmness', Factor 6 (6 items) measures 'Integrity and Commitment', and Factor 7 (3 items) measures 'Survival'. These factors together accounted for 56.60% of the total variance, their individual contributions ranging from 5.54% to 9.78% (Table 31). Among ten components of original scale the name of four components ('Self-motivation', 'Managing Relation', 'Value Orientation', and 'Altruistic Behaviour') are removed in the adapted scale after factor analysis except their own items respectively. One component namely 'Survival' has included in the adapted scale. Now, the adapted EIS is composed of seven components with 33 items of the original scale. This massive agreement regarding EIS between Indian and Bangladeshi culture reveals that the

adapted seven-three factors emotional intelligence scale is common and stable across both the cultures. Most of the socio-cultural characteristics, cultural norms, habits, and socio-economic conditions are the same in both the countries. These factors are, probably, made similarities of EIS between the two countries. Despite the similarities item no. 28 (I am persistent in pursuing goals despite obstacles and setbacks) of 'Emotional Stability' component is removed in the adapted version. This discrepancy might be due to cultural variation between the India and Bangladesh. So, the finding is consistent with the original scale which comprises ten factors (Hyde et al., 2002). Results of the CFA demonstrated good model fit to the data [ $\chi^2(469) = 1325.99$ , RMSEA = .06, RMR = .08, CFI = .87, GFI = .86], and also a factor solution which is consistent with the EFA factor solution. The factors of the Bangla version EIS shows moderate to good internal consistency (Cronbach's  $\alpha = .58$  to .82; Table .65), the second factor being most reliable as indicated by its highest coefficient (Cronbach's  $\alpha = .82$ ). Experts (e.g., Cortina, 1930; Kline, 1999) reported that value below .70 can realistically be considered due to the diversity of the construct being measured in behavioural science. All the factors have significant correlations with the EIS ( $r = .70$  to .79; Table 58). In order to examine the convergent and discriminant validity, inter-scale correlations were calculated (Table 64). It was hypothesized that EIS should be positively correlated with ACERQ, FAS, SMI, SES, FAS, FES, and CES in order for its convergent validity, and negatively correlated with CHS and HS for its discriminant validity. As hypothesized, EIS has significantly positive correlations with ACERQ, FAS, SMI, SES, FAS, FES, and CES ( $r = .25$  to .46; Table 64) and significantly negative correlations with CHS, and HS ( $r = -.16$  to .34; Table 64). All this together indicate that the EIS has good convergent and discriminant validity. Thus the adapted EIS can be considered as a valid and reliable instrument for measuring emotional intelligence in Bangladeshi culture

**The FAS:** Analysis of the data in EFA identified a one-factor model for the FAS comprising 6 items. It measures 'Future Aspiration' of the adolescents. The finding is fully consistent with the original scale (Center for Urban Affairs and Policy Research, 1995). Results of the CFA demonstrated good model fit to the data [ $\chi^2(7) = 24.558$ , RMSEA = .07, RMR = .02; CFI = .98, GFI = .98) and also a factor solution which is consistent with the EFA factor solution. The Bangla version FAS shows good internal consistency (Cronbach's  $\alpha = .77$ ; Table 65). In order to examine the convergent and discriminant validity, inter-scale correlations were calculated. It was hypothesized that FAS should be positively correlated with FES, CES, SMI, and SES in order for its convergent validity, and negatively correlated with CHS and HS for its discriminant validity. As hypothesized, FAS has significantly positive correlations with FES, CES, SMI, and SES ( $r = .12$  to  $.29$ ) and significantly negative correlations with CHS and HS ( $r = -.19$  to  $.20$ ; Table 64). All this together indicate that the FAS has good convergent and discriminant validity. Thus the adapted FAS can be considered as a valid and reliable instrument for measuring future aspiration in Bangladeshi culture.

**The SMI:** Analysis of the data in EFA identified a three -factor model for the SMI comprising 30 items (30 items dropped; Table 37). Factor 1 (17 items) measures 'Commitment, Interest, and Enthusiasm' Factor 2 (8 items) measures 'Affiliation with Parents and Peers', and Factor 3 (5 items) measures 'Making Excuse and Balaming Others'. These factors together accounted for 42.35% of the total variance, their individual contributions ranging from 9.17% to 19.32% (Table 37). Among ten components of the original scale three components ('Affiliation with Peers', 'Interest and Enthusiasm in Activity', 'Warmth and Empathy from Parents') finally exist in the adapted scale with their partial items. The newly adapted scale has three components combining the above mentioned three components. The items of removed components exist partially under various new components in the adapted scale except 'Pressure and Excessive Demands from Adults'

components which all items were retained in the adapted scale. Finally, 30 items out of 60 items of the original scale were sustained in the adapted scale. This massive difference regarding SMI between Bangladesh and Hungaryan might be due to socio-cultural characteristics, cultural norms, socio-economic condition, social competition and unrest, individualism pattern of western countries and collectivistic pattern of Bangladesh, response style etc.

So, the finding is inconsistent with the original scale which comprises ten factors (Kozeki & Entwistle, 1984; Entwistle & Kozeki, 1985). Results of the CFA demonstrated acceptable model fit to the data [ $\chi^2(398) = 867.4$ , RMSEA = .05, RMR = .07, CFI = .90, GFI = .89] and also a factor solution which is consistent with the EFA factor solution. The factors of the Bangla version SMI shows good to high internal consistency (Cronbach's  $\alpha = .68$  to .89, Table 65), the first factor being most reliable as indicated by its highest coefficient (Cronbach's  $\alpha = .89$ ). Experts (e.g., Cortina, 1993; Kline, 1999) reported that value below .70 can realistically be considered due to the diversity of the construct being measured in behavioural science. All the factors have significant correlation with the SMI ( $r = .30$  to .64; Table 59). In order to examine the convergent and discriminant validity, inter-scale correlations were calculated (Table 64). It was hypothesized that SMI should be positively correlated with EIS, ACERQ, FAS, SES, FAS, FES, and CES in order for its convergent validity, and negatively correlated with CHS and HS for its discriminant validity. As hypothesized, SMI has significantly positive correlations with EIS, ACERQ, FAS, SES, FAS, FES, and CES ( $r = .29$  to .63; Table 64) and significantly negative correlations with CHS, and HS ( $r = -.23$  to .45; Table 64). All this together indicate that the SMI has good convergent and discriminant validity. Thus the adapted SMI can be considered as a valid and reliable instrument for measuring school motivation in Bangladeshi culture.

**The SES:** Analysis of the data in EFA identified a three-factor model for the SES comprising 16 items (3 items dropped; Table 41). Factor 1 (7 items) measures 'Cognitive Engagement', Factor 2 (3 items) measures 'Behavioural Engagement', and Factor 3 (6 items) measures 'Emotional Engagement'. These factors together accounted for 55.48% of the total variance, their individual contributions ranging from 15.73% to 23.84% (Table 41). The three components of the original scale also exist in the adapted scale with same labeling. This agreement between American and Bangladeshi culture reveals that the three factors school engagement scale is common and stable across cultures. But among 19 items, item no. 19 under 'Cognitive Engagement' (If I don't understand what I read, I go back and read it over again) was excluded by adjudicators during translation stage of TRAPD and item no. 2 (When I am in class, I just act as if I am working) and item no.5 (I get in trouble at school) under 'Behavioural Engagement' were excluded during item analysis due to negative correlation with other items. This leads us to suggest that the SES should be refined in accordance with social change in education, life style pattern, culture etc. The social and cultural change through worldwide has made significant change in peoples' thinking, their live pattern, interaction and behavior pattern, perception and importance regarding engagement with school, reason for laborious study etc. These factors may responsible for making inappropriateness of above three items in Bangladeshi culture. So, excluding the above mentioned three items, the finding is consistent with the original scale which also comprises three factors (Fredricks et al., 1983). Results of the CFA demonstrated good model fit to the data ( $\chi^2$  value is  $2.5 < 5$ , RMSEA = .05, RMR = .06, CFI = .94, GFI = .94) and also a factor solution which is consistent with the EFA factor solution. The factors of the Bangla version SES shows moderate internal consistency (Cronbach's  $\alpha = .74$  to  $.83$ ; Table 65). The first factor being most reliable as indicated by its highest coefficient (Cronbach's  $\alpha = .83$ ). In order to examine the convergent and discriminant validity, inter-scale correlations were

calculated (Table 64). It was hypothesized that SES should be positively correlated with EIS, ACERQ, FAS, SMI, FAS, FES, and CES in order for its convergent validity, and negatively correlated with CHS and HS. As hypothesized, SES has significantly positive correlations with EIS, ACERQ, FAS, SMI, FAS, FES, and CES ( $r = .26$  to  $.63$ ; Table 64) and significantly negative correlations with CHS and HS ( $r = -.23$  to  $-.36$ ; Table 64). All this together indicate that the SES has good convergent and discriminant validity. Thus the adapted SES can be considered as a valid and reliable instrument for measuring school engagement behaviour in Bangladeshi culture.

**The CHS:** Analysis of the data in EFA identified a two-factor model for the CHS comprising 8 items (9 items dropped; Table 44). Factor 1 (4 items) measures 'Pessimistic', and Factor 2 (4 items) measures 'Optimistic'. These factors together accounted for 44.95% of the total variance, their individual contributions ranging from 19.77 to 25.17% (Table 44). The finding is inconsistent with the original scale that has no sub-scale (Kazdin et al., 1983). The emergence of two subscales in the present study might be a good sign for CHS in which the items of similar meaning are grouped under a specific dimension. Results of the CFA demonstrated good model fit to the data ( $\chi^2$  value is  $1.5 < 5$ , RMSEA = .03, RMR = .01, CFI = .98, GFI = .98) and also a factor solution which is consistent with the EFA factor solution. The factors of the Bangla version CHS shows acceptable to moderate internal consistency (Cronbach's  $\alpha = .46$  to  $.63$ ; Table 65). Experts reported that the value below .70 can realistically be considered due to the diversity of the construct being measured in behavioural science (e.g., Cortina, 1993; Kline, 1999). All the factors have significant correlations with the CHS ( $r = .73$  to  $.83$ ). In order to examine the convergent and discriminant validity, inter-scale correlations were calculated (Table 64). It was hypothesized that CHS should be positively correlated with LACERQ, and HS in order for its convergent validity, and negatively correlated with ACERQ, EIS, FAS, and SES. As hypothesized, CHS has

significantly positive correlations with LACERQ and HS ( $r = .07$  to  $.09$ ) and significantly negative correlations with ACERQ, EIS, FAS, and SES ( $r = .20$  to  $.36$ ; Table 64). All this together indicate that the CHS has good convergent and discriminant validity. Thus the adapted CHS can be considered as a valid and reliable instrument for measuring children hopelessness behaviour in Bangladeshi culture. Some items were found to be invalid and therefore excluded in the present study perhaps due to cultural variation between the America and Bangladesh. Specifically, the discrepancies might be due to socio-cultural characteristics or norms, social competition and unrest, habits, individualism pattern of western countries, response style etc.

**The HS:** Analysis of the data in EFA identified a one-factor model for the HS comprising 6 items. It measures 'Hostility' of the adolescents. The finding is fully consistent with the original scale (Derogatis et al., 1976). Results of the CFA demonstrated good model fit to the data [ $\chi^2(8) = 17.38$ , RMSEA =  $.05$ , RMR =  $.03$ , CFI =  $.98$ , GFI =  $.99$ ] and also a factor solution which is consistent with the EFA factor solution. The Bangla version HS shows moderate internal consistency (Cronbach's  $\alpha = .68$ ; Table 65). In order to examine the convergent and discriminant validity, inter-scale correlations were calculated (Table 64).

It was hypothesized that HS should be positively correlated with CHS, and LACERQ in order for its convergent validity, and negatively correlated with FES, CES, SMI, and SES. As hypothesized, HS has significantly positive correlations with CHS and LACERQ ( $r = .07$  to  $.26$ ) and significantly negative correlations with FES, CES, SMI, and SES ( $r = -.17$  to  $-.23$ ; Table 64). All this together indicate that the HS has good convergent and discriminant validity. Thus the adapted HS can be considered as a valid and reliable instrument for measuring hostility in Bangladeshi culture. Experts (e.g., Cortina, 1930; Kline, 1999) reported that value below  $.70$  can realistically be considered due to the diversity of the construct being measured in behavioural science.



**The FES:** Analysis of the data in EFA identified a two-factor model for the FES which comprising 36 items (54 items dropped; Table 49). Factor 1 (27 items) measures 'Achievement-, Order-, and Culture Orientation', and Factor 2 (9 items) measures 'Emotional Atmosphere'. These factors together accounted for 35.41% of the total variance, their individual contributions ranging from 11.83% to 23.72% (Table 49). Among ten components of the original scale only two components ('Achievement Orientation' and 'Culture Orientation') finally exists in the adapted scale with their partial items. The newly adapted scale has also two components combining the above mentioned two components. The items of removed components also exist partially under various new components in the adapted scale. All items of any components of the original scale didn't exclude fully in the adapted scale. Finally, 36 items out of 90 items of the original scale were retained in the adapted scale. This massive difference regarding FES between American and Bangladeshi culture might be socio-cultural characteristics, cultural norms, socio-economic condition, social competition and unrest, individualism pattern of western countries and collectivistic pattern of Bangladesh, response style etc.

So, the finding is inconsistent with the original scale which comprises ten factors (Moos, 1974; Dasgupta & Bose, 1985). Results of the CFA demonstrated good model fit to the data [ $\chi^2(589) = 1326.3$ , RMSEA = .05, RMR = .03, CFI = .86, GFI = .87] and also a factor solution which is consistent with the EFA factor solution. The factors of the Bangla version FES shows good to high internal consistency (Cronbach's  $\alpha = .79$  to  $.92$ ; Table 65), the first factor being most reliable as indicated by its highest coefficient (Cronbach's  $\alpha = .92$ ). As shown in Table 62, all the factors had significantly good correlation ( $r = .80$  to  $.97$ ) with the whole FES. In order to examine the convergent and discriminant validity, inter-scale correlations were calculated (Table 64). It was hypothesized that FES should be positively correlated with EIS, ACERQ, FAS, SMI, SES, FAS, and CES in order for its convergent

validity, and negatively correlated with CHS and HS. As hypothesized, FES has significantly positive correlations with EIS, ACERQ, FAS, SMI, SES, FAS, and CES ( $r = .12$  to  $.49$ ; Table 64) and significantly negative correlations with CHS and HS ( $r = .19$  to  $.23$ ). All this together indicate that the FES has good convergent and discriminant validity. Thus the adapted FES can be considered as a valid and reliable instrument for measuring hostility in Bangladeshi culture.

**The CES:** Finally, analysis of the data in EFA identified a four-factor model for the CES which comprising 54 items (32 items dropped; Table 53). Factor 1 (16 items) measures 'Pupil-centered', Factor 2 (18 items) measures 'Enthusiasm, Innovation, and Competition', Factor 3 (9 items) measures 'Order and Organization', and Factor 4 (11) measures 'Authoritativeness and Indulgence'. These factors together accounted for 42.58 % of the total variance, their individual contributions ranging from 7.40% to 14.19 % (Table 53). Among nine components of the original scale three components ('Competition', 'Order and Organization', and 'Innovation') finally exists in the adapted scale with their partial items. The newly adapted scale has four components combining the above mentioned three components. The items of removed components also exist partially under various new components in the adapted scale. All items of any components of the original scale didn't exclude in the adapted scale. Finally, 54 items out of 86 items of the original scale were sustained in the adapted scale. This massive difference regarding CES between American and Bangladeshi culture might be socio-cultural characteristics, cultural norms, socio-economic condition, social competition and unrest, individualism pattern of western countries and collectivistic pattern of Bangladesh, response style etc.

So, the finding is inconsistent with the original scale which comprises nine factors (Trickett & Moos, 1973; DasGupta & Bose, 1985). Results of the CFA demonstrated acceptable model fit to the data [ $\chi^2$  (1363) = 3365.9, RMSEA = .05, RMR = .04, CFI = .80,

GFI = .79], and also a factor solution which is consistent with the EFA factor solution. The factors of the Bangla version CES shows good to high internal consistency (Cronbach's  $\alpha = .78$  to  $.90$ ), the first and second factors combinedly being most reliable as indicated by its highest coefficient (Cronbach's  $\alpha = .90$ ; Table 65). As shown in Table 63, all the factors had significantly good correlation ( $r = .72$  to  $.90$ ) with the whole CES.

In order to examine the convergent and discriminant validity, inter-scale correlations were calculated (Table 64). It was hypothesized that CES should be positively correlated with EIS, ACERQ, FAS, SMI, SES, FAS, and FES in order for its convergent validity, and negatively correlated with CHS and HS. As hypothesized, CES has significantly positive correlations with EIS, ACERQ, FAS, SMI, SES, FAS, and FES ( $r = .15$  to  $.49$ ; Table 64) and significantly negative correlations with CHS and HS ( $r = -.17$  to  $-.23$ ). All this together indicate that the CES has good convergent and discriminant validity. Thus the adapted CES can be considered as a valid and reliable instrument for measuring hostility in Bangladeshi culture.

The analysis of the psychometrics properties of the present results indicates that about 50% of the items in some scales (e.g., SMI, CHS, and FES) have been excluded through item analysis and factor analysis. A review of the the past studies indicates that this is not unusual. For example, there are some validation stadies which excluded about 50% of the items of a scale based on item analysis and factor analysis (e. g., Yoon, Lee, & Goh, 2008; Neiland & Choi, 2002; Benaim, Cailly, Perennou, & Pelissier, 2004). Moreover, it may happen especially for a big measure. Whether the retained items are representative and cover the measuring domain can be judged by the percentages of the total variance explained by the identified factors. Conventional practice as appeared in scientific papers indicates that if the factors together can explain 35% or more (e.g., Barke et al., 2012; Hair et al., 2010; Fichman, 1999; Ubbiall, Chiorri, Hampton, & donato, 2013) of the total variance then the results can be

accepted. Moreover, some experts reported that proportion of variance accounted for keeps a factor if it accounts for a predetermined amount of the variance e. g., 5%, 10% (Suhr & Shay, 2009; Abelson, 1985). So, all the evidences support the item exclusion and total variance explanation of SMI, CHS, and FES). Therefore, with the exclusion of 50% items the SMI, CHS, and FES can be considered as a valid and reliable instrument for measuring children hopelessness in Bangladeshi culture.

## **6.2 Study findings**

### **6.2.1 Preliminary findings**

The preliminary analysis of the data in MANOVA demonstrated gender differences in adaptive cognitive emotion regulation and school motivation but not in other variables of the study. These findings are discussed below.

**6.2.1.1 Gender difference in adaptive cognitive emotion regulation:** The preliminary analysis showed that male adolescents have significantly stronger adaptive cognitive emotion regulation, ACER ( $M = 51.576$ ,  $SE = .862$ ) than female adolescents ( $M = 47.100$ ,  $SE = .662$ ). The past studies have demonstrated mixed findings, some being consistent and others being inconsistent with the present findings. For example, in support of the present finding, Garnefski et al., (2001) demonstrated that male adolescents have higher level of adaptive cognitive emotion regulation and fewer depression and anxiety than female adolescents in Dutch culture. On the contrary, in American culture women reported utilizing putting into perspective in stressful situation more than men whereas men reported blaming others more than women (Zlomke & Hahn, 2010). In another study, American women scored higher on positive refocusing, refocusing on planning, and positive reappraisal whereas American men scored higher on blaming others (Martin & Dahlen, 2005). Likewise, Dutch women reported to use positive refocusing more often than Dutch men (Garnefski et al., 2004).

Now why is the gender difference in adaptive cognitive emotion regulation? The past studies further suggest that parents preferentially reinforce the display of sadness in girls and anger in boys (Block, 1983; Eisenberg, Cumberland, & Spinrad, 1998; Fuchs & Thelen, 1988), and also encourage distraction and problem-solving strategies more for boys than for girls (Eisenberg et al., 1998). Observations from daily life indicate that this is probably true also in Bangladeshi culture which might cause high adaptive cognitive emotion regulation in males than girls. In Bangladeshi culture, traditionally male children have been favored because daughters will be married and leave the home, while sons will bring benefits to the family. Girls have less freedom than boys and are more controlled by their families almost in all societies. They have to be more responsible and are permitted less fun. We assume that these gender discriminations might contribute to the lower level of adaptive cognitive emotion in girls than boys. Thus the present findings suggest that gender is an important determinant of cognitive emotion regulation in Bangladesh. However, unlike the present findings, Karim, Sharafat, and Mahmud (2013) and Ansary and Karim, (2011) demonstrated no gender differences in cognitive emotion regulation in Bangladesh, and they interpreted that the crucial factor to determine cognitive emotion regulation is the experience children receive in their family, i.e., how they are reared up by their parents and other family members. It is still unclear why is this discrepancy between the findings of different studies in the same culture. It needs further investigation to clarify the fact.

**6.2.1.2 Gender difference in school motivation:** The results of preliminary analysis further revealed that the male adolescents have significantly stronger school motivation SM ( $M = 119.801$ ,  $SE = 1.967$ ) than female adolescents ( $M = 110.446$ ,  $SE = 1.511$ ). The finding is consistent with the finding of Bugler, McGeown, and Clair-Thompson (2015), where they reported that adolescent boys' academic motivation was significantly more closely associated with reports of student classroom behaviour completed by teachers than girls.

The finding has also its theoretical support with achievement motivation theory formulated by different experts (e.g., Atkinson, 1974; Horner, 1974) which holds the view that males have a higher motive to succeed, long term goal and life span, and success tendency than females. However, the gender difference in school motivation in the present study can be interpreted in terms of the socio-cultural influences in Bangladesh. For example, family members, especially parents always dream about the future of their sons rather than girls. Parents think that sons would do job, would bring social dignity and solvency for their family, would support them in older age whereas girls would go to their husband's house after marriage. This discriminating attitude leads them to invest huge amount of money behind their son's education rather than girls. Begum, Grossman, and Islam (2014) found in their study that boy-biased parents in Bangladesh are more likely to have their boys enrolled in school and to spend more on their boys' education, nutrition, and formal treatment than their girls.

This kind of differential treatments, social, and peer pressure are prevalent in almost all families in Bangladesh which help develop different patterns of personality and/or attitudinal characteristic in boys and girls. For example, boys tend to be determined to take family responsibility and other social duties. Because of such parental and social influences boys have higher motivational self-concept than girls (Hilky & Conway, 1994). Furthermore, boys usually become more concerned than girls with having a positive image of themselves in class, on which account they tend to seek positive competency judgements (Ryan, Hicks, & Midgley, 1997), and regardless of parental occupation and residence adolescents boys evaluate their own group significantly more positive than do the adolescents' girls (Biva, 2013). Perhaps this is the primary reason for gender differences in school motivation. Secondly, early physical change due to secondary sex characteristics in girls creates a line of difference in the social behavior between boys and girls. As a result, a variety of social

restriction is imposed by society on girls. For example, girls may not go to institution regularly for unavoidable circumstances, such as fear of sex-abuse, acid throwing, video panic etc. But boys merely face these kinds of problems in Bangladesh. A third but related reason might be that adolescent boys have stronger and more organized group cohesiveness than adolescent girls due to political, social or family impact. After entering school they form study group more quickly which helps them make quicker adjustment in their school environment than do girls. This might cause gender difference in school motivation either directly or indirectly.

The above discussion suggests that as compared to girls boys are more inclined to extrinsic than intrinsic factors for the development of school motivation. In support of this past studies tried to examine gender differences in reading motivation and reading achievement. Researchers demonstrated that females are more intrinsically motivated to read through aesthetics, challenge, and efficacy which resulted in high reading achievement (e. g., Kelly & Decker, 2009; LaRocque, 2008; McGeown, Goodwin, Henderson, & Wright, 2012; Mucherah & Herendeen, 2013). Consistently other studies have shown that male adolescents have greater degree of extrinsic motivational orientation regarding study than female adolescents (e.g., Anderman & Anderman, 1999; Midgley & Urdan, 1995). In contrast to this, however, there is also evidence that females are significantly more extrinsically motivated than males (Boggiano et al., 1991) and female students' academic performance is less associated with their interests than male students' academic performance (Schiefele et al., 1992). Some studies found that female students exhibit more solution-based behavior than male students (Wise & Cotton, 2009; Wise & DeMars, 2010).

### ***6.2.2 The main findings***

As stated above, there was a significant effect of gender on adaptive cognitive emotion regulation and school motivation. So, in order to see the effects of family atmosphere and school environment on these two variables data for the male and female participants were separately analysed using multivariate multiple regression analysis (Data were collapsed across the levels of socioeconomic status and family type as they did not have any significant effects). However, data for the remaining six variables, such as less adaptive cognitive emotion regulation, emotional intelligence, future aspiration, school engagement, hopelessness, and hostility, were collapsed across the levels of gender, socio-economic status, and family type, and analyzed in MANOVA using family atmosphere and school environment as the predictors.

#### **6.2.2.1 The impacts of family atmosphere and school environment on adaptive cognitive emotion-regulation and school motivation**

**The impacts on girls:** Analysis of the multivariate and univariate test results revealed that the overall model was significant for both adaptive cognitive emotion regulation and school motivation (Table 69). Results further demonstrated that family atmosphere and classroom/school environment together contributed 3.20 % of the variance in adaptive cognitive emotion regulation and 16.6% of the variance in school motivation, and that both these contributions were significant (Table 70). Results of parameter estimates indicated that classroom/school environment has significant effect on both adaptive cognitive emotion regulation and school motivation of the female adolescents whereas family atmosphere has significant effect on their school motivation only (Table 70). The unstandardized regression coefficients (SPSS does not show standardized regression coefficients in multivariate multiple regression analysis; however, unstandardized regression coefficients are more straightforward to understand (Reifman, 2007) indicated that for 1 raw unit increment of



family atmosphere, school motivation increased by .313 raw units, and for 1 raw unit increment of school/classroom environment, adaptive cognitive emotion regulation and school motivation increased by .052 and .205 raw units respectively. The significant impacts of both family atmosphere and school/classroom environment on school motivation in female adolescents support Hypothesis 5, and the significant impact of school/classroom environment (But not family atmosphere) on adaptive cognitive emotion regulation partially supports Hypothesis 1 (See introduction). Though family atmosphere did not show any significant impact on adaptive cognitive emotion regulation, the results of correlational analysis indicated that overall adaptive cognitive emotion regulation and its strategies, such as 'refocus on positive thoughts and planning', 'positive reappraisal and putting into perspective' were significantly and positively correlated with family atmosphere and its dimension such as 'achievement-,order- and culture- orientation' and emotional atmosphere except correlation between 'positive reappraisal and putting into perspective' and emotional atmosphere. Again, correlational analysis indicated that overall adaptive cognitive emotion regulation and its strategies were significantly and positively correlated with school environment and its dimensions, such as pupil-centered, 'enthusiasm, innovation, and competition', 'authoritativeness and indulgence', and 'order and organization' except correlation between 'refocus on positive thoughts and planning' with 'enthusiasm, innovation, and competition', and 'authoritativeness and indulgence' (Table 77). Thus, we cannot rule out the impact of family atmosphere on adaptive cognitive emotion regulation because family is the first and foremost important psycho-social setting for every child.

**The impacts on boys:** Analysis of the multivariate and univariate test results revealed that the overall model was significant for both adaptive cognitive emotion regulation and school motivation (Table 71). Results further demonstrated that family atmosphere and school/classroom environment together contributed 1.1 % of the variance in adaptive

cognitive emotion regulation and 20 % of the variance in school motivation, and that both these contributions were significant (Table 72). Results of parameter estimates indicated that family environment has significant effect on both adaptive cognitive emotion regulation and school motivation of the male adolescents whereas classroom environment has significant effect on their school motivation only (Table 72). The unstandardized regression coefficients (SPSS does not show standardized regression coefficients in multivariate multiple regression analysis; however, unstandardized regression coefficients are more straightforward to understand (Reifman, 2007) indicated that for 1 raw unit increment of classroom environment, school motivation increased by .296 raw units, and for 1 raw unit increment of family environment, adaptive cognitive emotion regulation and school motivation increased by .063 and .317 raw units respectively. The significant impacts of both family atmosphere and school environment on school motivation in male adolescents support Hypothesis 5, and the significant impact of family environment (But not classroom environment) on adaptive cognitive emotion regulation partially supports Hypothesis 1 (See introduction).

Though school/classroom environment did not show any significant impact on adaptive cognitive emotion regulation, the results of correlational analysis indicated that overall adaptive cognitive emotion regulation and its strategies, such as 'positive reappraisal and putting into perspective' were significantly and positively correlated with school environment and its dimensions, such as pupil-centered, 'enthusiasm, innovation, and competition', and 'order and organization'. Again, correlational analysis indicated that overall adaptive cognitive emotion regulation and its strategies, such as 'positive reappraisal and putting into perspective' were significantly and positively correlated with family environment and its dimensions such as 'achievement-, order- and culture-orientation' and emotional atmosphere (Table 78). Thus, we cannot rule out the impact of

school environment on adaptive cognitive emotion regulation because school is the second and important psycho-social setting for every child.

The findings for male and female participants indicate that both family atmosphere and school environment play an important role in the development of adaptive cognitive emotion regulation and school motivation in children. The results about the impacts of family atmosphere and school environment on cognitive emotion regulation are consistent with the findings of past studies. For example, research has shown that family environment (Especially permissive and authoritarian parenting style; e.g., Baumrind, 1967; Hart et al., 1998), expressive environments (Eisenberg et al., 1998), parents' marital adjustment and affective states (Ansary & Karim, 2011), interpersonal relationships among the family members (Sinha & Mukerjee, 1990) are strong predictors of children's emotion regulation. Other research has shown that family type can facilitate or limit cognitive emotion regulation of adolescents the ways in which parents are able to positively influence the outcomes of their children (Amato, 2001; Sigle-Rushton & McLanahan, 2002). Feelings of belonging or affiliation created through the family or school environment (Baumeister et al., 2005), teacher support (Ryan & Patrick, 2003), mindfulness classroom environment (Langer, 2000), and autonomous school environment (Fried, 2010), favourable education outcomes (e.g., Boekaerts, 2002) have significantly positive association with students' adaptive cognitive emotion.

Childrens and adolescents learn about emotions and emotion regulation by observing how parents' and teachers' manage interpersonal conflicts, regulate emotions, emotional displays, and cope with stresses in family environment and school setting (Parke, 1994). Parents' harmonious relationship, sound emotional atmosphere of the family, cultural and achievement oriented family helps children develop thoughts of what to do and how to handle the negative experience. For example, children learn that certain situations

provoke emotions, and they observe the reactions of others in order to know how they should react in similar situations. If parents display a wide range of emotions freely, children learn about the appropriateness of different emotions across different situations as well as about a variety of emotional responses. This learning through modeling (Parke, 1994; Bandura, 1977; Denham, Mitchell-Copeland, Strandberg, Auerbach & Blair, 1997) promotes and adjusts adolescents' adaptive emotion regulation. Besides this, well functioning parental marriage and parental adjustment, involved and caring fathers (Cummings & Davies, 1994; Volling, McElwain, & Miller, 2002) help children develop positive, happy, and pleasant thoughts instead of thinking about threatening and stressful events (Positive refocuse). Healthy and congenial school environment, supportive teacher-student relationship, transperance and well disciplined rules and regulations promote adaptive cognitive emotion regulation. For example, Prizmic (2000) found that cognitive reappraisal strategies, such as student re-evaluating the meaning of a task, have been correlated with more positive emotions. Nowadays, teachers, staffs are well trained and aware regarding how to regulate, manage, and understand students' emotion. Similarly, supportive, pupil-centered, enthusiasim, competitive, collaborative, and expressive classroom environments are also enhance students' emotion regulation.

The results about the impacts of family atmosphere and school enviroenment on school motivation are also consistent with the findings of past studies. For example, it has been shown that adolescents' supportive relationships with parents, teachers, and peers are a good predictor of multiple aspects of school motivation (Wentzel, 1998). Experts demonstrated that adolescents' reading motivation increases with classroom climate and gender plays a moderated role between motivation and classroom climate (Boggiano et al., 1991; Mucherah et al., 2014; Schiefele et al., 1992).

One explanation of the present findings might be that students' interest in school activities is driven by teachers, peers, and other family members. Opportunity of sharing knowledge, ideas, and attitudes through open interaction with these social agents provide social as well as curricular and instructional approaches to learning which affirms the motivational significance of parent-child, teacher-student, and other sort of relationships in the lives of young adolescents.

Another explanation might be that adolescents' perceptions of the nature of their relationships with family, and school, and reward or punishment they receive from other models play a fairly unique role in motivating/demotivating them to engage in academic activities. Each student has personal goals, family and school expectation, interests, and future aspiration. When students experience school and family as opportunities to fulfill these desires, experience what they learn as having personal relevance, feel emotionally supported in learning by both their teachers and parents, have opportunities to make choices, then, their intimacy and affiliation with school motivation increased. Research (e.g., [Wentzel, 1998](#)) has shown that students' school motivation increases when they see family and school provides clarity of expectation, consistency and predictability of response, emotional support, opportunity to learn and master meaningful material, and sufficient or appropriate support of students' personal goals, interests, and emotion.

Motivational theorists ([Connell & Wellborn, 1991](#); [Ford, 1992](#)) suggest that a sense of social support as well as family support, fulfillment of basic psychological needs in the family and classroom, and belongingness facilitates students' self-regulation for learning, academic performance, well being which directly support the adoption of socially valued goals and objectives. Finally, our study extends the past research on the application and integration of self-determination theory, stage-environment fit theory, and expectancy/value theory to illustrate the processes by which family and school

environment influence adolescents' school motivation. The direct links found in this study between family atmosphere and school motivation, and between school environment and school motivation are consistent with this proposition.

**6.2.2.2 The impacts of family atmosphere and school environment on less adaptive cognitive emotion regulation, emotional intelligence, future aspiration, school engagement, children hopelessness, and hostility**

Analysis of the multivariate and univariate test results revealed that the overall model was significant for all the six variables: less adaptive cognitive emotion regulation, emotional intelligence, future aspiration, school engagement, children hopelessness, and hostility (Table 73). Results further demonstrated that family atmosphere and school environment together contributed 4.0% of the variance in less adaptive cognitive emotion regulation, 8.6% of the variance in emotional intelligence, 2.2% of the variance in future aspiration, 24.7% of the variance in school engagement, 6.5% of the variance in children hopelessness, and 4.0% of the variance in hostility, and that all these contributions were significant (Table 74). Results of parameter estimates indicated that family atmosphere has significantly positive effect on emotional intelligence and school engagement, and significantly negative effect on less adaptive cognitive emotion regulation, hopelessness and hostility; however, its effect on future aspiration was not significant (Table 74). On the other hand, school environment has significantly positive effect on less adaptive cognitive emotion regulation, emotional intelligence, future aspiration and school engagement, and significantly negative effect on hopelessness and hostility (Table 74). The unstandardized regression coefficients indicated that for 1 raw unit increment of family atmosphere, emotional intelligence and school engagement increased by .251 and .150 raw units respectively, and less adaptive cognitive emotion regulation, hopelessness and hostility decreased by .051, .017 and .031 raw units respectively, and for 1 raw unit

increment of school environment, less adaptive cognitive emotion regulation, emotional intelligence, future aspiration and school engagement increased by .034, .122, .015, and .179 raw units respectively, and hopelessness and hostility decreased by .012 and .014 raw units respectively. These results fully support Hypothesis 3, and Hypotheses 6-8, and partially support Hypotheses 2 and 4. That is, Hypothesis 2 is supported by the demonstrated negative effect of family environment, but not by the effect of school environment which is positive unexpectedly, and Hypothesis 4 is supported by the demonstrated positive effect of school environment, but not by the effect of family atmosphere which is non-significant (Table 74). Though family atmosphere did not show any significant impact on future aspiration in the present study we cannot preclude the impact of family atmosphere on it because family is the first and foremost important psycho-social setting for every child. However, the above findings are discussed below in the light of the existing relevant literature.

The demonstration of the negative impact of family atmosphere on less adaptive cognitive emotion regulation is consistent with the findings of past studies that negative family environment increase less adaptive emotion regulation (e.g., Baumrind, 1967; Hart et al., 1998). Moreover, family environment and its dimensions (such as 'achievement-, order- & culture-orientation' and emotional atmosphere) have negative and significant correlation with less adaptive cognitive emotion and its dimension such as 'rumination and catastrophizing' (Table 75). Studies demonstrating that family type (Divorced or single mother family) can facilitate or limit cognitive emotion regulation of adolescents the ways in which parents are able to positively influence the outcomes of their children (Amato, 2001; Sigle-Rushton & McLanahan, 2004). Students with strong feelings of family cohesion, which can enhance a sense of belonging, were more likely to use adaptive emotion regulation strategies than less adaptive (Fried, 2010). In another study,

[Ansary and Karim \(2011\)](#) showed that parents' marital adjustment and father's positive affect was strongly and positively associated with the children's adaptive emotion regulation, and negatively with their less adaptive emotion regulation while mothers' positive affect was strongly and negatively associated, and negative affect was positively associated with the children's less adaptive emotion regulation.

The relationships between family environment and less adaptive emotion regulation as demonstrated in the present study can be well explained in the context of Bangladeshi culture. Here, children of all ages are vulnerable to the effects of family environment, such as interparental conflict or, marital dysfunction of parents, mistrust among family members, economic insecurity in the family, abuse by inhouse members, domestic violence, and apathy to children etc. ([Davies & Cumming, 2002](#)). For example, distressed marital relationships may be related to children's psychological adjustment because of parents' compromised ability to meet the emotional needs of their children ([Davies & Cummings, 1994, 1998](#); [Lemerise & Dodge, 1993](#)). If the parents' marriage does not function well the child will not get qualitative support from them. As a result, children may not be able to manage the situation of a threatening event. So, they cannot remove the past negative events from their mind and will therefore engage most of their times in ruminating those negative thoughts (rumination). When parents are not satisfied with their marriage it also affects the parent-child relationship and children impose thoughts of their experience on others (Blaming others) ([Katz & Gottman, 1995](#); [Darling & Steinberg, 1993](#)). Thus, children transfer some of the negative affects and poor regulation strategies that they learn from parent-child interactions to their interactions with peers, resulting in incompetent peer relations ([Parke, Cassidy, Burks, Carson, & Boyum, 1992](#)). These things may be lead to high less adaptive emotion regulation in adolescents.



However, the positive impact of school environment on less adaptive cognitive emotion regulation was unexpected and is inconsistent with the past findings. For example, research has shown that emotion and emotion regulation of students are influenced by the emotional climate of the school (Hargreaves, 2000; Ryan & Patrick, 2003), suggesting that good school climate will promote the use of adaptive emotion regulation but not the less adaptive emotion regulation among the school students. Some studies reported that school affiliation does not have significant correlation with student emotion regulation strategy use (e.g., Fried, 2010). Though one aspect (authoritativeness and indulgence) of school environment has negative and significant relation with less adaptive cognitive emotion regulation. However, it is not clear why school environment was found to positively influence on less adaptive cognitive emotion regulation in the present study. It needs further investigation to advance understanding of the phenomenon.

The positive impacts of family atmosphere and school environment on emotional intelligence are consistent with the findings of past studies. Moreover, family environment and its different aspects (such as 'achievement-, order- & culture-orientation' and 'emotional atmosphere') and school environment and its different aspects (such as 'pupil-centered', 'enthusiasm, innovation, & competition', 'authoritativeness & indulgence', 'order & organization') have positive and significant correlation with emotional intelligence and its dimensions, such as 'self-confidence and analytic', 'self-awareness and development', empathy, 'emotional stability', 'enthusiasm and firmness', 'integrity and commitment', and survival. For example, Manuel (2002) has demonstrated that parental support such as encouraging, giving rewards and guiding have crucial effects on matters of emotional intelligence and social activities. Parental responsiveness, parental emotion-related coaching, and parental positive demandingness and relation are related to children's higher emotional intelligence (Thompson, 1998), and parental

negative demandingness is negatively related to children's emotional intelligence (Alegre, 2011). Moderate parents appreciate emotions of children and try to understand them through empathy. Adolescents of these parents have high emotional intelligence (Alegre, 2011). Parent's internal control, warm, and positive family atmosphere also affect children's emotion positively. Parents which are qualified emotionally seem to place emphasis on emotions within the family, develop empathy, display consistent attitudes, and try to solve children's negative behaviours through empathy. Ozabaci (2006) reported that as mother's emotional intelligence increases, children's emotional intelligence also increases. Similarly, Hughes, Dunn, and White, (1998) suggest that students who are better adjusted to family and school environment have better emotional intelligence and understand emotions correctly avoid aggressive behaviours, establish more positive relations with other persons around them and they are accordant in their school and social life. In a racial study Rice et al. (1997), found that relational variables were expected to be more important in the development of social competence and emotional adjustment for Black students than for White students. Childrens' emotional intelligence is not only influenced by family atmosphere but also by a number of other related factors, such as family size, family hardiness etc. (Morand, 1999). Chan (2005) reported that fathers with high education and high family system maintenance, high responsibility in organizing relations tended to foster more emotional intelligence in their early adolescents.

However, it seems that not only family but also school provides congenial atmosphere to children in whom they can feel independent, valued and secure. Nowadays, teachers' are cooperative in nature, provide emotional support to their students, sharing responsibility, and also make correct evaluation regarding their students except some exceptionality. As a result, student feels as they are living at their home and with their parents. Principle conducts frequent meetings with the parents which make both the

parents and teachers sharing information, mutual understanding, and to know about the emotional problem of their children. So, these things ultimately help adolescents to improve their emotional intelligence and maturity. Consistent with the present findings past studies have shown that school (Hughes et al., 1998), and academic achievement in school (Low & Nelson, 2004; Cotton & Wiklund, 2005) have significantly positive impact on emotional intelligence.

Finally, spiritual environment in the family and school, psychological training in school may enhance emotional intelligence of adolescents. Many schools and colleges are arranged different types of training program such as mental health program, morality building, quantum foundation training etc. Both psychology and spiritual training make sound thinking, deep knowledge inside the adolescents may lead to positive change in emotional intelligence of adolescents.

The present study thus supports the notion of the ability model that adolescents' get ability from family and school environment and each ability influences how they utilize emotions to facilitate thinking or regulate emotions to focus on important information which in turn promotes their emotional intelligence (Mayers & Salovey, 1997; Salovey, Mayer & Caruso, 2004).

It is well documented in earlier research that family atmosphere is a significant predictor of the future aspiration in adolescents (Heins et al., 1982; Garg et al., 2002; Khallad, 2000). But, the present study demonstrated that family atmosphere has no significant effect on future aspiration of adolescents. This result is unexpected; however, future aspiration has been found to have positive and significant correlations with family atmosphere and its dimensions such as 'achievement-, order- and culture- orientation' (Table 75); however, it does not exclude the necessity of family environment in adolescents' career and other forms of development. However, contrary to the effect of

family atmosphere, the present study demonstrated that school environment has a significant effect on future aspiration in adolescents. Besides, future aspiration has positive and significant correlation with school environment and its different aspects such as 'pupil-centered', 'enthusiasm, innovation, & competition', 'authoritativeness & indulgence', 'order & organization'. In line with this past studies have shown that a sense of coherence towards school atmosphere, and attitude towards school contribute to the reporting of educational aspiration by students on different educational tracks (Geckova et al., 2010). Results of many other studies showed that family and school environment (Christenson et al., 1992; Trusty, 1998; Kisilu et al., 2012), school attitude and school program such as academic track (Mau & Bikos, 2000), attention receive from the teachers (Wall et al., 1999), students' engagement in school (Sewell, Haller & Portes, 1969), academic achievement (Rothon, 2011; Singh, 2011) contribute to the development of educational aspirations of adolescents.

The demonstration that both family atmosphere and school environment have significant impacts on students' school engagement is supported by the findings of past studies. Moreover, family environment and its different aspects (such as 'achievement-, order- & culture-orientation' and 'emotional atmosphere') and school environment and its different aspects (such as 'pupil-centered', 'enthusiasm, innovation, & competition', 'authoritativeness & indulgence', 'order & organization') have positive and significant correlation with school engagement and its different dimensions such as cognitive, behavioural, and emotional. A number of previous studies have shown that adolescents' school engagement is facilitated by the family, peer, school, and community (Appleton et al., 2008). Family recognizes the importance of school for children's educational attainment and ensures their high levels of school engagement (Furlong et al., 2003). Research has shown that parental involvement (Crozier, 1993), parental school

involvement (Booker, 2006; Fan, 2001; Finn, 1993), authoritative parenting practices (Steinberg et al., 1994) have significant association with school engagement and good grade in school. Children whose families are actively involved in their learning have more positive attitudes towards school which turns into high school engagement. Experts reported that a congenial home learning environment (Snow & Bruce, 2003; Eccles & Harold, 1996), and democratic school climate (Lenzi et al., 2012) help children engage and succeed in school.

The positive impact of school environment on school engagement can be explained in terms of how students perceive the school climate. Students' perceptions of the school environment can change the level of their school engagement. When students experience that they have opportunities to make choices in school, what they learn in school have personal relevance, and when they feel emotionally supported by both their teachers and peers, they are more likely to feel interested and value learning activities in school. When students see that teachers provide clear expectations with clear instructions, and consistent and contingent responses they are more likely to identify themselves in a positive way and participate in school tasks. In support of this explanation past studies have suggested that students' perceptions of school characteristics (Wang & Holcombe, 2010), teachers' emotional support (Skinner & Belmont, 1993; Ryan & Patrick, 2001), emotionally supportive and caring school environment (Shim et al., 2013), peer groups (Berndt, 1999; Ryan, 2001) contributed adolescents' school engagement. Consistently other studies reported that the benefits of choice-provision (Assor et al., 2002), opportunities for decision making or freedom of action (Deci & Ryan, 2000), options to engage in schoolwork that are relevant to personal goals and interests increase school attachment of adolescents (Flowerday & Schraw, 2003; Katz & Assor, 2006).

Taken together the above explanations for the impacts of family atmosphere and school environment we can conclude that students are more likely to engage in school or may have positive feelings of belonging to school when parents, teachers, social dimensions of class, and peers create a caring and socially supportive environment (Battistich et al., 1997; Wentzel, 2003). If adolescents see that school has any purpose or meaning for them or their opinion is valued or they feel free to express their point of view and participate in organizing school events tend to be more involved in school activities may motivate them to study hard and enhance their academic performance. It makes sense that having good friendship with parents, siblings, and teachers who have positive attitudes towards study or provide academic support would encourage school engagement. Economic security from family might affluence in school engagement of adolescents because families with more economic resources can afford the unexpected costs of study. Moreover, family affluence is usually related to social and educational status.

The study supports the past research on the application and integration of self-determination theory, stage environment fit theory, and expectancy-value theory to illustrate the processes by which different features of the school and family environment influence students' behavioral, emotional, and cognitive engagement in school.

Finally, we demonstrated that both family atmosphere and school environment have significantly negative impacts on hopelessness and hostility in children. Besides, children hopelessness and its different aspects (Pessimistic and optimistic) and hostility have negative and significant correlation with family environment and its different aspects (such as 'achievement-, order- & culture-orientation' and 'emotional atmosphere') and school environment and its different aspects (such as 'pupil-centered', 'enthusiasm, innovation, & competition', 'authoritativeness & indulgence', 'order & organization')

have positive and significant correlation with school engagement and its different dimensions, such as cognitive, behavioural, and emotional. We argue that children who get supportive family atmosphere and school environment, get love, care, and affection and inspiration from parents, teachers, classmates/peers, and seniors, develop high self-confidence and reduced hopelessness as they serve as a buffer against hopelessness. Very recently many schools and colleges in Bangladesh have psycho-educational programmes, counseling service (e.g., Dhaka Cantonment Girls' Public School & College) for adolescents which might help them reduce future-oriented anxiety and hopelessness or frustration which in turn leads to reduced aggression or hostile attitudes in adolescents. Theoretical support for this notion comes from the frustration-aggression hypothesis (Berkowitz, 1989), which proposes that negative emotions but not positive emotions can lead to anger, hostile, and aggression. In support of this research has shown that family support, family functioning, perceived social supports (Cakar & Karatas, 2012), adolescents' perception of parenting styles (Dyck, 1991; Velting, 1999; Michalik-Bonner, 1990), parent-adolescent conflict (Shek, 1999), and perceived family cohesion (Akbag & Goktan, 2010), adolescent who stay in orphanage (Palmer & Connelly, 2005) are the important predictors of hopelessness. Stable and supportive family environments provide children with the emotional security to develop healthy relationships with others and can play an important protective role (Jencks & Mayer, 1990; Hanson et al., 1997).

Furthermore, both family and school environment has an enormous impact on the outcome of children's hostile and aggressive behavior (e.g., Garrison, 1987; Gross & Keller, 1992). Rohner & Rohner (1980) found that a rejected on emotionally abused child tends to be more hostile and aggressive than an accepted child. Other studies reported that family cooperation and mutual understanding reduce hostile behavior where as pressure and conflicts from family, school, and peers increase hostility among the adolescents

(Felsten, 1996; Hughes, 1986; Kendler et al., 1993; Musitu & Garcia, 2004). High family education (Schieman, 2003), reinforce from parents and schools (Sears et al., 1957) also reduce hostile and aggressive behavior. Family displacement due to religious, ethnic, and political crisis and also death of family member specially parents, born to poverty, neglect, drug exposure or have restricted experience leads to adolescent's aggressive behavior which turns into hostile behavior (Ogwo, 2013).

The results may be explained as good learning environment, freedom of emotion expression, availability to learn moral values, reasonable restriction, planned goal, healthy parenting, and happy feelings with family and school environment might have contributed in expression moderately low level of hostility, that is, good family and school environment decrease adolescents' hostility behavior and negative environment increase vice versa. Moreover, student's perception of quality regarding, the teaching process and social interactions with classmates and teachers seemed to have a greater direct impact on reducing the hostility behavior as a social relational space in which students and teachers respect and support one another. In line with this, absence of these criteria may increase high level hostile behavior which is harmful for children as well as school environment and family.

Another reason may be children get consistence love, cooperation, encouragement and attention from parents and teachers, sharing feelings with parent, teachers and peers groups, opportunity to read books on anger and how to handle it, reasonable explanation of anger and hostile behavior, recognize the problem by parents and school authority might be play role to reduce hostile behavior. Without it, a positive and good interpersonal relationships between parents and children, between school teachers, friends and children based on affective and empathetic cohesion and expressiveness of feelings



and opinions sharing an open communication style seems to be a relevant protective factor for reducing antisocial behavior such as hostility and aggressive behavior.

Nowadays, very few adolescents experience domestic and school violence, rather they are properly supervised and monitored by family members and school authority. In recent days, “affection and love, not punishment”, has become a popular slogan for classroom teaching. For sound mental and emotional development adolescents are exposed to television, movies, and video games less than ever before. Moreover, a series of training programs, such as anger management, social skills training, and assertiveness training are arranged for students at different educational institutions all over the country. These endeavours taken by families, schools, and Government might positively affect adolescents' emotional intelligence, future aspiration, adaptive cognitive emotion, school engagement and negatively affect less adaptive cognitive emotion, hostility, and hopelessness in the present study.

### ***6.3 Limitations and suggestions***

As with many other studies this study has some limitations. First, it was conducted on a small number of participants ( $n = 1000$ ) compared to the total population ( $N = 52,000$ ), and the sample was selected only from seven ‘schools and colleges’ as representative of one hundred and ninety eight educational institutions in DMC, but not covering the whole country. This makes it difficult to assure how much the present findings can be generalized to the whole adolescent population of the country. Further, research on a large scale sample from different parts of Bangladesh will possibly exclude the limitation, and increase reliability and validity of the measures and the significance level of the impacts of family atmosphere and school environment on the study variables. Second, the rating scales used in this study were self-reported. It was therefore possible that some adolescents might not give or disclose accurate information about their abusive and

unexpected experiences in the family and school due to restricted social (e.g., shyness), familial (e.g., afraid of parental punishment) and/or school norms (e.g., afraid of school authority) though this study was completely anonymous. We also assume that due to the prevalence of gender discrimination in the family, school and community the said social restrictions might have worked differently on boy and girl participants. This might have led to the appearance of some inconsistent/unexpected results in this study, such as nonsignificant impact of family atmosphere on adaptive cognitive emotion regulation in girls, nonsignificant impact of school environment on adaptive cognitive emotion regulation in boys, significantly positive impact of school environment on less adaptive cognitive emotion regulation in all participants, and nonsignificant impact of family atmosphere on future aspiration in all participants. Again, future research on a large number of participants from different representative schools and colleges located in different parts of Bangladesh can possibly exclude these inconsistencies. Third, the predictors identified in the present study explained a significant portion but not the whole of the total variance in each of the study variables. So, future research can be designed to identify more potential variables, such as mental health, peer relationship, sibling relationship, working parents, step families, social class, poverty, religion, ethnicity or race etc. to maximize the explained portion of the total variance in each of the study variables. A fourth weakness of this study is that by the concept of cognitive-emotional functioning it covers a limited number of cognitive and emotional aspects of behavior, such as cognitive emotion regulation, emotional intelligence, future aspiration, school motivation, school engagement, hopelessness, and hostility. So, future research should address other areas of cognitive-emotional functioning in order to advance our further understanding of the phenomena. Finally, this study was confined only to the eleventh grade students studying in DMC only. So, in order to confirm the present findings further

research should be carried out on participants covering a wide range of age groups taken from other representative parts of the country.

#### ***6.4 Implications***

Despite the above limitations, the present findings will have implications for theory, research, and practice. The present research was the first to investigate the impact of family atmosphere and school environment on adolescents' cognitive-emotional functioning in which multiple variables were jointly analyzed. It makes some important contributions in different areas of science. For example, in the empirical vein, it adds new knowledge to the literature in behavioral sciences, such as psychology, sociology, and child development, by finding relationships of family atmosphere and school environment with cognitive emotion regulation, emotional intelligence, future aspiration, school motivation, school engagement, hopelessness, and hostility. The theoretical framework is simple and straightforward derived from a reduction of the familial and school factors through factor analysis that contribute to a better understanding of their relationships with different dimensions of cognitive-emotional functioning in adolescents. The knowledge gained in this study can be used to better understanding the existing models and theories of adolescent development, such as cognitive (Piaget, 1970) theory, Gross (1998a, 1998b) process model of cognitive-emotion theory etc. In addition to this theoretical importance, the present findings, especially the inconsistent aspects of the findings, raise some further questions about cognitive-emotional functioning in adolescents that can be addressed in future research with more scientific rigor. Another important aspect of this study is the validation of the measures for a number of multidimensional as well as unidimensional cognitive-emotional constructs in Bangladeshi culture. This psychometric contribution equips us for future research to the greater understanding of the role of family and school

in the development of cognitive-emotional capacities in adolescents. Thus the study makes it feasible for future research with the adolescent population in Bangladesh.

The present study demonstrated that family atmosphere and school environment are two important predictors of cognitive-emotional functioning in adolescents. In practical vein, these information will help policy makers, counselors, psychologists (e.g., clinical, child), educationists, social workers, parents, care givers, government officials, mental health practitioners, NGOs and other officials who are working with children or adolescents to understand the significance of family atmosphere and school environment for development of various cognitive-emotional capacities and other behavioral aspects. This will, in turn, enable them to create a supportive world for child development in order to build them as human resources for the country. As today's children are the future of tomorrow, parents, teachers, and other responsible authorities of the society should be aware of their development in general and cognitive-emotional development in particular. This awareness among the people of the country will be developed through dissemination of the findings (e.g., publication, conference, presentation etc.). Furthermore, since, hopelessness and hostility are predictors of risk behavior among youths ([Bolland, 2003](#)), their significant relationships with the family atmosphere and school environment can have important implications for designing intervention programs for the vulnerable adolescent population of the country. According to health beliefs model ([Stretcher & Rosenstock, 1997](#)) it is one of the effective ways to reduce risk behaviours.

In summary, the present study is important in that it enriches the existing literature by providing evidence of the joint effects of family atmosphere and school environment on the development of cognitive-emotional functioning in adolescents. Additional research that potentially examines adolescents' mental health, and relationships to the peer groups, siblings, community, and neighborhood, are also of critical importance if we want to

further advance our understanding of the role of family and school in the development of the adolescents' cognitive-emotional capacities.

### ***6.5 Conclusion***

There is growing recognition that adolescents need supportive environment not only for their physical growth, but also for emotional, social, and cognitive development. Family and school provide the most immediate and the most important psychosocial environment where adolescents can develop to their fullest capacities in all these domains. Family and school have the main responsibility to ensure normal development of the adolescents' cognitive-emotional functioning, as these are the two main settings within which children are cared for and protected, and the primary places where their first significant relationships develop with the people of their surrounding. The present study provides empirical evidence of the role the family and school play in adolescents' life. In all stages of life, people have to deal with a wide range of challenges to adapt to the world. The thoughts, ideas, and concepts developed during the period of adolescent influence their future life, playing a major role in character and personality formation. To improve the overall cognitive-emotional functioning in adolescents, it is inevitable for all to come ahead and initiate joint venture.

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## Appendices

1. Letter of user permission for	CERQ
	EIS
	FAS, CHS, and HS
	SMI, FES, and CES
	SES
2. Letter of written permission from Board of Intermediate and Secondary Education, Dhaka	
3. Letter of permission for data collection from	
	Raihan School and College
	Ideal laboratory college
	Naowab Habibullah Model School & College
	Motijeel Government Boys' High School & College
	Sher-E-Bangla Nagar Govt. Boys' High School & College
	Sher-E- Bangla Nagar Govt. Girls School & College
	Dhaka Cantonment Girls' Public School & College
4. The Bangla version of CERQ	
	First draft of CERQ
	Second draft of CERQ
	Final version of CERQ
5. The Bangla version of EIS	
	First draft of EIS
	Second draft of EIS
	Final version of EIS



6. The Bangla version of FAS	
	First draft of FAS
	Second draft of FAS
	Final version of FAS
7. The Bangla version of SMI	
	First draft of SMI
	Second draft of SMI
	Final version of SMI
8. The Bangla version of SES	
	First draft of SES
	Second draft of SES
	Final version of SES
9. The Bangla version of CHS	
	First draft of CHS
	Second draft of CHS
	Final version of CHS
10. The Bangla version of HS	
	First draft of HS
	Second draft of HS
	Final version of HS
11. The Bangla version of FES	
	First draft of FES
	Second draft of FES
	Final version of FES
12. The Bangla version of CES	

	First draft of CES
	Second draft of CES
	Final version of CES