CHAPTER-3
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3.1 RESEARCH QUESTIONS

The study proposes to address the following major questions-

1. What is the status of management education, its present scenario and future trends?

2. What is the profile of management students?

3. What is the level of satisfaction of management students in terms of academic and other aspects?

4. What are the dominant types of personality of management students?

5. Whether there is any relationship between Personality and Emotional Intelligence, Personality and Risk Taking Ability and Emotional Intelligence and Risk Taking Ability?

6. What are the levels of Emotional Intelligence and Risk Taking Ability of management students?

7. Is there any difference relating to satisfaction level of management students between Government/Deemed and Private Universities?

3.2 REVIEW OF RELATED LITERATURE

Literature review is a body of text that aims to review the critical points of current knowledge on a particular topic. The objectives of review of related literature are –

1. To gain a background knowledge of the research topic.

2. To identify the concepts relating to it, potential relationship between them and to formulate researchable hypotheses.
3. To identify appropriate methodology, research design, methods of measuring concepts and techniques of analysis.

4. To identify data sources used by other researchers, and

5. To learn how others structured their reports.

The three sub headings below indicate the various areas of the study which are being addressed.

3.2.1 RESEARCHES RELATED TO PERSONALITY

Personality Type

Mehta (1983), explored the adjustment and personality types among obedient and disobedient students but they did not seem to possess any definite type of personality.

Chauhan and Chauhan (2001) collected data with the help of the questionnaire administered on 176 managers of senior and junior levels from government, private and public organizations. About 56% managers were found to be of ESTJ type and they showed a high positive correlation with role efficacy. The managers having INFP type of personality showed a negative correlation with role efficacy. ESTJ have lot of flexibility in the types of jobs they choose. They put a lot of effort in doing things and are happiest in a leadership position. However, because they have a natural drive to be in-charge, they are best suited for jobs that require creating order and structure.

Henry “Dick” Thompson (2006), reported on some of his research into EI and Type. Of the 5 personality types with the highest overall EQ score three were
feeling types and two were thinking types and three preferred Feeling and two preferred Thinking. In fact the top 2 were ENTJ and ESTJ (Followed by ENFJ, ESFP, and ENFP). Of the 5 personality types with the lowest overall EQ score, three were feeling types and two were thinking types. And surprisingly, the bottoms two were feeling types: ISFJ and INFP. There is no correlation between EQ and Feeling in Thompson’s research.

Roger Pearman (2006) study on Emotional Intelligence and Personality Type concluded that healthy use of emotion is related to effective use of all the mental functions rather than being uniquely associated with Feeling.

**Personality Traits**

Several studies have been conducted by researchers to investigate the personality traits of students. Jain (1954), studied the personality structure of adolescent girls and found that an average adolescent girl has indulged in day dreaming about herself and there was no fantasy in her life than the capacity for abstract thought. Saraswat (1964), compared the personality patterns of adolescent boys and girls. She observed no significant difference in the normal functioning of the ego of boys and girls. The boys tended to be more aggressive and girls more timid in social situations.

Sinha (1980) randomly selected a sample of one hundred doctors from Delhi population. Cattell’s 16PF was used to study their personality traits. The doctors were found to be more intelligent (B), controlled (Q3), and Shrewd (N) and emotionally stable (C).
Mcglyan (1981) while comparing the successful and unsuccessful groups of teachers did not find significant difference in the personality traits.

Singh (1981), found personality traits of engineering and medical students by using cattell’s 16 PF. He found that engineering students are more intelligent and have strong superego in comparison to medical students, whereas medical students are significantly higher on factor of I (tough minded vs. tender minded) in comparison to engineering students.

Mahamood (1981), studied the personality profiles of sportsmen and non-sportsmen from two colleges. The results suggested that sportsmen in comparison to non-sportsmen were warm-hearted, outgoing and conservative.

Shah (1982), investigated the relationship between parental authoritarianism and personality traits of children. He found that children of low authoritarian parents tended to be more mature emotionally, accepting, trustful, and cultured than children of high authoritarian parents.

Forty eight engineers and forty three software professionals completed a questionnaire comprising of 16 personality factors in a study conducted by Nagraj and Kamlanabhan (1998). This study revealed that engineers are outgoing, emotionally stable, conscientious, and uninhibited and possess experimenting traits. On the other hand, software personnel were found to be emotionally stable, outgoing, controlled, and inhibited. There were major differences among these two groups on such personality traits as intelligence, ego-strength, super ego and self sentiment integration.
In a study on 35 engineers and 35 non-engineers conducted by Sayeed and Jain (2000), FIRO (B) questionnaire was used. It was found that educational background and the type of the institution played a role in their inter-personnel behaviour. For engineers the university did not make much difference but for non-engineers the university was important. Those from urban universities were open minded and understanding, while those from non-cosmopolitan universities showed high inclination for inclusion expressed-inclusion wanted, control expressed-control wanted and affection wanted behaviour.

Anathasaynam R. (2006), conducted a study to find out the influence of personality traits on language skills of the selected engineering college students. The study clearly revealed that personality traits especially the traits like emotional control, courtesy and attitude towards life contributed more to the development of language skills. The personality traits of low and moderate groups did not support them in developing their language skills. Some of the personality traits have less effect on the language skills.

Vijaya Laxmi (2008), compared the personality profiles of 200 students pursuing M.B.A course. Cattell’s 16 PF questionnaire was used to study the personality difference among students with respect to their academic background and gender. Result showed that there was no significant difference among students in the personality profiles based on academic background except for measures of sensitivity and perfectionism. Another finding also indicated that there was significant gender based difference in some measure of personality like warmth, sensitivity, vigilance, abstractness and openness to change.
Research findings indicate that people considered as ‘leaders’ exhibit lower extents of neurotic traits. They maintain higher levels of openness – envisioning success, balanced levels of conscientiousness – indicating that they are well organized, and balanced levels of extraversion – indicating that they are outgoing, but not excessively so. Professional burnout has been linked with neuroticism, while extraversion has been linked to enduring positive work experience (Mehta Penkak, 2012). Those individuals, specially men, who exhibit high agreeableness are not as successful in making money. This could be attributed to them being too passive, and thus not aspiring to obtain higher levels of income. It is possible that these individuals are too passive and do not aspire to obtain higher levels of income (Judge T, Livingston BA, Hurst, 2012).

**Personality and Risk Taking**

In terms of actual personality traits, a targeted personality test has shown that risk takers tend to be hot tempered, and extravagant, while their risk-avoiding counterparts tend to be more thoughtful, frugal, even tempered and loyal.

In general, working in risky climate has been fully associated with personality factors, such as social maladjustment, and with perceived benefit of risk (Lavery, 1993). Researchers reported that persons who engaged in high risk behaviours had higher scores on affiliation, dominance and self-esteem variables and exhibited significantly higher risk and impulsiveness (Jackson, 1984; Moore and Rosenthal, 1993).

Only a few studies have examined the relation between the big five personality factors and risk-taking. Zuckerman and Kuhlman (2000) examined the relationship between personality and risk-taking; however they did not use the NEO
to measure personality. Personality was measured with Zuckerman-Kuhlman personality questionnaire. Their sample consisted of 260 subjects from an introductory psychology class. They identified sensation-seeking and impulsiveness as the personality traits most relevant to risk-taking. Sensation seeking is described as seeking novel and varied experiences in the complex situations and the willingness to take physical, social, financial, safety and legal risks. They also show that risk taking is consistent across different domains. Cross domain consistency implies that people have a stable risk disposition that may be based on personality. Domain specific risk behaviour means that risk taking may be influence by situational factors rather than personality. For example, people may be more inclined to take risks in the work domain than in the health domain. However if risk taking in general is associated with a particular personality profile, then people with this personality type will be consistent in their risk taking across all domains.

Lauriola & Levin (2001) studied the association between the five-factor personality domains and risk-taking in an experimentally controlled study. The sample included 76 men and women separated into 3 age groups: 21-40, 41-60, and 61-80. Risk was measured in trials where subjects were forced to choose between two choices, one that offered a sure gain (or loss) and a risky one that offered a potential gain (or loss) and stated the probability of that outcome. Males scored lower than females in agreeableness and neuroticism; there were no gender differences in openness, extraversion and conscientiousness. Age was inversely associated with extraversion and openness. The 21-40 age group scored significantly higher on extraversion and openness than the other age groups. There was a significant main effect of gender on risk-taking, with males taking the risky option
more frequently than females. On the trials where risk-taking could achieve a gain, there was a significant association with low neuroticism and high openness. No personality domains were significant with the trials that required risk to avoid loss.

Sonae & Chmiel (2005) studied whether people are consistent in risk taking across the domains of work, health, and personal finance. Sample included people from a broad array of backgrounds and risk taking domains. Individuals who were consistently risk-avoidant across three domains scored significantly higher on agreeableness and conscientiousness and lower to neuroticism. High scores on extraversion and openness predicted risk-taking in the work domain. Conscientiousness predicted risk aversion in all three domains. Overall, extraversion and openness predicted risk taking while Conscientiousness predicted risk aversion. These findings of risk taking and risk-aversion consistency support the idea of an association between personality and risk-taking.

One such study (Nicholson et al., 2005) looked at a sample of 2,401 students and executives attending graduate courses at a local university. Risk taking was measured with the Risk Taking Index, a scale developed to assess participant’s frequency of risk-taking behaviours in the domains of health, career, recreation, finance, safety, and social risk. The NEO Personality Inventory (Revised) was used to measure personality. A comparison of mean overall risk taking scores found women to be less likely than men to take risks. When examining specific domains, men took significantly more risk in the recreational, health, safety and finance domains. Women took more risk in the social and career domains, but this difference was not statistically significant. Overall, risk-taking was found to decrease with age.
Extraversion and openness were positively associated with risk-taking, while neuroticism, agreeableness and conscientiousness were inversely associated with risk-taking. This was true across all domains except the health risk domain where neuroticism was positively associated with risk-taking. This study also found the extraversion facet of sensation seeking to be the facet most strongly associated with overall risk-taking.

Another study (Vollarath & Torgevsen, 2002) of 683 university students examined the association between eight personality types and the risky behaviors. The personality types were a combination of scores on neuroticism, extraversion and conscientiousness. The scores of each of these factors were split at the median and individuals were classified as scoring high on a factor if they scored above the median and classified as scoring low on a factor if they scored below the median. Eight personality types were constructed by combining high and low scores on the three factors studied. For example, the personality type labeled as “impulsive” consisted of a high score on extraversion and neuroticism and a low score on Conscientiousness. Individuals who scored high on extraversion or neuroticism and low on conscientiousness were most likely to engage in multiple risky behaviours. Individuals classified as scoring high on conscientiousness and low on extraversion were the least likely to engage in risky behaviours.

Risk taking has been a focus of research for a long time, but few theoretical frameworks have been advanced to guide satisfactory explanations and successful interventions (Steinberg, 2007).
Personality and Demographic Variables

Sharma, N. (1989) studies the social, emotional and educational problems of adolescent college students (Agra) in relation to personality factors and found many similarities and differences in respect of both between subgroups by gender, age and socio-economic status.

Vineeta Chaudhary (2007) compared the urban and rural students in their personality characteristics. It was found that urban girls were found to be more outgoing, participant in activities (A), more intelligent and better in abstract thinking (B), facing reality (C), excitable (D), dominating behaviour (E), enthusiastic (F), and more preserving and rule bound (G), socially bold (H) than the rural girls, whereas the rural girls were found to be reserved, less intelligent, easily upset, inactive to their duties, submissive, having super ego strength. On the other hand four characteristics I, Q₂, Q₃, and Q₄, showed that girls of rural areas were found more depended for the work to others; self sufficient and controlled. The urban boys were also found to be different in their personality than the rural ones. From the results of the findings it was concluded that rural and urban boys were found different in most of the fourteen personality characteristics.

Roma Agrawal and Kum Kum Singh (2007), studied the personality traits as a function of caste and gender. The finding revealed that four out of sixteen personality factors showed significant interactive effects. Those factors were submissiveness Vs dominance, tough minded Vs tender mindedness, self assured Vs apprehensiveness and undisciplined self conflict Vs following self image. It also concluded that the caste and gender alone do not play any decisive role in the personality traits of the individual.
**Personality and Jobs**

Schneider and Dachier (1978), found that the feeling of a worker about his or her job tend to be stable overtime and might be a product of specific personality traits. Extrovert people have more positive affect in their daily life than introvert people. Neurotic people have more negative daily affects (Costa and Mc Crae, 1980).

In a study by Srivastava (1994) 160 army personnel (junior commissioned as well as non-commissioned officers) filled out questionnaires on job satisfaction, anxiety at workplace and schedules. The results showed that, irrespective of their rank, army personnel in general had the following common characteristics: outgoing, warm hearted, emotionally stable and conscientious, trusting and showing natural behaviour and self-sufficiency. They are also venturesome, socially bold, self-assured, conservative, respecting established ideas, socially precise and relaxed. The only major differences were over job satisfaction and anxiety.

Graziano et al. (1996) explored that agreeableness is positively related with performance because of negotiating with stress as opposed to power assertion tactics, in the event of conflict or disagreement with a group. Judge et al. (2000) have found an indirect relationship between personality and job selection. Individuals choose organizations that complement their personality and organizations choose individuals who have personalities that complement the organization. When this occurs, there is fit which represents the degree of job satisfaction. Neuroticism was not related to any occupational interests. Emotional stability is positively related with job proficiency across occupational groupings.
The review of Barrick et al. (2001) shows that conscientious and emotional stability consistency predicts job performance for all job types. Personality is useful for predicting other work related criteria, like job satisfaction (Goodstein and Lanyon, 1999). Hurtz and Ddonovan, 2000 explored the relationship between performance and personality as the predictor of work performance. Thoresen et al. (2003) concluded that extroversion and emotional stability are positively correlated with job satisfaction and organizational commitment, and negatively correlated with job change and burnout. Extroversion and emotional stability are more important for understanding how one feels about work (Bozionelos, 2003). It was also found that individuals who are expected to demonstrate higher involvement in their work, possess the characteristics of agreeableness in low degrees. Furthermore, the type of involvement in their work that is detrimental to work performance is exhibited by individuals who score low on agreeableness.

Vocola et al. (2003) studied professionals from public and private organizations (who had undergone major organizational changes such as restructuring, etc) and found that there is relationship between personality traits and employees attitudes towards change. Dijkstra et al. (2005) found that conflict frequency at work settings are negatively correlated with well-being of the individual. Personality characteristics play a role in determining to what degree individual experiences inference between work and home (Beauregard, 2005).

Sandhu (2004) found that there is no correlation between personality factors (except factor M-practical Vs imaginative) and job satisfaction.
Vinson et al. (2007), studied 1,081 individuals working in different Organizations and revealed that high extroversion, openness to experience and conscientiousness are related with frequent organization switching.

**Personality and Education**

Bhatnagar (1961) tried to correlate some of the personality variables with academic achievement. He found that need for achievement, autonomy, dominance, endurance and aggression correlated positively and need for deference, affiliation and abasement correlated negatively to academic achievement of the students.

Saklosfske (1977), studied the personality and behaviour problems of school boys. Badly behaved boys scored significantly higher on psychoticism and significantly lower on extraversion and the lie scales than well behaved boys. The neuroticism scale did not discriminate between groups.

Nirmala Kaushik and Manju Singh Tonk (2008), concluded that extraversion is positively related to opportunities to use and develop human capacity. Agreeableness is positively related to social integrations and conscientiousness is positively related to opportunities to use and develop human capacity.

**Personality and Educational Leadership**

No clear picture has emerged between personality traits and effectiveness of leadership. In these studies, instead of using personality directly, leadership behaviour was used as a proxy. Some descriptors of leadership behaviour, namely democratic style of performance and communicating a well described vision are strongly correlated to one of the Big Five personality factors.
The heads of educational institutions must understand the personality types of teachers through meta-cognition, which will motivate the teachers to perform better in a group environment (Loos, 2001).

According to Weisenbach (2004) highly dominant traits of principals (which is a negative personality) can create bad working conditions and relationships in schools.

Schultz (2005) showed that principals who are optimistic, show empathy, and are interested in the development of their colleagues and service-oriented are regarded by teachers as inspirational leaders.

A study of 308 under-graduate students using Five Factor Inventory processes suggested that their personality directly affected their academic achievement (their GPA), in the sense that agreeableness and conscientiousness are positively correlated with such learning styles as synthesis, analysis, study of techniques and retention of information. Intellectual curiosity greatly enhances academic performance (Komarraju et. al, 2011).

### 3.2.2 RESEARCH RELATED TO RISK TAKING

**Risk-Taking and Demographic Variables**

Many studies have investigated the demographic variables in relation to risk-taking. These studies indicated that there is adequate evidence to suggest relationship between risk-taking and the background variables. Two significant demographic variables in terms of its relation to risk-taking are age and gender. Studies investigating age, gender and risk-taking generally indicated that risk involvement
increase; perception of risk decrease; and risk preferences vary with the increasing age, especially for boys.

Wallach, M.A. Kogan M. (1959), studied sex difference and judgement process. They found that males exhibited greater confidence of judgement of risk-taking than females. They also found that young men were significantly higher in confidence than old men in risk-taking ability.

Slovic (1966), designed a decision-making game to assess the participants’ willingness to take risks. 1047 children participated in his study. Based on the findings of this study, he suggested that sex difference in risk taking was a characteristic of the American culture and boys were more inclined to take risks. According to risk-taking research, age and gender are the significant variables that have a positive or negative relationship with risk-taking behaviour. More specifically, risk involvement rises and risk perception decreases, as age increases. That is, later adolescents are more predisposed to engage in risk-taking behaviors. Adolescent males are inclined to perceive risky behaviour as less risky compared with their contemporary females.

Krishna (1973) studied some antecedents and personality correlates of risk-taking behaviour. In which major finding was that the male and female students differed significantly from each other in risk-taking.

Ginsburg and Miller (1982), examined the sex differences of children in risk-taking behaviour in a descriptive, naturalistic study. 480 children participated in this study. They found that older male individuals were more likely to engage in risky behaviour than girls in prepared four risk-taking situations.
Ahmed (1989) studied the risk-taking. The main findings of the study were:

1. There is no significant difference in the lower and upper creative groups with respect to risk-taking.
2. There is a significant difference between boys and girls to show sex difference with respect to their risk-taking behaviour.

In another study, Gullone and Moore (2000), investigated the predictors of risk-taking. According to findings based on 459 school-based adolescents, age and gender were two of the significant predictors of risk-taking behaviours.

There have been many studies on what kind of people take risks. Scientists generally agree that the genetically makeup of the typical risk-taking person is exhibited in certain characteristics. For instance, there seems to be strong evidence that men are more likely to enjoy taking risk than women. However there are many women today who enjoy taking risk as well.

**Risk Taking and Sensation Seeking**

Sensation-seeking has been commonly discussed as a personality trait in the literature. Over viewing the sensation-seeking research, one can draw the attention of two different perspectives that explain sensation-seeking. One significant perspective is Arnett’s (1994), conceptualization of sensation-seeking. According to Arnett, sensation-seeking is a personality trait characterized by the extent of a person’s desire for novelty and intensity of sensory stimulation. The other perspective is Zuckerman’s conceptualization of sensation-seeking. Zuckerman views sensation-seeking as a biosocial dimension of personality and defines it as “the seeking of varied, novel, complex, and intense sensations and experiences and
the willingness to take physical, social, legal, and financial risks for the sake of such experience” (Zuckerman, 1994). Besides Zuckerman and Kuhlman (2000) emphasize the biological dimension of sensation seeking as distinct from Arnett’s conceptualization. Sensation-seeking is one of the most important concepts that have been linked with risk-taking. Individuals high in sensation-seeking have a tendency to involve in variety of risky behaviours (Zuckerman & Kuhlman, 2000). In other words, high sensation-seekers are less likely to label risky behaviours as risky, than their peers that are low in sensation-seeking (Hoyle, Stephenson, Palmgreen, Lorch & Donohew, 2002).

A great amount of research has been interested in the risk-taking and sensation-seeking. These studies show that sensation-seeking is a variable that strongly related to risk-taking both at the relationship and predictor level. Rolison (2002), examined the effects of sensation-seeking and some other kind of dispositional traits on risk-taking. Participants were 171 older adolescents between the ages of 18-21. Results showed that risk-taking was significantly affected by sensation-seeking. Greene et al. (2000) investigated the contributions of sensation-seeking and some other personality characteristics to explain adolescent risk-taking behaviour. 381 high school and 343 college students participated in this study. Results of the study suggested that risk-taking behaviour was significantly predicted by sensation-seeking. Horvath and Zuckerman (1992) examined the relationships between sensation-seeking and impulsivity, appraisal of risk, and risky behaviour. Subjects were 447 undergraduate students from University of Delaware. The results of the multiple regression analysis of the data showed that sensation-seeking was a strong predictor of risky behaviour. Rosenbloom (2003) examined the relationship
between risk-taking and sensation-seeking. Participants were 75 university students from Bar-Ilan University and their age range was 20 to 27. The results demonstrated that there was a positive relationship between risk-taking and sensation-seeking.

Fischer and Smith (2004) investigated the relationship between risk-taking and sensation-seeking in 403 college students. For this purpose, risk-taking items were divided into two groups and the groups were named as negative and positive risk-taking. Results of the study demonstrated that sensation-seeking was significantly positively correlated with both types of risk-taking. Risk-taking research indicates that sensation-seeking is one of the strong variables that contribute to risk-taking.

Huth-Bocks (2008), found that sensation-seeking behaviour in university students was associated with high extraversion in females and low agreeableness and low conscientious in both (males and females).

**Risk-Taking and Self-Esteem**

Self-esteem is a personality trait that is frequently examined in the adolescent risk-taking research. Kumar (1980) studied Self-esteem and aspiration as a factor effecting risk-taking behaviour among deviant adolescents. The findings of this study were:

1. Risk-taking behaviour of adolescent girls showed significantly more unethical risk-taking behaviour than non-deviant.
2. Adolescent girls with high self esteem showed more risk-taking tendencies.
4. Greater the risk-taking, higher was the aspiration.
In a longitudinal study Jessor, Donovan, and Costa (1991), examined the role of some social-environmental and personality variables including self-esteem in explaining risk taking. Participants of the study were 384 high school and 184 college students. They found that personality variables including self-esteem consistently predicted the problem behaviours.

Research on relationship between self-esteem and risk behaviours indicates contradictory findings (Connor, Poyrazli, Ferrer-Wreder & Grahame, 2004). While several studies suggest that low self-esteem is correlated with increase in risk involvement (Scheier, Botvin, Griffin & Diaz, 2000; Belgrave, Van Oss Marin & Chambergs, 2000), other studies argue that higher self-esteem is also positively correlated with risk behaviours (DeSimone, Murray & Lester, 1994; Connor et al., 2004). However, research indicating the higher self-esteem and risk involvement relationship includes rather developmental studies, which divide risk-taking as adaptive and pathological (Baumrind & Moselle, 1985). According to these studies, one of the personality characteristics of an adaptive risk taker is higher self-esteem. Therefore, research has demonstrated that risk involvement is either related to higher or lower self-esteem, depends upon the risk type or theoretical background of the study.

**Risk-Taking and Locus of Control**

Research suggests that locus of control is an important personality characteristic in adolescent risk-taking. In other words, individual’s risk-taking behaviour can be affected by perceived control over the events of that individual. Nevertheless, research findings related to this topic is not consistent. For example,
Ahmed (1985) examined the relationship among entrepreneurship, locus of control, risk-taking propensity, and need for achievement. 133 participants were divided into two groups as entrepreneurs and non-entrepreneurs. Results showed positive correlation between risk-taking propensity, an internal locus of control, and need for achievement among entrepreneurs.

Similarly, Crisp and Barber (1995) investigated the relationship between risk-taking and risk perception, sexual risk-taking and locus of control in a sample consisting of injecting drug users. Participants of the study were 37 adolescents between the ages of 14-21. The result of this study demonstrated that decisions that the adolescents made about taking risks were significantly affected by their locus of control.

In contrast to studies mentioned above, locus of control was not found to be a significant predictor of risk-taking in several studies.

Rolison (2002), examined the effects of several personality variables including locus of control on the risk-taking behaviour. Participants were 171 older adolescents between the ages of 18-21. It was found that locus of control was not related to the risk-taking. Likewise, Rolison and Scherman (2003) examined risk-taking in terms of three different perspectives. In one of the perspectives, locus of control was examined. Participants were 260 college students between the ages of 18 and 21. A result showed that locus of control was not a significant predictor of risk involvement.

The results of the above studies indicate that role of locus of control in explaining risk taking is ambiguous.
Risk Taking and Cognitive Development

The traditional researches in cognitive development have traditionally linked age with sophisticated cognitive representation capacities (Mandler, 1998), with enriched reasoning skills (Deloache, Miller and Pierroutsakos, 1998), and with enhanced memory strategies (Schenider and Bjorklund, 1998). These cognitive developments indicate increment in the probability that a person would take risk more often. However, recent shift in focus towards the development of decision making skills has been observed in cognitive developmental researchers interested in risk taking ability (Byrnes 1998 and Jacobs 2001). This shift in focus is perhaps the most important turning point in the study of risk taking ability.

Risk taking behaviours are characterised by affective motives such as desire for positive effect, avoidance of negative affect and emotional handling strategies, according to Cooper, Agocha and Sheldon (2000) who incorporated self-report methodologies in their study. In 2003, Cooper highlighted the relations between emotional regulation, impulsivity and engagement in risky behaviours.

Risk Taking and Emotions

The role of emotions in risk-taking behaviours is a recent addition in studies. In research involving risk-taking, emotions have been implicated in two basic ways. The first basic way studies how individuals react to emotion provoking experiences, and how these reactions influence their decision-making in potentially risky situations (Trannel and Damasio, 2005), Catanzaro and Laurent (2004). On the other hand, the role of emotional regulation and the possibility that the impulsive or anger-prone individuals are inclined towards externalizing and risk-taking behaviour has
been studied as the second basic way (Colder and Stice, 1998), Essex and Smider (2002), Steinberg and Morris (2003).

**Risk Taking and Creativity**

Kalpana (1963) in relation to scientific creativity has spoken of the role of self-confidence and risk-taking in fostering creativity among the research scientists in an organisational setting.

Bar-ron (1963) attributed risk-taking both to the creative person and to the creative act.

Pamkove and Kogin (1968), reported a significant relationship between the numbers of associations generated to creativity tasks and preferred a high level of risk.

Agarwal (1982) studied creativity as a function of risk-taking. The conclusions were:

1. Risk-taking was more or less found to be positive and significant factor in fostering creativity of both the sexes.
2. Self esteem was found to be significant in case of boys; in the case of girls its impact was not very powerful.
3. Socio-economic condition of the home played no role or very significant role in fostering creativity of both the sexes.
4. In the entire designs parental acceptance was found to be very insignificant and positive factor in the development of creativity in both the sexes.
5. The three factors (risk-taking, self esteem and home background) did not interact with one another to influence creativity.
6. Risk-taking and parental acceptance were found to be more important predictor of creativity and self esteem than socio-economic condition.
In another study individual differences in risk taking were studied in a sample of 162 students. Measures of anxiety, creativity, defensiveness, intelligence and risks taking were analyzed to determine certain selected relationships. The researcher concluded that creativity bears a more powerful relationship to risk taking than intelligence.

**Risk Taking and Other Factors**

Hooda and Paul (1986) studied the effect of socio-economic status (SES) and academic achievement in risk-taking behaviour. The major objective of the study was to investigate effect of socio-economic status; academic achievement on risk-taking behaviour. It was concluded that students having high socio-economic status take higher level of risk-taking tendency.

Cliford, Yanlom and Chou Yang (1989) studied the developmental and cultural patterns in academic risk-taking with American and Chinese students. The main conclusion of this study was that sex difference in academic risk-taking is low relative to theoretically optimum risk level of 0.50.

Pandey and Rohatagi (1991) study revealed high correlation between risk taking capacity and job needs, job effectiveness and tolerance.

Either through questionnaires or through personal interviews, some scientists have studied risk-taking, while others have resorted to more artificial laboratory-based methods. There are significant differences between actual risk and experimentally controlled risk in terms of their validity, self-rapport, inherent weaknesses and inlaid biases.
Byrnes et al (1999) developed a decision game based upon the relationship between probability and risk taking. According to Byrnes and MacClenny (1994) adults are more adept in choosing the right pathway from a decision tree, as opposed to adolescents. Adults were more successful, more self-assured and exhibited more overall confidence. Adolescents also lacked the ability to incorporate feedback of decision outcomes. Hence there is a marked difference in the self-regulated cognitive sensitivity between adults and adolescents (Byrnes et al, 1999).

Nooris Kruger and Peter Dickson (2007), conducted an experimental study. The result shows that subjects who live in belief that they are fully capable of taking decisions see more opportunities in a risky choice and take more risks. Those who consider themselves not very competent and feel shakier take minimal risks. The feelings of self-competence, confidence and capability on one task did not apply to a similar task. Perception of opportunities was unexpectedly not related to the perception of threats. As executives bring their personal preconceived biases to firm decision making, it results into a serious built-in bias in SWOT analysis. Executives who believe that they and their firm are very competent will take more risks and vice versa. Results also provide evidence that the perceived likelihood of an event depends on whether the event is a loss or a gain.

One Israeli study\(^3\) claimed to have found what is called “risk gene”, labelling it D4DR, for “fourth dopamine receptor gene.” They even located it on the 11\(^{th}\) chromosome and pinpointed its function in the limbic portion of the brain. However, the study also said the gene would be responsible for only 10% of human risk-taking behaviour.

\(^3\) How to become a successful Risk Taker, Retrieved from “http://www.wikpedia.org
3.2.3 RESEARCHES RELATED TO EMOTIONAL INTELLIGENCE

Historically, conceptually, psychometrically and scientifically there are many questions surrounding the possible value of the construct of Emotional Intelligence (EI), particularly with respect to work related behaviour. The proponents of EI argued that the construct was in its infancy (Landy 2003, Daus and Ashkansay, 2003). Two of the leading academic researchers of EI, Peter Salovey and Jack Mayer have expressed concern that entrepreneurs have taken a product to market before it was ready (Mayer 1999). This concern has been echoed by others (Matthews et al. 2002, Sternberg 2002).

Emotional Intelligence, Gender, Age and Location

According to Bar-on (1997) there is no significant correlation between gender and emotional intelligence, when one uses the EQ-i. On the otherhand, Mayer, Caruso & Salovey (1999) suggested that females score much higher than males. Barret, Lane, Schrest & Schwartz (2000), Lopes, Salovey and Straus (2003), supported this hypothesis by mentioning that women are more articulate and possess more complexity, probably because of mother-child interactions, especially between a mother and her female child. This positive view of women is somewhat negated by Eagly, Makhijani & Klonsky (1992) who thought that women are inferior when it comes to democratic leadership. However, there is a strong correlation between age and emotional intelligence, as older people fare much better (Bar-on & Handely, 1997).

Tapia and Marsh (2001), established a conclusive and significant effect of gender and two-way interaction of gender GPA on emotional intelligence. Annaraja
and Jose (2005) found that rural and urban B.Ed, students did not differ in their self-awareness, self-control, social skills and emotional intelligence. Mandell and Pherwani (2003), have found that women are more likely to score higher on measures of emotional intelligence than men, both in professional and personal settings.

Tyagi (2004), discussed the emotional intelligence of the secondary teachers in relation to their gender and age. The findings of the study revealed that the level of emotional intelligence of secondary teachers was low. It was independent of gender and age.

Significant and positive relationship has been established between parental education/occupation and dimensions of emotional intelligence like social regard, social responsibility, impulse control and optimism (Devi and Uma, 2005). Similarly, female parent’s education and household income was positively related to emotional intelligence levels (Harrod and Scheer, 2005).

Patil (2006) studied the emotional intelligence among student teachers in relation to sex, faculty and academic achievement. The findings were: no difference between gender, arts and science faculty. But the emotional intelligence influenced the academic achievement of the student-teachers.

Gender, age and qualification influenced the emotional intelligence of school teachers (Amirtha and Kadhiravan, 2006). As the main aim of education is the all-round holistic development of the students, teachers play a significant role in the pursuit of this goal, by helping them develop improved motivation, enhanced innovation, increased performance, effective use of time and resources, improved
leadership qualities and improved teamwork. It was concluded that the development of emotional intelligence of student-teachers during pre-service was essential.

Singaravelu S. (2007) studied the level of emotional intelligence of 220 student teachers at primary level in Puducherry region. It was found that about two third student teachers had high level of emotional intelligence. Male and female teachers showed no significant difference in emotional intelligence. There exists an urban-rural variation in EI. Marital status also had a significant effect on emotional intelligence.

Mukti Mishra, Vaishali Rao and Gautami Bhatpohari (2008), in their study of college girls found that scheduled caste (M= 267.35) college girls were high in emotional intelligence than tribal and non tribal girls. The tribal (M=264.60) college girls were high in emotional intelligence than non tribal (M=256.15) college girls. Further F-ratio was computed to check this difference of tribal and non tribal and scheduled caste college girls in regard to their emotional intelligence. The value of F-ratio was insignificant at any acceptable level of confidence. Thus there does not exist at any significant difference in emotional intelligence of tribal and schedule-Caste girls.

Singh, Chaudhary and Asthana (2008), studied the impact of locale and gender on emotional intelligence of adolescents. The result reveals significant difference in emotional intelligence of rural and urban adolescents, indicating urban adolescents better than rural counterparts. Male and female adolescents exhibit same emotional intelligence.
Emotional Quotient (EQ) and Intelligence Quotient (IQ)

A Harvard Business School study of its graduates revealed that there was little or no significant correlation between career success and IQ. This is consistent with the contention that measures such as IQ and grade point average lack predictive ability, and that it is EI which provides the missing link between university results and career success. (Chen, Jacobs and Spencer 1998), Chia (2005) studied the recruitment process in firms and identified that the EI competencies enhance the graduate’s performance in the interview process.

A study comparing emotional intelligence (EQ) and cognitive intelligence (IQ) as measures of work performance was undertaken at a major Asian bank, where it was demonstrated that in predicting success in the workplace, EQ precedes IQ (Joseph Hee-Woo Jae, 1998). It was established that emotional intelligence is significantly and highly correlated with job performance, whereas cognitive intelligence has shown a very low and insignificant correlation with performance in the workplace.

In the study, 100 university-educated, front-line bank employees of whom 56% were female and 44% were male were administered the EQ-i and a widely used IQ test. Thereafter each employee underwent an independent performance review with the supervisor. It was found that EQ scores were far related to actual on-the-job-performance than IQ.

Emotional Intelligence and Work/Job/Team Performance

Emotional Intelligence plays a key role in the success of individuals in the work place. Research studies have established a strong relationship between EI, performance of an individual and his team.
McDowelle and Bell (1997), found that lack of emotional intelligence skills lowered team effectiveness, created dysfunctional team interactions and persons with low EI were found to score low on the networking skills as well.

Ciarrochi Chan and Caput (2000), studied the impact of emotional intelligence on occupational stress. They opine that an objective measure of emotion management skill is associated with a tendency to maintain and experimentally induced positive mood which has obvious implication for preventing stress. Emotional Intelligence may protect people from stress and lead to better adaptation.

Compelling behavioural research on more than 500 organizations by the Hay group and Daniel Goleman, author of working with emotional intelligence, shows that:

- Emotional Intelligence is twice as important as any other factor in predicting outstanding employee performance.
- Emotional Intelligence accounts for more than 85 percent of star performance in top leaders.
- Emotional Intelligence—not IQ, advanced degrees, or technical experience—is the single most important factor in the ability to build and sustain relationships.
- Emotional Intelligence can be learned and enhanced-relatively-quickly—through specialized assessments, training and coaching.

The relationship between individual and team performance and emotional intelligence has also been established. Emotional intelligence skills connect both to individual cognitive based performance and also to team task performance skills, perhaps due to an enhanced ability of individuals to recognize and manage emotions and brace against distracting emotions.
It is a well known fact that although the person may be exemplary good in application of his skills, it is essential that he has to rely on working in a team as the activities are inter dependent and not independent. Research studies have established a strong relationship between EI, performance of an individual’s and his team. Perhaps due to an enhanced ability to recognize and manage emotions and brace against destructive/negative emotions, higher EQ helps in connecting both to individual cognitive based performance and team task performance skills.

Lam and Kirby (2002) studied 304 undergraduate students who demonstrated a positive influence of EI and the EI competency area of emotional awareness and management on individual cognitive based performance. Similarly, Jordan and Troth, (2004) found that a better task performance skills are displayed by teams comprising of members of high EI than teams comprising of less emotionally intelligent individuals.

Research of EI and job performance show mixed results- a positive correlation has been found in some of the studies; while in some there was no correlation or the relationship was inconsistent. A compensatory model between EI and IQ by Cote and Miners (2006) a, offered a direct association between EI and job performance which becomes more positive as cognitive intelligence decreases. The results of their study show that this kind of compensatory model does exist: due to higher EI, employees with low IQ get higher task performance and organizational citizenship is behaviour directed at the organization.
Emotional Intelligence and Education

According to policy makers and educational authorities, emotional intelligence is directly related to the academic achievement of students. Schwab, Stone and Silver (1997) showed that emotional intelligence is a must for successful learning.

Research indicating a close connection between emotional intelligence and school performance is plethora. Gage and Berliner (1992), presented research and summarized it by stating that “from historical sketch given, one might guess that emotional intelligence correlates with school success, and one would be right” In contrast a statistically significant relationship between EQ-i score and performance at school did not reveal (Nesome, Day and Cantano, 2000) but, Bar-On (1997b), (2003); Parker, Creque, Barnhart, Majeski, Wood, Bond & Hogan (2004); Swart (1996) clearly indicated that such a relationship exists.

About 80% of the success in an individual's life can be ascertained through that person's level of emotional intelligence (Shiver, 1997 and Pool, 1997). Stuff (1996) showed that people with low emotional intelligence do not have the required level of discipline to achieve success in their lives.

Another study done by Mayor and Cobb (2000) gives a very substantial advice to educators regarding coordinating link between emotional intelligence and education. They pointed out that most of the studies are based on mixed model rather than on ability based model. So they maintain the importance of viewing learners as both cognitive and emotional beings and need of research to be done on education and emotional intelligence.
K.V. Petrides, Norah Frederickson & Adrian Furnham (December, 2002) conducted a study on the role of emotional intelligence in academic performance and deviant behaviour at school. On a sample of 650 pupils in British secondary education (mean age 16.5 years), it concluded that respondents with high EI scores were less likely to have had unauthorized absences and less likely to have been excluded from School.

After evaluating the role of EI in effectiveness for the undergraduate business majors Rol-Zell et al. (2002), concluded that universities should inculcate EI within the core skills taught in training and development programs at university. In addition, Vela (2003) who studied the role of EI in academic achievement for his doctoral dissertation asserted that it is imperative that students are provided with early interventions that involve development of emotional intelligence.

Nelson and Low (2003) have confirmed that self assessed emotional intelligence and personal skills are important to academic achievement and career effectiveness. Healthy emotional development and productivity involve the key competencies and skills of emotional intelligence. Learning, developing, and applying these skills improve performance and sense of personal well-being. The competencies and skills of emotional intelligence enable educators to develop a learner-centered skills-based curriculum and personalize the delivery of instruction.

Dey N. (2009) studied influence of emotional intelligence on academic self efficacy and achievement. The results confirmed the positive impact of academic self-efficacy and emotional intelligence in the relationship between academic self-efficacy and achievement. The relationship could be understood from the
perspective that students with high sense of efficacy have the capacity to accept more challenging task, demonstrate increased persistence in the face of obstacles, show lower anxiety level, and employ more self-regulation strategies.

**Emotional Intelligence and Longitudinal Studies**

Psychologist, Dr. Thomas Achenbach of the University of Vermont who carried out quite extensive studies on American children by assessing them in mid-70s and later on in the late 80s, has concluded that over that decade and a half, there was a steady worsening of children’s emotional intelligence. When Dr. Thomas Achenbach collaborated with his colleagues (1983) on similar assessments in other nations, he found that the decline in children’s basic emotional competencies seems to be worldwide. The situation as visualized can make us imagine as to how the younger generation will face the realities when they enter the workforce of tomorrow.

A series of longitudinal studies have shown that people can change emotional competency over two to five years. M.B.A. students averaging 27 years old at entry point in the programme, showed dramatic changes on videotaped and audio taped behavioral samples and questionnaire measures of these competencies, as a result of the competency based outcome oriented M.B.A. programme implemented in 1990(Boyatzis, Baker and Thompson 1995, Wheeler 1996).

Weatherhead M.B.A. students graduating in 1992, 1993, 1994 and 1995 showed strong improvement on 71% of the competencies in the Self-Management, 100% of the competencies in Social-Awareness and 50% of the competencies in social skills. Meanwhile the part time M.B.A students graduating in 1994, 1995 and 1996 showed strong improvement in 71% of the competencies in the Self-
Management (Self Confidence, Initiative), 50% of the competencies in Social-Awareness (Social Objectivity) and 83% of the competencies in Social Skills Oral (Communications, Group Management).

A seven year longitudinal study by Dulewicz and Higgs (2003), revealed EI as more important than intellect and other management competencies in the advancement of managers. Results indicated that intellect accounted for 27% and management competencies for 16%. While emotional intelligence explained 36% of the vacancies in advancement.

**Emotional Intelligence and Other Factors**

Van Rooy and Visvaran (2005) reviewed 102 empirical studies published in some leading journals from 1985 to 2004. The result shows that in 55 studies participants were children, adolescents and college students. The total number of participant in these studies were about 13000, median being 205. Only 15 studies were related to employed participants and focused on work related behaviours. The total N for these studies was approximately 1300, median being 63. In all 19 studies were classified as employment studies with a total sample of 2652. Moreover 13 studies were unpublished masters or doctoral dissertation or presented in conferences.

Sabapathy (1986), examined the relationship between the variables-anxiety, emotional, social maturity, socio-economic status and academic achievements of students. He found emotional maturity was positively and significantly related to achievement in individual subjects and academic achievement in particular.

People who cannot marshal any control over their emotional life fight inner battles that sabotage their ability for focused work and clear thought (Druskat and
Wolff, 2001). Singh (2007), stated that motivating one or marshalling emotions is essential for self-motivation and creativity. Several studies have been conducted in India on El that have focused on the relevance and prevalence of Emotional Intelligence in the Indian business context (e.g., Bhalla and Nauriyal, 2004; Srivastava and Bharamanikar, 2004; Bindu and Thomas, 2006).

Emotional intelligence has been found to be a predictor of life satisfactions, healthy psychological adaptation, positive interaction with peers and family, and higher parental warmth (Palmer, Donaldson and Strong 2002).

Singh K. and Sanjay (2008) conducted a study on Biographical Information as Correlates of Emotional Intelligence. The study was conducted on a sample consisting of 178 social workers and 340 software professionals. It was found that both social workers and software professional’s possess above the average level of emotional intelligence.

**Emotional Intelligence and Leadership**

According to Hersey et. al. (2000) one should distinguish between leadership and management, when trying to relate them to emotional intelligence. Management involves doing some well specified tasks and performing duties adequately, while leadership is the ability to motivate others for arriving at common goals. Self awareness goes hand in hand with greater performance (Church, 1997). There is strong correlation between emotional intelligence and effective leadership, in the sense that such leaders develop good bonds with their own employees and clients, because they motivate others by keeping their own emotions in check, and knowing their own weaknesses (Feldman,1999, Noyes,2001, Chastukhina, 2002).
According to Barling et al (2000) and Mandell and Pherwani (2003) using EQ-i on 98 managers concluded that transformational leadership and emotional intelligence are linked. Malek (2000) has discovered that the leaders with higher EI also displayed better conflict resolution skills as these leaders are in a better position to rationalize and reason out the probable causes of conflict and understand a bigger picture in totality. These leaders do not address the issues in isolation which helps them to clearly visualize and explain the situation to their subordinates.

Managers with high emotional intelligence can extract better work output even from mediocre employees, because they recognize the obstacles to greater achievement and know how to remove those obstacles (Dearborn, 2002). Effective leaders should have the ability to develop specific competencies from all dimensions of emotional intelligence, even though that competency may not be at its maximum level.

In educational environment too, the performance of the head of Institutions/Principals has been linked to EI. On the lines of 360 degree Leadership inventory, Stone, Parker, & Wood v (2005) conducted a study which involved 464 principals and vice principals. EI was measured with the EQ-i. and the performance was measured by a 20+ item leadership questionnaire. The questionnaire was completed by the person’s superior and up to three subordinates. The researchers compared performance of those in top 20% bracket and also those in the bottom 20% bracket. The study revealed that the out-performing leaders not only scored significantly higher on the total EI but also had high scores on all four dimensions of EI.
Studies in leadership have found transformational leadership (leadership which inspires, motivate and develop others while generating awareness of organizational goals) lead to increased employee effectiveness and satisfaction. Studies have also found that transformational leadership is significantly related to higher emotional intelligence. (Landy, 2005 Brown, 2006).3.2

**Emotional Intelligence and Personality**

Another study suggested that EI represents a set of abilities distinct from either personality traits or mental ability. Rosete and Ciarrochi (2005) had a group of executives complete the MSCEIT, a personality measure (the 16PF5), and a measure of cognitive ability (the Wechsler Abbreviated Scale of Intelligence). Then they asked each executive’s subordinates and direct manager to assess his or her leadership effectiveness. Regression analyses indicated that EI not only predicted leadership effectiveness but also explained variance not accounted for by either personality or IQ.

In a meta-analysis, Van Rooy, Viswesvaran, and Pluta (2005) showed that EI is dissimilar from either IQ or personality. The meta-analysis was based on fifty-eight studies which included the EI construct, and involved more than 8000 subjects. The trends that came up showed that a few self-report measures of EI were not highly correlated to personality. Ability based measure of EI, on the other hand, neither correlated highly with personality nor with cognitive ability. With personality, the overall correlation was 0.13, and with cognitive ability the correlation was 0.34. The evidence strongly suggests that EI is distinct from both IQ and the traditional aspects of personality.

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3.2 [http://jlos.sagepub.com](http://jlos.sagepub.com)
Yao-Hui studied the relationship between personality type and emotional intelligence in a sample of 100 college and university faculty in Taiwan, Liang. A series of one-way ANOVA were incorporated to evaluate 18 hypotheses comparing personality type, emotional intelligence (EI), gender and age. The two inventories utilized in the study were the Emotional Skills Assessment Process (ESAP) (Nelson and Low, 1998) and the Myers Briggs Type Indicator (MBTI). While the relationship between Gender and EI could not be supported, the study did find evidence supporting the relationship between EI and Personality.

3.24 OVERALL VIEW

Thus all the available information on earlier studies and the findings of various researches undertaken on different aspects of the problem under study familiarize the researcher with knowledge pertaining to the area of study.

Researcher concluded afore mentioned studies on personality, risk taking ability, and emotional intelligence as follows:

**Personality**

1. There is no correlation between personality factors and job satisfaction.
2. Educational background, composition and instructional pattern of the educational institution affect interpersonal behaviour.
3. Rural and urban students are found different in most of personality characteristics.
4. Personality traits make great contribution to academic and other performance.
5. Caste and gender don’t display any decisive role in personality traits of the individual.
6. There is a relationship between type of personality and role efficacy.
Review of studies related to personality show that many attempts have been made to study personality traits of students and very little attention has focused on investigation about types of personality.

**Risk Taking Ability**

1. Young men are better than old men in risk taking ability.
2. Greater the risk taking, higher is the aspiration.
3. There is a high correlation between risk taking capacity and job needs, job effectiveness and tolerance.
4. Executives who believe that they and their organization are more capable take more risks.
5. Students having high socio-economic status take more risks.
6. Males exhibited greater confidence of judgment of risk taking than females.

In nutshell the researches related to risk taking ability are mainly concerned with sex difference, age, socio-economic status and role of emotions in risk taking behaviour. The ability to deal with uncertainty is the hallmark of future business leaders. Therefore management students should have the ability to manage uncertainty. The research studies on this aspect are very rare and far behind.

**Emotional Intelligence**

1. High Emotional Intelligence displays better task performance skills.
2. Emotional Quotient is more important in predicting success in the workplace than Intelligent Quotient.
3. Understanding own emotions allow students to improve their interpersonal skills.
4. Emotional Intelligence influences the academic achievements of students.

5. Boys and girls adolescents exhibit same emotional intelligence.

There is a growing body of research that points to wide array of attributes that have come to be known as emotional intelligence. EI competencies help to achieve workplace goals. Therefore it can be concluded that management students should acquire the knowledge and skills of emotional competencies. Thus there is a recognized need for well developed EI for business students.

Though several studies have been conducted relating to personality, risk taking ability and emotional intelligence but the reviews of such studies don’t help the researcher in taking an unequivocal stand for management students. It is in this background that this research has been undertaken to identify types of personality, levels of emotional intelligence, risk taking ability and examine whether there is a relationship between personality, risk taking ability and emotional intelligence of management students.

### 3.3 RESEARCH GAP

Personality, Risk Taking Ability and Emotional Intelligence are the components of management programme. Not many studies have been undertaken in these areas especially in management education programme. Hence an attempt is made to fill this lacuna. The present study is perhaps the first attempt to test and explain the relationship between these constructs of management students.
3.4 NEED & SIGNIFICANCE OF THE STUDY

The need of the hour is to study management students in terms other than motivation, leadership qualities, entrepreneurship, decision-making and other such factors traditionally embedded in the curricula of business schools. These students qualify for business schools only after successfully competing and completing a rigorous battery of tests.

The search for good and reliable method of selection is one of the important problems in higher education. According to Education commission “Rigorous criteria are needed to screen the students at the time of admission so that only those who can utilize the limited education resources are accepted and others left out. It will avoid the vast amount of wastage that would be incurred in absence of sound selection criteria.” The Education commission (1964-66) also pointed out that it would be an advantage to provide if possible, more than one channel or procedure of selection and to compare their validity in the light of actual performance of the selected students in the professional colleges. In this context factors like personality are perhaps more conducive to academic success.

The business environment in 21st century is global, customer centric, information based, new partnership and alliances, continuous learning and open to everyone. Against this business organization has to grapple with acquisition, support, development, increased productivity, quality and service and build appropriate leadership environment and commitment of human resources. Thus organization faces various risks and challenges. Few management decisions are made under conditions of perfect certainty. In fact most of the decisions are made under
uncertainty. The business climate is ever changing. Organizations operate under various internal and external constraints. Internal constraints can be controlled but external constraints are most directly under the control of organization. Risk taking ability of managers is critical for an organization.

Because of these factors risk taking ability among the management students should be given due consideration. The present study may also help to know about the level of risk taking of management students and if needed this could be incorporated into a well designed course for better performance of students.

Interdisciplinary research clearly indicates the importance of emotional intelligence in career success, personal well being and leadership. Management students have to perform multiple roles in their professional life. They experience more stress due to heavy workload. As the management students are at the threshold of entering the career of business, it is highly desirable to know their levels of emotional intelligence. Emerging trends also require the active and intentional development of emotional intelligence skills and competencies as a normal and integral part of the process of management education. Besides intellect, personality, emotional intelligence and risk taking ability assessed together are perhaps the best ways to get the picture of the whole person. These three do not overlap much. Instead each covers a unique ground that helps to explain how a manager clicks?

3.5 OBJECTIVES OF THE STUDY

The main objectives of study are:

1. To review the scenario of management education in India
2. To prepare the profile of management students.
3. To assess the level of satisfaction of management students in terms of various academic and professional aspects.

4. To classify the management students in terms of Personality, Risk-Taking Ability and Emotional Intelligence.

5. To investigate, assess and categorize the students on the basis of their personality types.

6. To compare various groups on the basis of Personality, Risk-Taking Ability and Emotional Intelligence.

3.6 HYPOTHESES

A hypothesis is a tentative assumption made in order to draw out and test its logical or empirical consequences. Any research work undertaken is based on certain hypotheses. This research work too is based on certain hypotheses. They are:

(i) There is no significant difference among the Personality of various groups.

(ii) There is no significant difference between the Risk-Taking Ability of various groups.

(iii) There is no significant difference between Emotional Intelligence of various groups.

(iv) There is no significant relationship between Personality and Risk-Taking Ability.

(v) There is a significant relationship between Personality and Emotional Intelligence.

(vi) There is no significant relationship between Risk-Taking ability and Emotional Intelligence.
Sub-Hypotheses

There is no significant difference among students in respect of:

i. Personality
   a. Gender (Male and Female)
   b. Locality (Rural and Urban)
   c. Category (General and Reserved)

ii. Risk Taking Ability
   d. Gender
   e. Residence
   f. Category

iii. Emotional Intelligence
   g. Gender
   h. Residence
   i. Type of Institution

3.7 SCOPE

In India and especially in Rajasthan limited studies have been conducted on Management Students. Considering the nature of the study descriptive method has been used. The data has been collected from MBA final year students pursuing the course in eight universities of Jaipur. Out of these eight universities one is government, one is deemed- to- be and other six are private. The study is confined to both government and private universities. A number of universities have their centers in Jaipur. They all are excluded from this study. Jaipur is one unique area from where representative sample can be easily taken to extract actual, original and first hand data. Moreover the availability of infrastructure and prevailing environment of the Universities have not been taken into account.
3.8 UNIVERSITY OF STUDY

Population of the present study comprised of about 8000 MBA final year students of Rajasthan.

3.9 SAMPLE

The sample of the present study compromised of MBA final year students of eight universities located at Jaipur. Seven universities are co-educational and one for females only. Sample is bound from all the universities. The sample selection is based on the convenient sampling method depending upon the availability of students.

3.10 TOOLS

Appropriate tools are necessary requirement for research. Selection and the development of the tools for the present study are described below-

PERSONALITY INVENTORY (PI)

Personality researchers confirm that it is a complex concept and its definition as well as measurement is not the easy task. MBTI is a questionnaire that is used to analyze and identify personality types. Many organizations today adopt this instrument to determine the behaviour of individuals. The instrument has both validity and reliability and it can be easily administered. MBTI measures how people prefer to focus their attention (E vs. I), collect information (S vs. I), process and evaluate information (T vs. F) and orient themselves to the other world (J vs. P). MBTI is used in the employee hiring process and team building.

MBTI as a psychometric instrument has been criticized on the following grounds-
Type not trait

The MBTI sorts for type, it does not indicate the strength of ability. MBTI instrument doesn’t measure aptitude, it indicates for one preference over others.

Own best judge

Individuals judge their own type and compare it with their reported type.

No right or wrong

Type preferences are polar opposites and not considered as better or worse.

Not for selection

The results of the assessment should not be used to label, evaluate, or limit the respondent in any way. Since all types are valuable, and the MBTI measures preferences rather than aptitude, the MBTI is not considered a proper instrument for purposes of employment selection or predictor of job success.

Accuracy

The accuracy of MBTI depends on honest self reporting of respondents. However an individual can fake his responses.

Terminology and Language

The terminology of MBTI is such that it can fit on any kind of behaviour of personality type. MBTI descriptions are brief.

It is essential to select or construct a tool with frame of reference of user. In our context John Holland’s inventory seem to be the appropriate tool to fit and adapt. Personality measurement helps to see a consistent pattern in a person’s orientation, individuals with different type of personalities can be equally effective.
Personality Inventory used in this research is based on the six personality orientations identified by John Holland. Holland presented six personality types Realistic (hand on trades), Investigative (analytical), Artistic (creative), Social (helping), Enterprising (business and leadership) and Conventional (detailed oriented). It is the predominant one of the six major personality types—or perhaps a combination of two or more types which plays a highly important role in an individual career choice.

**Types of Personality**

**Realistic Personality**

Realistic (Do’er): Prefers physical activities that require skill, strength, and coordination. Traits include genuine, stable, conforming, and practical. Example professions include architect, farmer, and engineer.

- Hands-on people, who enjoy exploring fixing things and making things with their hands.
- Express them and achieve primarily through their bodies rather than words, thoughts, feelings.

**Investigative personality**

Investigative (Thinker): Prefers working with theory and information, thinking, organizing, and understanding. Traits include: analytical, curious, and independent. Example professions include lawyer, mathematician, and professor.

- Persons who live very much in their minds.
- Express them and achieve primarily through their minds rather than through association with people or involvement with things.

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3.3 Source: “Making Vocational choices”, Psychological Assessment Resources Inc.
• Likes to explore through reading, discussing.
• Enjoy complex and abstract mental challenges.

Artistic personality

Artistic (Creator): Prefers creative, original, and unsystematic activities that allow creative expression. Traits include: imaginative, disorderly, idealistic, emotional, and impractical. Example professions include: artist, musician, and writer.
• See new possibilities and want to express them in creative ways.
• Particularly attuned to perception of colour, form, sound, feeling, prefers to work alone and indecently rather than with others.
• Enjoy beauty, variety, the unusual insight, sound, word, texture, and people.
• Need fairly unstructured environment to provide opportunities for creative expression; solve problems by creating something new.

Social Personality

Social (Helper): Prefers activities that involve helping, healing, or developing others. Traits include cooperative, friendly, sociable, and understanding. Example professions include counselor, doctor, and teacher.
• Persons who live primarily in their feelings to others, genuine, humanistic, perceptive, enjoy closeness with others, sharing feeling, being in groups and unstructured setting that allow for flexibility and humanness.

Enterprising Personality

Enterprising (Persuader): Prefers competitive environments, leadership, influence, selling, and status. Traits include ambitious, domineering, energetic, and
self-confident. Example professions include Management, Marketing, and Sales Person.

- Persons, who are thoroughly absorbed in their involvement.
- Achieve primarily by using the skills dealing with people and projects, enjoy money, power and status.

**Conventional personality**

Conventional (Organizer): Prefers precise, rule-regulated, orderly, and unambiguous activities. Traits include conforming, efficient, practical, unimaginative, and inflexible. Example professions include accountant, clerk and editor.

- Persons who live primarily in their orderliness.
- Have strong need to feel secure and certain and to get things finished.
- Most of them probably cannot deal with many areas of interests.

**Test Development**

There are many different types of personality tests. The most common type, the self-report inventory involves the administration of many questions or “items” to test-takers who respond by rating the degree to which item reflects their behaviour. The term item is used because many test questions are not actually questions; they are typically statements on questionnaires that allow respondents to indicate level of agreement (using a Likert-type scale). Although inventories have a clear advantage of ease of administration and can be administered in groups, they suffer from possible “faking” of responses or providing socially desirable responses. Hence to develop a more reliable inventory, safeguards have been introduced to control these
responses. This is done by having check items that are differently worded but are based on the same theme.

**Construction of Tool**

Firstly the contents of the inventory (PI) were selected from the 48 items. The 48 statements related to 6 types of personality identified by John Holland were given to 10 experts with a request to rate each item at a three point scale and to indicate whether the particular statement is related to a particular dimension of personality with reference to MBA students. Only 8 experts expressed their opinion. Those statement items which were considered irrelevant by more than 20% were discarded. Thus only 36 items were retained in the second draft of PI.

**Actual try out**

The preliminary form of inventory was administered on 30 students belonging to management course. The top 27% (8 from above) and bottom 27% (8 from bottom) of scores were separated. It has been found that discriminate power of an item is more accurately determined when item analysis is based on top and bottom 27% rather on any percentage. Only those statements were retained in the final draft which have yielded highly significant value ($P<.01$). On the basis of language ambiguity and suitability only 24 items retained which were rated high. Thus the final form of the inventory has only 24 items. The sequence of dimensions as well as the order in which various items appear in the final form was determined through random selection.
Distribution of the items

<table>
<thead>
<tr>
<th>Type of Personality</th>
<th>Item No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Realistic</td>
<td>1, 14, 17, 23</td>
</tr>
<tr>
<td>Investigative</td>
<td>2, 5, 15, 22</td>
</tr>
<tr>
<td>Artistic</td>
<td>3, 7, 10, 19</td>
</tr>
<tr>
<td>Social</td>
<td>8, 11, 16, 18</td>
</tr>
<tr>
<td>Enterprising</td>
<td>4, 12, 20, 24</td>
</tr>
<tr>
<td>Conventional</td>
<td>6, 9, 13, 21</td>
</tr>
</tbody>
</table>

Reliability of the Test

The concept of reliability occupies a central place in psychological testing. Reliability is the primary requisite of any measuring instrument. Reliability of the inventory has been calculated by split half method. The split is usually accomplished by using the odd-numbered items as one form and the even numbered items as the other. The correlations between these two scores give an estimate of reliability. The correlation coefficient between two halves of the test came out to be 0.59 and reliability coefficient for the full length of the test came out to be 0.69. As the test reliability in excess of 0.50 is respectable for a group test. So, it may be said that the test is reliable.

Validity

Face validity was tested by experts and found adequate. It is evident from the assessment of judges that the items are directly related to the type of personality. The decision to use a particular method of establishing reliability and validity depends on the type of the tool, the characteristics of the sample and the purpose of the tool.
Description of Statements

The statements clearly sound like something that respondent might say or do or think. He/she acts according to his/her expectations and thinking. Each of these statements from serial number 1 to 24 is answerable by making a tick mark in one of the three boxes. There is no right or wrong answers because different respondents react in different manners for the same kind of experience. Every statement has three possible answers; yes, can’t say and no. The respondents have to decide yes or no responses in usual way of acting or feeling and then put a mark in the box. If one find it absolutely impossible to decide put a mark in the box cannot say. Of course, the statements are too short to give all the particulars one would sometime like to have even then the first natural answer is the most appropriate answer. There is no time limit for the completion of the inventory.

Scoring

All the items answerable in yes are assigned with a weightage of 2 scores. Answer is assigned with one score when marked in middle category and zero score for category no.

Interpreting the Personality type

The total score in each type of personality is calculated and the type is determined by highest score. In case of getting equal scores in two or more types of personality, the respondents are placed in mixed type (M). A few respondents scored high in one or two types because they have many characteristics, others who don’t have many strong interests, scored rather low. The management students who score high in enterprising and conventional personality types are most suitable for the professional career.
RISK TAKING MEASURE (RTM)

Measure of Risk

Risk-taking as a research construct has attracted the attention of researchers in various fields and is being used all over the world. The researcher studied different tests constructed by many eminent psychologists.

In 1957 Ziller and Torrance developed a risk-taking scale for devising some of the objective criteria of risk-taking. They used a questionnaire that concerned the past history and self-perceptions concerning fighting, contact sports, taking dares, etc.

In 1960 a comparative approach to measurement of risk taking was taken by Liverant and Scodel. They offered as a choice between outcomes gambles.

Wallach and Kogan (1967) developed the choice dilemma questionnaire, to measure risk taking. This questionnaire was semi-projective in nature and involved 12 hypothetical situations, each involving a central person faced with a choice between two courses of action. One of these courses entailed a greater risk of failure, but was also more rewarding if successful. The subject’s task was to advise the person in each of 12 situations by selecting the probability of success considered sufficient to warrant choosing the risky alternative. Though literally the subjects were supposed to be advising someone else, it was presumed that such advice reflected his tendencies to take risks. The final score was based on his average response. The high risk-taker, according to this test, was one who advised going for a specified gain at the lowest probability of success.
Slovic (1967) administered a battery of nine different measures of risk-taking to a group of subjects.

Jackson and Vidmar (1972) developed a four-dimensional risk-taking inventory to measure physical, social, ethical and monetary risk-taking. To avoid a possible bias associated with a particular instrument, a method of measurement and a potential confounding situation, they constructed four sets of measures varying widely in format but each tapping one of the four facets of risk-taking behaviour. These four instruments were: 1. self-rating, 2. situational dilemmas, 3. personality inventory, and 4. vocational choice questionnaire. The scales were collated into a booklet and administered to 137 subjects comprising 47 male and 46 female college students. The average predicted validity value was .42.

Bhawalkar (1992) found Guilford’s meaning of the term risk-taking ability suitable for the development of a verbal measure of risk-taking ability. The attributes of risk-taking ability considered for writing the items were:

- To take exploration;
- To take personal risk;
- Not to avoid monotony;
- To inquire into areas that do promise quick results and immediate contribution to knowledge; and
- To opt for a situation where the chances of failure are great.

In many situations, a person is confronted with two or more alternative courses of action—one is safe but less rewarding and the other more risky but more rewarding too. In the extensive body of literature risk-taking has generally been
conceived as a unitary dimension (monetary risk). After re-examining literature on risk-taking it was found that there are four major categories of situations in which risk taking may vary. An operational definition for each type of risk was established as a guide to the construction of the test-

1. **Physical risk-taking** - Doing adventurous things and taking chances even in the face of physical danger.

2. **Monetary risk-taking** - Taking chances where financial gain is involved such as investments, stocks or gambling, also in terms of job security or other forms of speculation on one's own future.

3. **Social risk-taking** - Involving situations in which the subject's esteem in the eyes of others is at stake, willing to express oneself freely.

4. **Ethical risk-taking** - Willing to one’s own or society’s standard when compromise on circumstances warrant it, protect a friend or perhaps even for a personal gain.

**Construction of the Tool**

The risk taking measure (RTM) used in this study is based on above categories and a verbal measure of risk taking constructed and standardised by N.P Chaubey (1985). It is a semi-projective measure of risk-taking. It consists of 4 items. The items are related to problems such as heart operation, growing high yielding seeds, changing old job and join the new one, and education. Each item is a description involving risk in different situation. In each situation a person is confronted with two alternative courses of action—one safe but less rewarding and the other more risky but more rewarding too. The subject is asked whether he would advise the person to opt for safe and more risky alternative. In order to know minimum level of probability of success for which he would recommend him to
choose more risky alternative, different probabilities of success of the risky course of action are provided below each of the situations. The probabilities listed are 1 in 10, 3 in 10, 5 in 10, 7 in 10 and 9 in 10, and 10. There is an additional response category in which the subject has option to refuse to recommend to risky alternative even if its success is almost certain. It is assumed that in recommending the risky alternative, the subject is actually expressing his own attitude towards the problem, the way he would act in similar circumstances. Usually people are motivated not to put themselves at risk, especially when the outcomes are important.

In developing the risk measure the care is taken of the fact that subject understood each situation and response categories clearly. In order to do this each situation is described in a most natural way. The situation relating to the problems such as education, service, and medical treatment were framed. Initially eight items were selected. Experts were requested to identify the degree of risk reflected in situations. The object was to validate consensus about the items. Two items were dropped and six items were retained for the inclusion in the preliminary form of try out. This was done to reduce the length of the measure and to avoid repeating of similar contents.

Final try out was carried out on 30 students studying in MBA final year. After the try out total scores obtained by thirty management students (try out group) were arranged in descending order and the scores of top and lower twenty seven percent were selected for calculation of the value. The performance of the upper group was compared with lower group, 0.01 level of significance was fixed as a criterion for retraining the items. Thus four items were finally selected to develop a short and simple measure for the study. Items were also reframed in the light of
information gathered during preliminary phase of the study. The instructions were clear and concise. A copy of the final tool used is annexed at the end.

**Scoring Procedure**

The probability level is the unit of measurement. The subject score on an item is the level of probability chosen by him for the more risky alternative. If the subject chooses the risky alternative on the probability level of 1 in 10, then he gets score of 1 and he chooses the probability level of 5 in 10 then the score would be 5. Thus, scores given for the probabilities 1 in 10, 3 in 10, 5 in 10, 7 in 10, 9 in 10 are 1, 3, 5, 7, 9 respectively. For the final category in which the subject has option to refuse to recommend the more risky alternative no matter what the chances of success are, a score of 10 is given. The total score of the subject on the test is equal to the sum of scores on all items which could range from minimum 4 to maximum 40. The interpretation is done on the basis of high and low scores. The low scores imply high risk and high score represents low risk. The highest risk taker is one who advise for selecting a specified gain at a lowest probability of success.

**Reliability**

The split-half reliability coefficient is 0.88. It is clear that measure is fairly consistent and stable.

**Validity**

Validity only set items were retained about which the experts had unanimous opinion. Thus the test has content and face validity.
EMOTIONAL INTELLIGENCE SCALE (EIS)

Three different models are available for the assessment of emotional intelligence: a five component EQ-i model, an Emotional Competency Inventory (ECI) model developed by Goleman and the Mayer Salovey-Caruso Emotional Intelligence test (MSCEIT). These tools are listed below:

<table>
<thead>
<tr>
<th>Tool Name</th>
<th>Basis of Measure</th>
<th>Scale of Measurement</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mayer-Salovey- Caruso Emotional Intelligence Test(MSCEIT)</td>
<td>Total EI score  2 area scores  15 main scores  4 branch scores  8 tasks scores  3 supplemental scores</td>
<td>Ability based</td>
<td>141 items</td>
</tr>
<tr>
<td>Baron Emotional Quotient-EQ-i</td>
<td>5 composite scales  Interpersonal scales  Intrapersonal scales  Adaptability scales  Stress Management scales  General Mood scales</td>
<td>Self-report</td>
<td>133 items</td>
</tr>
<tr>
<td>Emotional Competency Inventory</td>
<td>Full spectrum EI competencies</td>
<td>Competency based</td>
<td>72 questions</td>
</tr>
</tbody>
</table>

The above tools were not used in this study considering the suitability, their ease of use and availability to the researcher.

Development of the Scale Emotional Intelligence has been measured with emotional intelligence scale (EIS). Emotional scale is based on the tool developed by Hyde, Pethe and Dhar. The first draft of 34 items was given to 10 experienced persons with a request to indicate whether a particular item is related or not to a particular dimension of EIS and for management students. The items which were considered not suitable by more than 30% were discarded. Thus only 26 items were retained.
The EIS of 26 items were distributed 30 MBA students. The object of this testing was to know the suitability of the items, difficulties in the administration and scoring. Finally 20 items retained were significantly correlated with the total score. Thus the items of the tools are homogenous, all making significant contribution to the total score. Thus the final draft consists of 20 items assessing ten factors:

**Reliability**

The split-half reliability coefficient is 0.88. The high reliability coefficient of correlation shows that the present tool is a reliable device to assess the emotional intelligence of management students.

**Validity**

The scale has high content. It is evident from the assessment of experts that items of the scale are directly related to the concept of emotional intelligence.

**Factors of Emotional Intelligence**

A. **Self-awareness** This factor highlights that an individual knows about himself which helps him in facing the situation and is measured by item 4 ‘I can continue to do what I believe in, even under severe criticism’ and item 12 ‘I believe in myself’.

B. **Empathy** This factor mentions that an individual sees others problem as though he is facing that problem himself and is measured by item 7 ‘I pay attention to the worries and concerns of others’, item 8 ‘I can listen to someone without the urge to say something’ and ‘I am able to stay focused under pressure’.
C. **Self motivation** This factor highlights that an individual analyze the situation and then go for action. This factor is measured by items 3, 5 and 6. These items are “I am able to make intelligent decisions using a healthy balance of emotions and reason;” “I am able to assess the situations and behave” and “I can concentrate on the task at hand in spite of disturbance”.

D. **Emotional stability**: This factor mentions that an individual is emotionally stable and an open minded person. This factor is measured by items 10, 16 and 18. These are: “I don’t mix unnecessary emotions with issues at hand;” “I am comfortable and open to novel ideas and new information”, and “I am persistence in pursuing goals despite obstacles and setbacks”.

E. **Managing relations**: This factor highlights that an individual has a futuristic approach in dealing things. This factor is measured by items 1 and 11. These are “I can encourage others to work even when things are not favorable”, and “I can see the brighter side of my situation”.

F. **Integrity** This factor highlights that an individual has a positive thinking in life. This factor is measured by item 17 “I pursue goals beyond what is required and what is expected of me”.

G. **Self-development** This factor highlights an individual’s belief that there is scope for self-development. This factor is measured by the items 19 and 20 “I am able to identify and separate my emotions” and “I feel that I must develop myself even my job does not demand it”.

H. **Value orientation**: The factor states that an individual’s priority is honesty and integrity. This factor is measured by item 14 “I am able to maintain the standards of honesty and integrity”.
I. **Commitment:** This factor identifies that an individual is dedicated towards work. The factor is measured by item 15 “I am able to meet commitments and keep promises”.

J. **Altruistic behaviour:** This factor highlights that an individual inspire others and can handle conflicts around him. The factor is measured by the items 2 and 9. The items are “I am able to encourage people to take initiative” and “I can handle conflicts around me”.

**Instructions for Administration**

- The scale is self-administering.
- The instructions printed on the response sheet are sufficient to take care of the statements that are given.
- There is no time limit for completing the scale.
- All the statements have to be responded to and no statement should be left unanswered.
- There is no right or wrong answer of the statements. The statements are designed to understand the difference in individual reactions to various situations. The scale is meant to know the difference between individuals and not meant to rank them as good or bad.
- Before administering the scale sincere cooperation is sought from the respondents.

**Scoring**

- Manual scoring is done conveniently hence no scoring key is provided.
- Each statement is scored 5 for strongly agree, 4 for agree, 3 for neutral, 2 for disagree and 1 for strongly disagree.
Limitations of the scale

In all the tests of this nature, the subjects do manage to get some insight into what the purpose is. As such, there is always the factor of social desirability and faking.

Norms of the scale

The norms regarded as reference points for interpreting the emotional intelligence score. Individuals with high score are considered to have high level of emotional intelligence and are likely to be high performers.

PERSONAL DATA BANK (PDB)

To tap the demographic profile of the respondents Personal data bank (PDB) developed by the researcher is used as data collection tool for obtaining personal information and perception of the MBA students about academic and other aspects.

BRIEF HISTORY OF THE UNIVERSITIES

Data related to the universities is collected from the respective institutions and their websites.

STATUS OF MANAGEMENT EDUCATION IN INDIA

Present scenario, trends and future of management education is collected through review of existing literature and material available from Journals, Magazines and other sources.

3.11 DATA COLLECTION

a) Sources of Data: Primary Data- The Final-Year students studying MBA course of eight Universities located at Jaipur are the respondents Secondary Data-Websites, Journals and other sources.
b) **Nature of Data** – The data collected through the tools are quantitative as well as qualitative.

### 3.12 PROCESSING OF DATA

The data collected are processed by allocating scores to items in the tools referred as PI, RTM and EIS. For the purposes of confidentiality, the names of the universities are omitted. Instead, the respondents are referred to as groups A, B, C, D, E, F, G and H in the tables where the results of the respondents are compared in an attempt to identify similarity and differences. For data entry, the Statistical Package for the Social Sciences (SPSS) programme used initially, each response was entered into the database as it was. After recording the necessary data, tests were run on the data.

### 3.13 STATISTICAL TECHNIQUES

Statistics makes our observations useful, precise and convenient. In order to analyze the data and test the hypotheses besides general descriptive statistics the following statistical techniques are used-

1. One-way ANOVA to verify the hypotheses and to test the significance of difference among groups. Analysis of variance (ANOVA) allows us to test whether the differences among two or more groups are significant or not. ANOVA consists of three basic steps (1) estimating the variance among the sample means (2) estimating the variance that exists within the sample and (3) accepting the null hypothesis if the two estimates are equal or else rejecting the null hypothesis. The decision regarding acceptance or rejection of null hypothesis is based on the value of F-ratio.
F ratio = \frac{\text{Estimate of population variance based on between samples variance}}{\text{Estimate of population variance based on within sample variance}}

2. t-test is used to examine whether two groups are significantly different from each other.

\[ t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\left(\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}\right)}} \]

Where \( x \) = sample mean, \( s \) = sample standard deviation, \( n \) = population size

3. Pearson’s method for calculating correlation. Correlation is the degree of relationship between two variables. The measure of correlation is called coefficient of correlation. Of the several mathematical methods of measuring correlation, the Karl Pearson’s method is popularly known as Pearson’s coefficient of correlation.

The formula for computing the correlation coefficient is given by:-

\[ r = \frac{\sum xy}{\sqrt{\sum x^2 \times \sum y^2}} \]

4. Chi-square test when individuals in two groups have been measured by using a nominal scale, the appropriate test is chi-square test. It is used when data consist of frequencies. Chi-square goodness of fit test is used on different levels of a single categorical variable to verify whether the difference between the proportions representing more than two samples is significant or not.

\[ \chi^2 = \sum \frac{(O - E)^2}{E} \]

Where \( O \) = observed frequency, \( E \) = expected frequency

This chapter describes the design of the study and the instruments of the research.