Chapter 2

REVIEW OF RELATED LITERATURE

“Practically all human knowledge can be found in books and libraries. Unlike other animals that must start a new life with each generation, man builds upon the accumulated and recorded knowledge of the past”. - John W. Best., (1985)

Review of related literature implies locating, tracing and evaluating reports of research findings as well as reports of casual observations and opinions that are related to the individuals, and planned research projects.

The collection of available literature helps to uncover a number of studies related to the problem under study. Unless the areas of work that others have completed are ascertained and the areas left unexplored are identified to focus the light on those areas by the researchers.

Review of researches is very essential for an investigator to know the area in which research work is needed and for determining and describing the different dimensions of problems. This may provide scope for drawing a base for the conceptual framework for the proposed study.

This chapter was an attempt to cover the studies that were undertaken in the dimension of sport achievement motivation, aggression and anxiety. This chapter includes the doctoral and
institutional level of research studies, which are available for reference to the study area.

Anthony Amrose, J., and Thelma Horn, S., (2000) studied on “Intrinsic Motivation: Relationships With Collegiate Athletes’ Gender, Scholarship Status and Perceptions of Their Coaches’ Behavior”. The purpose of this study was to examine the relationships among athletes in-trinsic motivation (IM), gender, scholarship status, perceptions of the number of their teammates receiving scholarships, and perceptions of their coaches behaviour. Male and female college athletes (N=386) from a a variety of division I sports completed a series of paper and pencil questionnaires. Multivariate analysis revealed that (a) scholarship athletes reported higher levels of IM than did nonscholarships athletes, (b) male athletes reported higher IM than did female athletes, and (c) perceived coaching behaviours were related to athletes IM. Specifically, athletes with higher IM perceived their coaches to exhibit a leadership style that emphasized training and instruction and was high in democratic behaviour and low in autocratic behaviour. In addition, athletes with higher levels of IM perceived that their coaches provided high frequencies of positive and informationally based feedback and low frequencies of punishment oriented and ignoring behaviours. Results are discussed in terms of cognitive evaluation theory.
Amorose A. J.; Horn T. S. (2001) in their article on “Pre- to Post-Season Changes in the Intrinsic Motivation of First Year College Athletes: Relationships with Coaching Behavior and Scholarship Status”. This study examined whether the intrinsic motivation levels of first-year college athletes changed from pre- to post-season as a function of their scholarship status or their perceptions of their coaches' behavior. Division I college athletes (N = 72) completed questionnaires assessing their intrinsic motivation at the beginning and end of their first year of participation. They also reported their scholarship status and their perceptions of their coaches' behaviors over the season. Contrary to predictions, results revealed that neither scholarship status nor time affected the athletes' level of intrinsic motivation. Strong support for the relationship between athletes' perceptions of their coaches' behavior and changes in athletes' level of intrinsic motivation over the season, however, emerged. Increases in athletes' level of intrinsic motivation were associated with athletes' perceptions that their coaches exhibited high frequencies of training and instruction behavior, and low frequencies of autocratic behavior and social support. Results are discussed in relation to cognitive evaluation theory and previous research on intrinsic motivation.
Nathalie Koivula, Peter Hassmén, and Johan Fallby (2002) studied on “Self-esteem and perfectionism in elite athletes: effects on competitive anxiety and self-confidence”. The setting of high standards is an integral part of elite sports, and often beneficial for the athlete's performance. However, individuals who are characterized by frequent cognitions about the attainment of ideal, perfectionistic standards, have been shown to be likely to experience heightened levels of anxiety, due to discrepancies between ideal and current self/situation. This could of course be detrimental to their sport performance. The aim of the study was to investigate the relationship between different patterns of perfectionistic dimensions and sport-related competitive anxiety and self-confidence, for elite athletes with different self-esteem strategies. The results revealed that the relation between self-esteem and perfectionism differs depending on which dimensions of self-esteem and perfectionism that are being considered. Athletes with a high self-esteem based on a respect and love for themselves had more positive patterns of perfectionism, whereas athletes who have a self-esteem that is dependent on competence aspects showed a more negative perfectionism. Further, negative patterns of perfectionism were in the present study related to higher levels of cognitive anxiety and lower levels of self-confidence. Hence, it seems that sport related anxiety is positively associated to certain patterns of perfectionism, patterns that are more common in individuals with specific self-esteem strategies.
Maity & Samantha (2003) conducted a study on survey of physical fitness for fifth grade boys and girls. This study had been conducted over a year on 2226 boys and 2000 girls of fifth grade from several districts of West Bengal. Each subject was tested on Kraus-Weber and Oregon Motor fitness test to assess minimum muscular strength and Motor fitness respectively. Data collected from survey on Kraus-Weber test for minimum muscular strength was analyzed on (i) Percentage of passing and failure; (ii) Percentage of muscle weakness and (iii) Percentage of flexibility failure. The survey results revealed that the percentage of passing and failure of boys and girls were identical whereas the boys were superior in muscles strength to girls and the girls were superior to boys in flexibility measures. Results of the survey on motor fitness as assessed on Oregon Motor fitness test revealed that the boys were better than girls in leg strength, power, abdominal strength and endurance. Based on the scores for motor fitness collected from the survey on Oregon Motor fitness test percentile scales for boys and girls were constructed. From this percentile scales and with certain guide lines separate norms for fifth grade boys and girls were developed.

Stuart J.H Biddle and C.K.John Wang (2003) in their journal article on “Motivation and self-perception profiles and links with physical activity in adolescent girls”. Research shows a decline in participation in physical activity across the teenage years. It is important, therefore, to examine
factors that might influence adolescent girl's likelihood of being physically active. This study used contemporary theoretical perspectives from psychology to assess a comprehensive profile of motivational and self-perception variables in 11-16 year old English girls ($n=516$). A cross-sectional design was employed. Cluster analysis was conducted to (a) map cluster profiles and (b) test whether clusters differed in physical self-worth, global self-esteem, and physical activity. Results revealed a five-cluster solution depicting 40% of the sample as moderately motivated, 30% lowly motivated in two clusters, and 30% highly motivated, also in two clusters. However, differences between clusters on physical activity were quite small. Results show potential areas for intervention to enhance the motivation of adolescent girls for physical activity.

**Gupta and Vandana (2004)** studied on “Psychological Profiles of National Women Football Players”. The main objectives of the study were (1) To compare the status of senior national, junior national and international women football players on the selected psychological variables; (2) sketch group profiles of international, senior national and junior national women football players, and (3) to draw psychological profiles of individual women football international players. Method: The sample of the present study comprised of 325 female national football players of India. Keeping in view the purpose of the study they were divided into three groups senior national (N=160), junior national
(N=150) and international (N=15) female football players. Four psychological variables associated with performance were Sport Competition Anxiety, Self-confidence, Achievement Motivation and Mental Toughness (consisting of four different categories namely: Handling pressure, Concentration, Mental rebound and Winning attitude). The data collected through the administration of four questionnaires, i.e. the Sports Competition Anxiety Test Questionnaire, Self-confidence Inventory, Sport Achievement Motivation Test and Mental Toughness Questionnaire. The data collected from those senior national and junior national players who reached in the quarter final league of 11th Women National Football Tournament held at Chennai from 8th to 24th June 2003 and 3rd Girls U-19 Football Tournament held at Haldwani from 26th September to 8th October 2003. The statistical methods like One-way analysis of variance and F-test, used for statistical analysis. Findings: (1) Senior national women football players had medium anxiety, medium self-confidence, moderate achievement motivation and average level of mental toughness. (2) Junior national women football players had medium anxiety, medium self-confidence, moderate achievement motivation and low level of mental toughness. (3) The level of anxiety of international women football players was significantly low as compared to the junior national women football players. (4) International women football players were significantly higher in self-confidence than the junior national women football players. (5) There was no significant difference in achievement
motivation of international, senior national and junior national women football players. (6) International women football players had significantly high level of mental toughness as compared to senior and junior national women football players. The study cites one hundred forty six references.

Chow, Frey, Cheung and Louie (2005) conducted a study to compare health-related physical fitness in Hong-Kong youth with and without intellectual disability (ID). A stratified, random sample of 457 youth with mild ID (272 boys, 185 girls, CA 6-18 years) completed 6/9 minute-run, sit-up, sit and reach, and sum of skin fold evaluations. Fitness data for youth without ID were obtained from previously established norms. MANOVA (Age x gender) and trend analysis were used to examine fitness in youth with ID. Sample tests were used to compare fitness performance between youth with ID, and established norms for youth without ID. Males with ID performed better on the 6/9-minute run (P=0.03), sit-ups (P=0.02) and had lower skin, fold measures (P=0.01) than females, while females performed better on the sit and reach (P=0.01) than males. The youth with ID demonstrated lower scores on the 6/9-minute run compared to those without ID (P=0.04), but performance on other test items varied according the age and gender. There were few differences in physical fitness between Hong-Kong youth with and without ID; however, both groups appeared extremely unfit compared to peers in other developed countries.
Dorothee Alfermann, Martin J. Lee and Sabine Würth (2005) studied on "Perceived Leadership Behavior and Motivational Climate as Antecedents of Adolescent Athletes’ Skill Development". In two studies, the relationship between adolescent athletes’ skill development and perceived coach behavior as well as motivation climate was investigated. In Study 1, 119 (61 male, 58 female) competitive swimmers from various clubs with a mean age of 12.5 years responded twice with a one year interval to the Leadership Scale for Sports and the Perceived Motivational Climate in Sport Questionnaire. Skill level was estimated from performance criteria like level of competition, and years of practice. In Study 2, 212 junior athletes (136 male, 76 female) of individual and team sports with a mean age of 15 years completed the same questionnaires twice within 4 months. Skill level was estimated by the coaches on several rating scales. Contrary to expectations and research, coach behavior in Study 1 was perceived similarly across varying skill levels. Longitudinal data showed a positive relationship between perceived coach behavior (instruction and positive feedback) and swimmers’ skill development. In Study 2, opposite patterns of relationships for individual and team sports were found. Skill development of team sport athletes was predicted by higher perceived social support and less instruction, whereby individual sport athletes’ skill development was predicted by less perceived social support, more instruction, and higher mastery climate. Both studies point to the
importance of coach behavior for skill development of athletes, but the type of sport may modify the relationship.

James Hardy, Mark A. Eys and Albert V. Carron (2005) in their study on “Exploring the Potential Disadvantages of High Cohesion in Sports Teams”. In the present study, a heterogeneous sample of 105 athletes (mean age = 21.4 years) was used to gain insight into the potential negative consequences of high team cohesion. Athletes were asked open-ended questions relating to the potential disadvantages of high task and high social cohesion. It was found that 56% of athletes reported possible disadvantages to high social cohesion, whereas 31% of athletes reported possible disadvantages to high task cohesion. Furthermore, data analyses revealed multiple dimensions of negative consequences for both high task and social cohesion. More specifically, analysis of responses revealed both group- and personal-level consequences. The findings contrast with the popularly held view that high cohesion is always beneficial for teams and team members. It was suggested that future research assess the prevalence and importance of the disadvantages of high cohesion.

Amanda Alexander (2005) in study on “Coaching Influences on Motivation, Stress, and Personality as Perceived by Student Athletes “, Much research indicates that the coach-athlete relationship is one of the most crucial determinants of athlete stress and motivation levels. The purpose of this study was to examine the relationship between student
evaluations of coaching characteristics, specifically likeability and technical expertise, student-athlete motivation, perceived stress, and achievement striving. One hundred and five high school student-athletes completed measures of personality, achievement striving, stress, and motivation as well as two single-item ratings of coaching likeability and technical expertise. The results indicated that significant relationships existed between coaching technical expertise and emotional stability, interest/enjoyment, competence, and social motivation. Additionally, higher ratings of coach like ability were related to lower levels of perceived stress. These findings are congruent with prior research emphasizing the impact of coaching on student-athletes. Further research should attempt to more narrowly define the particular coaching traits related to increased motivation and performance, including techniques which may aid in this process.

Afranio de Andrade Bastos, Alfonso Salguero, Rene Gonzalez-Boto, and Sara Marquez (2006) in their study on “Motives for Participation in Physical Activity by Brazilian Adults. Perceptual and motor skills”: The present investigation examined the validity and reliability of a questionnaire which assessed motives of Brazilian adults for participation in physical activities, compared motives for participation in walking and fitness programs, and examined differences by sex, age, and education. Participants were 100 men and 138 women, ages 16 to 60 years ($M=30.5$, $SD=11.4$). Factor analysis identified four factors
which were fairly consistent with previous research. Improvement in physical appearance and enjoyment were rated significantly more important reasons for participants in fitness programs than for walkers. Men were more motivated by social experience than women. Young adults rated importance lower in health and fitness and rated enjoyment, social experience, and improvement in appearance of higher importance. Health and fitness were considered more important by participants with more education. These results are consistent with previous research on the factors underlying motives for regular exercise and support the importance of considering differences associated with culture.

Sarah J. Donaldson, Kevin R. Rona (2006) in article on "The effects of sports participation on young adolescents' emotional well-being". Exercise and sports participation has been established as an important factor in reducing the risk of many physical problems such as cardiovascular disease, high blood pressure, and obesity (Schiffman, 1994). Current research suggests that sustained exercise may also enhance psychological or emotional well-being as it is often called, and therefore can be used as an additional therapy in the treatment of some psychological disorders (Pelham, Campagna, Ritvo, & Birnie, 1993). The most consistent message derived from the adult literature is that, kept within healthful limits, there is often a positive relationship between exercise and emotional well-being, generally confirming the "feel good"
effect often reported by regular exercisers (Kremer & Scully, 1994). The literature in the area of sport, exercise, and emotional well-being has focused primarily on the relationship between exercise, sports participation and anxiety, depression, self-esteem, and more recently on psychosocial stress (Biddle, 1992). Since these are among the most common problems brought to the attention of mental health professionals, the idea that exercise and sports participation may alleviate some emotionally related problems and improve self-concept is appealing. Exercise has been found to improve mood in adults including alleviating many forms of depression (Schiffman, 1994; Cox, 1994; North, McCullagh, & Tran, 1990; Weinberg & Gould, 1995). Generally, the literature also supports a relationship between increased exercise and reduced anxiety in adults (King et al., 1993; Petruzzello et al., 1991). While research and meta-analytic findings of a beneficial relationship between anxiety and exercise, the evidence is not as strong as those claiming the benefits of exercise and sport on depression. It appears that aerobic exercise is more beneficial if one is anxious but for depression both aerobic and anaerobic exercise seems similarly effective.

Yngvar Ommundsen (2006) reviewed on “Pupils' self-regulation in physical education: the role of motivational climates and differential achievement goals”. This study examined the relationship of motivational climate and differential achievement goals to meta-
cognitive self-regulation, regulation of effort, help-seeking and self-handicapping in physical education (PE). The sample consisted of 273 pupils (boys $n = 125$; girls $n = 148$) attending 10th grade PE classes in Norway. Both motivational climates and achievement goals revealed expected patterns of relations to self-regulation indices. Direct climate influences as well as goal-mediated influences were observed as illustrated by a direct positive influence of a mastery climate on meta-cognitive strategy use and effort regulation and by a positive performance climate effect on self-handicapping, mediated by a performance-avoid goal. A performance-avoid goal also moderated the influence of a mastery climate on effort regulation. Results lend support to the trichotomous achievement goal perspective by showing a) differential self-regulation influences of performance-approach and performance-avoid goals and b) proximal goal influences to be mediators in relations between distal climate influences and pupils’ self-regulation.

Yadav, Priyanka (2006) studied on “Assessment of Specific Psychological Skills of Indian Badminton Players”. The main objectives of the study were (1) To assess specific psychological skills of Indian badminton players (both male and female) of different levels of achievement, i.e. International, Senior, Junior and Sub-junior National; (2) to investigate the relationship between specific psychological skill scores and ranking points of Indian badminton players. Method: The
sample of the present study comprised of 173 male and 152 female Indian badminton players. Keeping in view the objectives, the players were categorised into four main groups. In men/boys section: International (N=26), Senior national (N=33), Junior national (N=56) and Sub-junior national (N=58) and in women/girls section accordingly International (N=16), Senior national (N=42), Junior national (N=44) and Sub-junior national (N=50). The data were collected from International and Senior national Men and Women badminton players who participated in Senior National Badminton Championship held at Jamshedpur, Jharkhand from 31st January to 6th February 2005. The data from Junior and Subjunior National boys and girls players was collected during Junior National Badminton Championship held at Panjim, Goa from 31st October to 8th November 2004, and Sub-junior National Badminton Championship held at Chandigarh from 10th to 16th October 2004 respectively. Athletic Coping Skills Inventory - 28 (ACSI-28) as suggested by Smith et. al. was administered to the players. One-way analysis of variance, Scheffe’s Test Product Moment Correlation were applied for statistical analysis. Findings: (1) International badminton players had higher mean values than senior, junior and sub-junior national men/boys and women/girls in specific psychological skills and its sub-factors except in goal setting/mental preparation in men/boys badminton players. (2) Senior national men/women badminton players had higher mean values than junior and sub-junior boys and girls in specific psychological skills and its sub-factors. (3) Junior
boys/girls national badminton players had higher mean values than sub-junior boys and girls in specific psychological skills and its subfactors. (4) Significant differences were found among international and junior national, international and sub-junior national in freedom from worry, international and sub-junior national in coachability, and international and sub-junior national, senior and sub-junior national in specific psychological Skills in men/boys badminton players. (5) Significant differences were found among international and senior national, international and junior national, international and sub-junior national and senior and sub-junior national in confidence and Achievement Motivation, international and junior national, international and sub-junior national and senior and subjunior national in specific psychological skills in women/girls badminton players. (6) Significant relationship was observed on Peaking under pressure, concentration, coachability and specific psychological skills in senior national men and freedom from worry and specific psychological skills in senior national women badminton players with ranking point. (7 ) Significant relationship was observed on confidence and achievement motivation and specific psychological skills in junior boys and concentration and specific psychological skills in junior girls with ranking points. (8) Significant relationship was observed on confidence and achievement motivation, coachability and specific psychological skills in sub-junior boys and freedom from worry and specific psychological skills in sub-junior girls with ranking points. The study cites ninety four references.
C.K. Wang, B.S. Lim, N.G. Aplin, Y.H.M. Chia, M. Mcneill and W.K. Tan (2008) reviewed on “Students’ attitudes and perceived purposes of physical education in Singapore: Perspectives from a 2 × 2 achievement goal framework”. The aim of the present study was to re-examine the relationships between achievement goals and perceived purposes of PE, perceived motivational climates, attitudes towards PE teachers and affective outcomes using the 2 × 2 achievement goal framework. Questionnaires were completed by 493 secondary school students (222 males, 262 females, 9 missing) in Singapore. Cluster analysis revealed three distinct clusters that differed significantly in their achievement goals profiles. One cluster consisting of high scores on mastery approach, mastery avoidance and performance avoidance achievement goals was linked to the most positive set of characteristics and outcomes, while the cluster with low achievement goals was linked to most negative characteristics and outcomes. There was another cluster with moderate levels of mastery approach that had relatively positive perceptions and attitudes towards PE. The findings of these three goal profiles provide insight and add knowledge to the existing literature. Research that ignores the independence of the 2 × 2 achievement goal framework may risk making spurious conclusions.
Wannee Jermsuravong, Naruepon Vongjaturapat and Fuzhong Li (2008) in their journal article on "The Influence of Exercise Motivation on Exercise Behavior among Thai Youth". Getting involved in exercise is known for both its physiological and psychological benefits. Data have linked exercise or physical activity to decreased risk of cardiovascular disease, reduction of blood pressure, assistance in weight management, mood improvement and mortality rate reduction (American College of Sport Medicine [ACSM], 1990; Blair, 1993). Exercise or physical activity also reduces the risk of developing diabetes and some forms of cancer, promotes healthy muscles, bones and joints (U.S. Department of Health and Human Services, 1996). Psychologically, exercise has also been associated with reduced state anxiety, reduced tension, moderated depression, and an increased sense of well-being (ACSM, 1990; Byrne and Byrne, 1993; Yeung, 1996). However there is still a large percentage of individuals who do not participate in regular exercise at any of the various ranges of age and intensity level. (National Coalition for Promoting Physical Activity, 1996; Weinberg and Gould, 1995), and this is also the case in Thailand (National Statistical Office of Thailand, 2000). A major question regarding how to motivate more people to get involved in exercise for health still remains and is the main interest/responsibility for people in the field of exercise psychology. To increase the number of people getting involved in regular exercise, we should promote this activity as early as possible. Exercise or physical activity during childhood and adolescence is the predictor of physical activity in
adults (Coakley and White, 1992; Risto et al., 2000). We therefore need to understand those young people’s reasons for getting involved in exercise. The understanding of factors that motivate people to engage in exercise is an important part of research agenda, in particular, the motivation factors among different age groups of people (Campbell et al., 2001). Motivation is a psychological mechanism.

Mandeep Singh, Nishan Singh Deol and Sukhdev Singh (2008) conducted a study of selected Health related fitness components of High School Boys in Kerala, Madhya Pradesh, Punjab, Rajasthan, Maharashtra and Jammu and Kashmir. In this study randomly selected 300 untrained High School boys from different states namely Kerala, Madhya Pradesh, Punjab, Rajasthan, Maharashtra and Jammu and Kashmir. From each state at least two schools were selected and from each school unequal numbers of students were selected depending on the strength of the school. The data pertaining to selected health related fitness variables such that a weight, height, cardiovascular efficiency, flexibility, abdominal strength endurance and skinfold measurement of different sites were collected by administrating the appropriate tests and measurements procedures and the tests involves proper administration and measuring of body stature (height, body weight), body fat (skinfold measurement), cardio-respiratory endurance (HST), flexibility (Wells and Dillon sit and reach test), abdominal endurance (sit-ups). Mean, standard deviation and percentiles were computed for each health
related fitness components of high schools boys of various schools in
given five states of India. Most of the high school boys selected for the
study had not performed well in field tests. Subjects of this study did not
having any compulsory physical education programme. Majority of the
high school boys involved in the study from Kerala, Madhya Pradesh,
Punjab, Rajasthan, Maharashtra and Jammu & Kashmir were found to
have weak rectus abdominal muscles, low cardio vascular fitness, more
body fat and average flexibility.

Mark W. Aoyagi, Kevin L. Burke, Barry Joyner, Charles J. Hardy, &
Michelle S. Hamstra (2009) studied on “The Associations of Competitive
Trait Anxiety and Personal Control with Burnout in Sport”. The
incidence of athlete burnout among competitive athletes from youth,
high school, and collegiate age groups as well as the associations
between competitive trait anxiety and personal control with athlete
burnout were explored.

study on “A comparative study of sports competition anxiety Between
male and female weight lifters of Manipur”. Anxiety is an arousal state of
mind which has both negative and positive effects on sports
performance. The purpose of the study was to compare the level of
anxiety between male and female national weight lifters of Manipur.
Forty (40) weight lifters (male = 20, female = 20) who have participated
in the national championships were taken as the subjects. The age of
the subjects ranged from 17 to 25 years. To find out their level of anxiety, Sports Competition Anxiety Test (SCAT) developed by Martens (1977) was administered on the subjects. T-test was used to analyze the data. Results of the study revealed no significant difference between male and female national weight lifters of Manipur with regard to sports competition anxiety.

Siva Sankar Reddy Mudimela (2010) studied on “Impact of level of participation on aggression, anxiety, achievement motivation and performance among soccer players”. An attempt has been made to study the impact of level of participation on psychological factors such as aggression, anxiety, achievement motivation and performance. Six hundred and twenty-five soccer players representing three different levels that is, inter-university, inter-district, inter-collegiate, constituted the sample of the study. Sports Competition Anxiety Test (Marten 1977), Aggressiveness Questionnaire (Smith 1973), Sports Achievement Motivation Test (Kamalesh 1983) were administered to assess anxiety, aggression and achievement motivation, respectively. The performance of soccer players was assessed by using rating scale (rating scale for evaluation of playing ability by experts for soccer players (Pown Radha 1996). One-way analysis of variance and stepwise multiple regression analysis were employed to analyse the data. Significant differences were found among three levels of participation with regard to aggression achievement motivation and performance only. Aggression and
achievement motivation contributed significantly to performance whereas anxiety is found to have negative impact on the performance.

**Conclusion:**

The review of related literature presents a plethora of researches presently being conducted in India and Abroad. Based on the research studies, reported the researcher felt that there is a need to conduct a research study on the Sport Achievement Motivation, Aggression and Anxiety among Inter Collegiate Players of Acharya Nagarjuna University of Andhra Pradesh. In the context of greater appreciation of games and sports in the country and effective encouragement of governments, public and social organizations, parents and teachers, the success of players in any game/sport depends not only on the physical ability of the player but at the same time on factors like Achievement Motivation, Aggression nature of the player and Anxiety regarding the result and performance. Hence this unique study had been undertaken so that it may throw some light for the people involved in games and sports. Keeping in view of the methodologies presented in the above studies, the methodology followed for the research is chosen and presented in the next chapter.