CHAPTER II
REVIEW OF RELATED LITERATURE

Various researchers have studied the different variables that affect academic achievement, the most important among being (i) pupil-related variables, (ii) Teacher-related variables, (iii) Teaching conditions (iv) Organisational climate, (v) Physical facilities etc.

Pupil-related variables have been further analysed in terms of the pupils' personal characteristics like age, intelligence, socio-economic status, level of maturity etc., motivational determinants, affecting their achievement level.

With a view to getting proper perspective of how the cognitive aspects of motivation affect human achievement, the available research literature with respect to choice behaviour, level of aspiration, persistence and risk preference have been reviewed in a brief report of which is given in this chapter.

(A) CHOICE BEHAVIOUR

Choice behaviour and decision making:

Decision making situations allow for exercising choic
evolved since the time of Jeremy Bentham (1748–1832): problem which interests "decision theorists" is as fo:
"Given two states, A and B, into either one of wh:
individual may put himself, the individual chooses
preference to B or vice versa" (Edwards 1954, page 380.)

This is very similar to the problem of selecti
response encountered in James' analysis of deliberate vo
in Thorndike's cats struggling to get out of the puzzle
the rats at a choice point in one of Tolman's mazes and 1
subjects trying to decide how difficult a task to under
the Lewinian level of aspiration experiment. Thus all
involve conflict and the possibility of making a comprom
arise in such situations. This means, surrendering one
the goal in order to salvage some other part. Thus most
choice behaviour studies are related to making a de
involving situations of uncertainty, risk and va:
subjective utilities.

Decision making situations vary in the degree to wh
outcomes involve aspects of chance and skill. Where ta
chance nature are concerned—gambling decisions in th
the most sophisticated work has been carried out by Sl
his associates. On the basis of several empirical
Slovic and Lichtenstein (1968) reinterpreted the fin
gambling choices in terms of two fundamental processes: (a) various probability and pay-off components of a bet and limitations on information processing capacities which lead decision-maker to focus on particular components of a bet to exclusion of the other components.

Choice behaviour and personality dispositions:

Comparisons of decision making in chance and skill conditions have been a major concern of John Cohen (1960). In decision making situations offering equi-probable chance vs. alternatives, subjects tend to prefer the latter. Presumably equal objective probabilities are not subjectively equal; subjects apparently biasing probabilities upward when they believe they have control over outcomes.

Furthermore, according to John Cohen, in choices of lottery type, majority of people primarily prefer to minimize losses regardless of possible gains and the minority choose to maximize their gains irrespective of possible losses. Cole's two-fold categorization of people based on their choice in probable situations resembles that of Atkinson based on theory of achievement motivation.

While choice behaviour is evident at personality level, it is not so conspicuous on achievement level. Nevertheless
and academic performance.

Choice behaviour in Achievement motivation and Academic achievement:

Lowell (1952) found that the subjects with high achievement motive had high scholastic aptitude showing that they were brighter than those with low achievement motivation. When the impact of intelligence was doubted a statistical correction was made and the correlation between achievement motivation and performance was lowered only to .44 from .48 indicating that most of the difference was due to achievement motivation and not due to intelligence.

In learning situations, the hard specific goal produced significantly higher performance. La Porte and Raghunath who carried out this investigation attributed the hard work improvement to an increase in study-persistence and challenge learning behaviour.

The importance of the task perceived by the performer was likely to have a bearing on the relationship of achievement motivation and performance. As it was considered that real life situation and laboratory situations could bring out the relationship of achievement motivation and performance, a real life situation was used in a few studies. Mc Clelland et. al.
have shown evidence for superior learning and performance in school.

Rosen (1955) when correlating the motivational score with school grades, found high achievement motivation was proportionally related to high grades and low achievement motivation to low grades.

When an attempt was made to find the relationship between achievement motivation and the grades on mid-term, Lingren (1960) measured achievement motivation through a questionnaire and found that achievement motivation scores were positively significantly correlated with grades on mid-term. Similar findings were reported by Yeracaris (1963) who obtained significant correlation coefficients. Pierce and Browman (1960) studied high school boys and found significant positive relationship between achievement motivation and course grades for high school boys.

When the cited studies have shown consistent results of relationship between achievement motivation and academic performance, Atkinson's (1956) study showed a correlation of 0.14 for a group of college boys. Sinha (1970) measured achievement motivation utilising Aronson's Graphic Expression Test and found that in relation to academic achievement of subjects, high achievers though had a higher mean of achievement motivation than low achievers the difference was not significant.
The results reported by Gokulanathan (1970) similarly showed that the boys and girls classified as 'high' on achievement motivation obtained higher mean percentage of marks than those classified as 'low' on achievement motivation. But the difference in mean percentage of marks was not statistically significant.

In studying the relationship between achievement motivation and academic achievement, Coleman (1966) found a weak but significant relationship. He comments that the relationship is probably circular. On the one hand high achievement motivation produces great effort which results in a high level of academic performance while on the other hand the successful accomplishment produces feelings of confidence as well as positive reinforcement. He thinks that if such a relationship could be established, it would be possible to intervene at any point and start the student cycling toward greater motivation and greater achievement. Studies on the effect of individual differences in the strength of the disposition to achieve, on overt instrumental achievement-oriented performances yield the same general picture.

People dominated by the achievement motive, resulting in high academic performance tend to focus mostly on the possibilities of success rather than worrying on possible losses or failures. Thus choice behaviour is in favour of possibilities
of success.

(B) LEVEL OF ASPIRATION

Level of aspiration as goal-setting behaviour:

In reviewing the goal setting research literature to identify the variables that have influence on individuals' choice of goal level, Donald Campbell (1982) found that there are two broad areas - situational factors and personality factors. Under situational factors, prior success or failure on the task, monetary and verbal incentives, feed back, participation and competition were identified as probable determinants of choice of goal difficulty. Personality influences such as need for achievement, higher order need strength, self assurance and maturity were also found to have influence on individuals' choice of goal difficulty. None of the studies reviewed, directly examined the connection between goal difficulty and general personality. Earlier literature on level of aspiration support the notion that choice of goal difficulty reflects a general personality trait, cutting across different situations.

Richard, Teevan, Smith and Barry (1975), in their study, investigating the relationship of fear of failure and need achievement motivation with respect to level of aspiration, introduced to idea "confirming-interval" approach. It was
suggested that aspirational statements can be better understood as representing a range of aspirations. The region between lower and upper boundaries, was termed as 'confirming-interval'. It was found in the study that males showed predicted positive correlation between width of 'confirming interval' and fear of failure motivation. Further positive correlation was observed between fear of failure motivation and mean discrepancy between 'confirming-interval' boundaries and performance scores. The study further noticed that females yielded opposite results in the above listed instances.

The same team of researchers (1981) further found that (i) "confirming-interval" narrowed with practice (ii) subjects were affectively indifferent to performance scores, located within the interval, set more realistic levels of aspiration.

Level of aspiration and personality variables:

The contention of Frank (1935) is that there are certain traits of personality which are to a large extent independent of the physical nature of the task situation. Realistic striving, drive, need sensitivity etc., seem to be related to the level of aspiration. In her investigation, P.S Sears (1941) found personality differences between realistic, overstriving and withdrawing pupils. She analysed the record of each individual
Student and found that the way pupil has succeeded or failed in the school career affected his goal-striving behaviour.

In regard to the relation of level of aspiration performance and Rorschach personality indices, the study of Graven (1958) shows that individuals with high level of aspiration tended to have greater drive and activity than the individuals with low aspiration.

Klugman (1948) found a positive correlation between level of aspiration and emotional stability. According to him, the level of aspiration is rather a test of personality (Klugman 1947).

Anxious people set their goals either very high or very low and have a tendency to show greater variability in the level of aspiration than the less anxious people (J.W. Atkinson, 1957). Flystenics have a minimal level of aspiration, often setting their future goal below the level of past performance. (H.J. Eysenck and H.T. Himmelweit, 1946; Himmelweit, H.T. 1947, Miller, D.R. 1951). Hypersensitive persons are likely to set high goals even after repeated failures. The effect of inferiority complex as been demonstrated by Julian B. Rotter (1944), working with orthopaedically handicapped young people.

The experimental studies of Eysenck and Himmelweit (1947)
show that the level of aspiration tasks are valid sufficiently to demarcate extroverts from introverts. When compared with actual performance, the aspiration scores of extroverts were found to be higher than those of introverts and the judgement scores of the extroverts were lower than those of introverts.

High n-achievement subjects have a greater subjective probability of goal attainment. (Kausler D.H. and E.P. Trapp, 1958). During repeated trials on a digit symbol task, individuals with high n-achievement had greater difference scores between what they achieved and what they stated was their level of aspiration. When the results of their performance were told to them the level of their stated aspiration moved closer to their actual performance. They became more realistic on knowing the results.

level of aspiration and Academic achievement:

Daniel Bar-Tal and his associates (1980) studied the relationship between locus of control and academic achievement, anxiety and level of aspiration while holding the influence of socio-economic status constant. Results obtained in the study suggested that in general, internals tended to attain greater academic achievement, expressed less anxiety and had higher levels of...
achievement, level of aspiration and the perception of locus of control was accentuated among subjects of Asian and African origin to a greater extent than among subjects of European, American or Israeli origin.

Investigating the relationship of Test anxiety, achievement motivation and level of aspiration to mathematics performance of 4th to 8th grade students, Hellmann (1976) found that besides I.Q., level of aspiration and achievement motivation were of more use as compared to Test anxiety and feed back conditions of success and failure in predicting academic performance.

In India, Tewari and Rai (1976) attempted to determine the extent to which high, average and low achievers at the higher secondary stage differed in their level of aspiration, need for achievement, adjustment, anxiety and Intelligence, keeping socio-economic status constant. It was found that adjustment and intelligence were the differential personality correlates; level of aspiration was not significant and anxiety was negatively correlated with scholastic achievement.

Govind Tiwari, Rakesh Kumar and Morbhatt (1980) studied level of aspiration as a function of anxiety and sex, among high and low academic achievers. It was observed that high achievers
ndicated higher aspirations only when their anxiety scores were low, whereas low achievers showed high aspiration when their anxiety scores were high. Sex difference and variations in academic performance played an important role in goal discrepancy scores. It was observed that female high achievers had high aspirations than their male counterparts, male low achievers had higher aspirations than their female counterparts. High and low anxious females had a higher aspirational level than male counterparts only when they were high achievers. Among low achiever, high anxious males had higher aspirations than high anxious females and low anxious males.

Summing up the studies on level of aspiration it could be aid that personality dispositions like realistic striving, rive, n-achievement, sensitivity and emotional stability have ignificant bearing on level of aspiration. Further level of spiration is an important aspect of motivational behaviour and it affects academic achievement indirectly through n-achievement otivation.

(C) PERSISTENCE

Persistence has been found to be an important aspect of hevement behaviour for subjects of all ages (Marjorie Rawl mold, 1974). Robert singer (1981) found that the group at was provided with short and long term goals persisted longer
group in whom the achievement motive was dominant were less persistent than the group in whom the motive to avoid failure was dominant. Those who were more highly motivated to achieve success, spent very little time in trying to solve a puzzle which they had been told that only 5 out 100 college students were able to solve. They moved on to the next item, which, in the light of the experimenter's instruction that the four items differed in difficulty, probably represented a more realistic risk. The group disposed to be anxious about failure, however were persistent in their attention to this task. Some of them finally had to be interrupted by the experimenter after 41 trials without success.

Defining persistence, operationally as the amount of time in seconds a subject spent on an unsolvable anagram task, Allen Thomas Alexander (1976) examined the relationship of achievement motivation, locus of control and varying rates of success and persistence. It was found that while locus of control was a better predictor of self-confidence, persistence was more successfully predicted by achievement motivation. This finding in part provided confirmation of Atkinson's view self-confidence is not necessarily a by-product of the level of achievement motivation. On the other hand achievement motivation was found to be positively related to persistence while locus of control was not. Thus locus of control was found to be a better predictor
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thought than of action while achievement motivation appeared to predict action better.

PERSISTENCE AND ITS RELATION TO PERSONALITY AND SITUATIONAL VARIABLES:

Both personality variables like n-achievement, fear of failure etc., and environmental variables like expected level of achievement in a task, interacted in determining persistence at both short term and long term tasks. (Marta Langova, 1976).

Milosiaev France et.al (1980) investigated the influence of some situational and personality factors on persistence in problem-solving. Of the personality factors, the influence of achievement motivation, personality orientation and the personality dimensions of activity, stability dominance rationality and extroversion were examined. Of the situational variables, the subjective attractiveness of the task, the expected level of achievement, the appeal of the task for the subject and the subjectively rated cause of failure were studied. Results of this study did not confirm the assumed influence of personality factors on persistence. However, there was a tendency towards positive correlation between persistence and need for achievement. Much greater influence of the situational factors
persistence was noticed particularly by the attractiveness of the task for the subject and his/her orientation towards the task.

The relationship of fear of failure to the amount of time spent in a final examination was studied by Richards Teevan and his associates (1983). It was found that subjects scoring high in fear of failure in terms of Hostile Press measure, showed either very short time or very long time persistence at the task as compared to subjects low in Hostile Press measure who fell in the middle of behavioural distribution. This result is in variance with Atkinson and Litwin's results, employing the test anxiety questionnaire as a measure of the motive to avoid failure.

Studying the effect of problem difficulty on task persistence, Debi Straners and Otto Zinser (1983) found that a group of subjects who were told that the difficulty level of the task which they were going to solve was high, devoted more time to the task than subjects in the low difficulty and control groups. This finding, it was contended as suggesting that subjects in the high difficulty group perceived their failure to solve the problem to be less of a threat to their self-esteem than did subjects in the other groups and as a result devoted more time to task.

Persistence and Educational achievement:
Personality correlates of persistence in education were examined by Denise Gollfredson (1982) and it was found in the longitudinal study covering 2213 High School males that low anxiety and high commitment increased persistence in education even when social background and intelligence were controlled.

Mark Crabe's (1982) study also lent support to the belief of the advocates of masterly instructional system that a student can compensate for the low ability through greater persistence in efforts. The findings of Hajnal and Peter Vaczi (1982) also supported the view that higher the value of persistence in efforts the higher will be the academic achievement.

In the Indian context Dubey (1982) investigated the effect of different levels of persistence on educational achievement and found that subjects high in persistence had better academic achievement than subjects low in persistence.

The above studies on persistence, lead us to conclude that persistence at a task is jointly determined by the expectation of success and the strength of achievement related motives. Persistence affects academic achievement more as a corollary of achievement motivation rather than as an independent variable.
(D) RISK-TAKING BEHAVIOUR

The available literature on risk-taking behaviour has been divided into four categories. The studies, relating to task and situational influences on risk behaviour are placed in the first category. The studies probing the influence of personal characteristics on risk preference form the second category. Studies relating risk with personality variables are in the third category. The researches relating risk-taking and interaction in groups are included in the fourth category.

1. Risk task and situational Influences:

Where tasks of a chance nature are concerned, the choice made are governed by two fundamental principles. (a) the relative importance that subjects assign to the various probability and pay-off components of a bet and (b) limitation of information-processing capacities (Slovic & Lichtenstein, 1986).

Unlike bets in which all the necessary information is available to the subject, much decision making involves the accumulation of additional information. The amount of information sought will be a function of the gravity of the decision, the cost of obtaining the information and the consistency of the information being gathered (Irwin and Smith,
1957). Studies of this kind are highly relevant to risk taking, for individuals must decide when a decision is most optimal in the face of progressively increasing costs and decreasing value of the incentive. Wide individual variations reflective of differences in risk-taking dispositions seems to be a common feature of information seeking activity (e.g. Lanzetta and Kanareff, 1962).

A central issue in the study of risk-taking concerns the relative predominance of gain maximization and loss minimisation in arriving at decisions. Retting and Rawson (1963) working with hypothetical ethical dilemmas, have shown that severity of censure - if apprehended in an unethical act - has greater influence than potential gain in the prediction and actual occurrence of unethical ("risky") behaviour. Comparable findings in other decision contexts, some involving monetary gain and loss (e.g. Atthowe, 1960) reinforce the conclusion that university students tend toward conservation in decision making.

In regard to the issue of prior gains and losses on subsequent decisions. contrary to Edward's (1962) claim that previous outcomes have negligible impact, investigators working in both naturalistic and laboratory contexts have obtained sequential effects. McGlothlin (1956) in a study of race-track betting found that prior losses facilitated risk-taking, where as
prior winnings enhanced conservation. Kogen and Wallach (1964) obtained similar results in the laboratory.

Comparisons of risk taking in naturalistic and laboratory contexts point to higher risk levels in the former. Differences can be traced to competitive elements in the naturalistic situation, for the introduction of competition in the laboratory (Preston and Baratta, 1948) yields risk levels highly similar to those obtained in field settings.

II EFFECT OF PERSONAL AND SOCIAL CHARACTERISTICS ON RISK BEHAVIOUR:

Sex, age and social class differences in risk taking have been reported. Sex differences indicative of greater risk taking in males have been found in children (e.g. Kass, 1964). But such differences appear to be attenuated in adulthood (Kogen and Wallach, 1964).

Less is known about age differences, for Psychologists have not studied risk-taking across the entire life span. However Chaubey (1974) found that old adults display the tendency to avoid intermediate risks and thus save themselves from the consequences of failure. Similarly Wallach and Kogen (1961) obtained higher risk levels in university students relative to a gerontological samples of comparable education.
Comparisons of subjects differing in social class—University students Vs. enlisted military personnel—have indicated stronger risk taking dispositions in the latter group (Scodel, Ratoosh and Minas, 1959). Farclouest and Shahrokh found that individuals from low socio-economic status (low family income) tend to be more risk-averse than those coming from higher status (high income) families.

III. INFLUENCE OF PERSONALITY AND MOTIVATIONAL DISPOSITIONS ON RISK-TAKING BEHAVIOUR:

A large amount of research on personality dimensions and motivational correlates of risk-taking has been focussed on the achievement motive. The relationship between achievement-oriented tendency and risk behaviour has been explained by the theoretical model of Atkinson (1957). Atkinson and Litwin(1960) found that in a ring toss game significantly more number of shots were taken from an intermediate distance by men who were high in need achievement and low in test anxiety than the men who were low in need achievement and high in test anxiety.

Joseph Levy (1976) examined the effect of high and low levels of achievement needs on risk-taking behaviour in a competitive play situation. Risk-taking behaviour was operationalised in the study by the number of shots the subject
selected from three difficult levels in a "ray gun" shooti
contest and by the ability of the opponent selected by t
subject based on their viewing opponents of 3 different leve
(trained confederates). It was found that the group of low ne 
achievement took more shots from the easy and hard categories t
the high need achievement group from the medium category. Howev
However, the expected similar differentiation in oppone
selection was not found and both the groups tended to choc
opponents of equal ability. But Thomas Mc Gaffey (1976), in l
study of the motivational determinants of decision making
triadic coalition game, observed that Ms > Mf group cch
moderate coalition partners more frequently than did the Mf> Ms

In the Indian context, investigating the achieve
motivation and risk-taking among small scale entrepreneur
Satvir Singh and Indira Jaiswal (1970) found that high scores
achievement motivation and moderate scores on risk-taking we
associated with business success, low scores on achieveme
motivation and high scores 'on risk—taking were associated wi
declining business.

A new decision model in risk—taking situations where t
choice is between the "safe option" (costs and rewards a
known ) and the risky option" ( may lead to success or failure
was developed by Maria Nowakawske (1979). This model took in
account both economic (rewards and costs) and Psychological variables (motives to achieve success and avoid failure). Under some conditions, it could be observed that the risky decision was preferred to the safe one, as long as the probability of success was neither too small nor too large. It was concluded in the study that motives of achieving success and avoiding failure do not play symmetric roles, contrary to the theories of motivation advanced.

Investigating the relationship among eight measures of the need for achievement and twelve measures of risk preference Malcom Weinstein (1969) empirically tested the J.W. Atkinson's risk-taking model. This study confirmed Atkinson's model only for risk preference in vocational choices. Factor analyses of both need achievement and risk preference measures provided evidence of multidimensional nature of these two constructs.

Some of the recent research studies indicate that people use subjective probability rather than objective probability in choosing a task involving risk (Ogden Hamilton, 1974., Alan Down and Thomas Mitchell, 1984) and the perceived ability level of the subject produced biasing effects on subjective probability (Friedrich Foersterling 1980; Alan Downs and Thomas Mitchell, 1984).

Value and subjective probability according to Crozier (1979)
contribute independently to decisions, particularly when subjects choose events of equal probability one of which is valued.

The relationship of risk-taking behaviour with other personality characteristics like locus of control have also been investigated. But such studies are very limited in number. Subjects high in risk-taking behaviour were significantly different from those low in such behaviour in the personality factors of responsibility consciousness, anxiety and pathological uncertainty (Ivan Sarmany, 1977).

For males, riskiness exhibited a significant positive relationship with sociability and emotional stability but a significant negative relationship with extroversion, ascendancy and responsibility. For females riskiness was negatively associated with responsibility. (Krishnan, 1981)

Behaviour deviancy, self-esteem and level of aspirations were found by Govind Tiwari (1983) to affect independently and simultaneously, subjects' risk-taking tendencies.

Suzanne Sisson (1985) found that four fears—fears of failure, success, what others will think and uncertainty—exhibit risk-taking behaviour and learning to take appropriate risk was a complex behaviour related to self-esteem, ability to show good choices and personal philosophies and values.

Investigating the effect of anxiety and need for approval on
decision making. Vimala Agarval (1977) found an inverse relation between risk-taking and anxiety and a direct relation between risk-taking need for approval.

Studying the effect of personality on "risky shift" and attributional process Papica (1981) found that subjects with an internal locus of control and high need for success were more resistant to the confederates' influence and tended to choose alternatives with moderate estimate of probability. Subjects with external locus of control and low need for success and those with internal locus of control and high need for success were characterised by situational and personal attributions respectively.

Marcelino Guellar found that there was no significant difference in risk-taking behaviour of students differing in a academic achievement level, ethnicity and sex.

IV Risk-taking and interaction in groups:

The "risky-shift-effect" states that group interaction has a risk enhancing influence on prior individual decisions. This shift towards risk in groups has now been demonstrated in a variety of decision contexts and in numerous countries though 'cautious-shifts' sometimes occur.

Various interpretations on the "risky-shift-effect" have been advanced.
(a) Diffusion of responsibility:

Group influenced decisions are more risky because the blame for failure of risky choice will not fall upon a single person but rather will be diffused across the members of group (e.g. Wallach and Kogen, 1965).

(b) Risk-taker as group leader:

Groups become more risky because leaders are more inclined to take risks and they persuade the other group members to follow that course (e.g. Hoyt and Stoner, 1968).

(c) Information-flow theory:

A thorough study of individual decision situations produces shifts towards risk and hence the "risky-shift-effect" is not truly a group phenomenon (e.g. Batesan, 1966) what really transpires in a group situation is exchange of ideas about the decision situation and the information-flow during the group discussion makes the group members to choose a more risky option.

(d) Risk as a cultural value:

Individuals in western society value risk more highly than caution and believe that they are no less risky than their peers, but discover in the group context that some of their peers are more risky, thereby offering a rationale for shifts towards greater risk.

The final interpretation listed above first advanced by
Brown (1965), has gained the greatest acceptance in part because it has been able to account for both risky and cautious shifts in groups (e.g. Stoner, 1968). A review of the "risky-shift" literature is continued in Kogan and Wallach (1967) and a more up-to-date review in Dion, Baron and Miller (1971).

Summarising the various research studies in risk-taking literature, we can conclude that risk preference or level of aspiration in achievement-oriented activities is related to n-Achievement and or Test anxiety [(Clark, Teevan and Ricciuti, 1956), Litwin, (1958), Vitz, (1957), Atkinson, Bastian, Earl and Litwin, (1960) and Mahone (1960)]. People with the personality disposition of maximizing the gain, prefer tasks of intermediate risk. However, in tasks where the outcome is determined purely by chance as in rolling dice, people strong in high n-achievement and weak in test anxiety developed a significant preference for the option having the highest probability of winning, since there is no differential incentive value of success (Is), attributable to the 'difficulty level (Ps) of the task, because the task does not require skill. Familiarisation of a task facilitates the people to take increased risk. Sex age and socio-economic status have bearing on the risk-taking behaviour.
The review of the various studies related to independent variables chosen for the present study - choice behaviour, level of aspiration, persistence and risk preference reveals that all these four variables independently and simultaneously affect the level of academic achievement and as such they have to be studied in detail to find their relative importance. The present investigation is carried out in this direction and the details of the procedure followed, the nature of tests conducted and hypotheses framed are dealt with in the following chapter.