# Role of Generalized Expectancies, Need-Achievement in Persisting Behavior of Adolescents on a Task of Intermediate Difficulty Level

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***Abstract:*** *180 male students of 10+1&10+2 were tested on Rotter's scale of locus of control and TAT ((3BM, 6BM, 7BM, 8BM, 10 & 20) in experimentally induced situations of probability of success of Ps.50 by specific instructions. An Insoluble figure--- 'perceptual reasoning task' was used to test persistence of externally & internally controlled Ss who were high and low on need-achievement. Analysis of variance & t-test were used for analysis of data. Findings concluded that----- (1) High need-Achievers persisted longer in comparison to Low need-Achievers at a task of intermediate difficulty level.(2) LOC, generalized expectancy, does not show any significant effect independently at a task of PS.50.(3) when LOC interacted with motive strength, it acted significantly.(4) High motive strength ($M_{S>}M_{AF}$) showed that internally controlled LOC subjects (Ss) and externally controlled LOC $S_S$, both behaved in a same manner and showed no significant difference in persistence.(5) Internally controlled LOC $S_S$ persisted longer than externally controlled LOC $S_S$ with Low motive to succeed.( 6) externally controlled LOC Ss persisted less in comparison to internally controlled LOC Ss with high motive to succeed.*

***Keywords:*** *Persistence, Locus of control, External locus of control, internal locus of control, need-achievement, High need-Achievement and Low need-Achievement.*

## I. Introduction

Achievement Orientation, conceptualized as relatively stable personality trait, has been of great concern to researchers in both psychology and education. In its broadest conceptualization, achievement orientation is defined by 1) the presence of the motive 2) the nature of the situation evoking the motive, and 3) the goal of the behavior. The motive is concerned as a desire to excel in reference to a standard of excellence, "the situations which evoke achievement behaviour are those in which competence of performance is central and the general aim of achievement behavior appears to be that of obtaining positive reinforcement for demonstrated competence." (Zigler&Child, 1969).

Various measures have been used to assess achievement motivation. Classically, the motive was defined by a person's score on a series of TAT pictures. (Atkinson, 1958) Other investigators have used paper and pencil achievement test scores, questionnaire type measures of achievement motivation, persistence behaviors, and goal setting behaviors, achievement behaviors in contrived settings, grades and teacher ratings. While all these measures are probably measuring different aspects of achievement motivation and behavior, it will be assumed for purposes of this paper that they all represent, to some degree, a common underlying disposition: achievement orientation.

There have been two theoretical approaches to explaining the relationship between achievement motivation and achievement behaviors: Atkinson's expectancy drive approach and a cognitive approach. Inherent in each of these conceptualizations are assumptions about the nature of the motive and about the developmental processes underlying the acquisition of both behaviors and motives.

Atkinson and his associates have developed the most influential model of the relationship between achievement motivation and achieving behaviors. Atkinson (1957) specifies that "one's achieving behavior ($T_A$) is a function of one's desire for success ($M_S$) and fear of failure ($M_{AF}$) as well as one's perceived probability of success and failure at the particular task ($P_S$ and $P_F$, respectively) and the incentive or pride associated with success at the task ($I_S$ ) and shame associated with failure ($I_F$ ):

$$T_A = (M_S \times P_S \times I_S) - (M_{AF} \times P_F \times I_F)$$

A person with high achievement motivation, using the terminology of the model, is a person whose $M_S$ is higher than this $M_{AF}$. People with low achievement motivation have the opposite pattern: $M_{AF} > M_S$." (Frieze, 1972, p. 1-2) This model implies that both the nature of the situation and the motive structure of the individual are important determinants of behavior. The relationship between achievement motivation has developed. This model conceives of achievement motivation ($M_S$) as a stable driving force which emerges at five or six years of age and continues largely unchanged throughout adult life.

McClelland made several assumptions regarding the nature of the developmental processes responsible for the emergence of the achievement motive. These assumptions directed the major course of the early developmental research associated with Atkinson's model. Specifically, McClelland (1958) assumed that the motive was learned during the years prior to its final emergence and that antecedent socialization factors were related causally to the individual differences in n-achievement. As a consequence of McClelland's assumptions, the research generated by this model focused on establishing the parental behaviors and attitudes which produce individual differences in the achievement motivation in children. The great bulk of the research to the reviewed in this paper falls into this tradition.

While Kagan and Moss (1962) and Veroff (1969) endorse Atkinson's model for adult achievement behavior, their work represents an alternative approach to the understanding of the development of achievement orientation. This approach is characterized by attempts to explain the development of behavior in terms of stages. Thus, they are suggesting that the outlets for the motive ($M_S$ or $M_{AF}$) change over time and that these changes coincide with the developmental level of the child. Consequently, achieving behaviors ($T_A$) also change over time. Veroff (1969) also suggests that achievement behaviors develop through stages. In contrast to Kagan and Moss (1962), he assumes that the nature of the motive also changes and that the adult motive ($M_S$) is the result of childhood experiences in three major developmental stages. The strengths of the various components making up the adult motive structure ($M_S$, $M_{AF}$ and Fear of Success or $M_{-S}$) are the result of differential experiences during one or more of these stages.

The recent work of Heckhausen, Crandall, Weiner, and Feather has provided a new conceptualization of the links between achievement motivation and achievement behavior. Instead of postulating a drive system as the force underlying achievement behaviors, they suggest instead that it is an individual\s attribution regarding the causes of his success or failure "which mediates between the components in the achievement model and subsequent behavior". (Weiner, 1970, p.101). Data gathered by Weiner and his associates suggest that "Males in whom $M_S > M_{AF}$ are more likely to attribute the cause of an event to internal (self) sources (ability and effort) than males in whom $M_{AF} > M_S$. On the other hand, males in whom $M_{AF} > M_S$ are more prone to attribute success to task ease (an external factor) than the high achievement-oriented male subjects. Because individuals in whom $M_S > M_{AF}$ tend to attribute success to themselves, they also should experience greater pride given goal attainment (Rotter, 1966). The inequality in the reward value of success between the two motive groups may account for the differential approach behavior which they exhibit. Conversely, it appears that subjects in whom $M_{AF} > M_S$ are more likely than the $M_S > M_{AF}$ subjects to attribute failure internally to a lack of ability. Thus, they may be more likely to avoid subsequent achievement-related tasks." Weiner, 1970, p.101.

The developmental studies growing out of a cognitive approach are dependent on the researcher's theoretical biases. The developmental work of Crandall and her associates, growing out of the social learning theory of Rotter, focuses on parental antecedents of individual differences in cognitive functioning. While they postulate a cognitive link between motivation and behavior, their developmental approach still reflects a mechanistic bias. In contrast, the work of Heckhausen and Weiner reflects the influence of a cognitive-developmental theoretical approach. Rather than stressing the child rearing antecedents of individual differences, this cognitive approach seeks to identify the universal process of development. The child's cognitions, e.g., causal inferences, object interpretation and logical operations, rather than reinforcement and modeling, are seen as the causal factors in development.

Many researchers, Tella and Tella (2005), Anderson, Hathei & Hamilton (2005) consider "Locus of Control" very important in Achievement orientation. 'Locus & control' is a psychological construct which have been focused upon the investigation of the relationship between perception of this factor with various behaviors, attitudes and or personality characteristics. Such studies, based on this factor (LOC) have been comprehensively reviewed by (Lefcourt, 1982; Rotter 1966; Yates, 2009) who conducted researches on LOC and its relationship to level of aspiration, occupational choices & no Achievement, Being psychological variable, LOC refers to the extent to which a person feels he has control over his own destiny. The feeling of control here can be conceived to be spread out along a continuum. At the end of the continuum, the internal control connotes the attitude that one can manipulate his environment for reinforcement. This is based more on one's potential effort or skill. That is, if the person has the influence of internal control, he believes that all that can come to his will depend on his personal effort and struggle. Such individual sees himself as instrumental in outcomes of events.

On the other end of the continuum, the external control consists of a self attitude characterized by the feeling that all that happens to the individual is the consequence of chance, luck, fate and several others, all of which are forces and events beyond the individual control. Depending on the person's experience in his environment, the internal person can see himself as being master of his effort and acting as an "origin." Thus, such individual is capable of understanding his environment and can make possible adjustment and control his success and failure. Internal Locus & control is explained as the belief that outcomes of events are contingents upon one's own behavior, whereas external Locus of control is the generalized expectancy that outcomes are

determined by chance, luck or powerful others. Since the concept of locus of control indicates the degree which individual perceive that they have control over their environment, it is logical to expect that the externally oriented person will differ in behavior and achievement from the internally oriented person in several respects (Findley & Cooper, 1983). It is found that the internally oriented persons blame himself for his failure and accept praise as deserve for his triumphs. Students in different situations, based on this concept, perceive differently as a result of their control. A disciplined and self-oriented student sees failure as his own inadequate preparation and efforts and he blames neither himself for nor putting in more efforts to succeed. The externally controlled students will not think his success and failure are caused by himself. He does not blame himself for his errors.

Every situation requires some serious work to achieve the set of that situation. Where there is no hard work failure is bound to occur. It is on this assumption the researcher wants to study any effect of external and internal locus of control on students having low and high n-Achievement on a task of Ps.50 where there is equal chances of success & failure because moderate difficult task evokes equal probabilities of success & failure on high & low n-Achievers.

## II. Objective:

Theoretical assumptions guided the researcher to aim at to find out an understanding of the relationship between N-Achievement, Locus of control at a task of moderate difficulty level (Ps.50) among adolescents. Therefore she decided to find out the role of generalized expectancies (LOC) and N-Achievement in persisting behavior of students of 10+1, 10+2 classes on a task of Ps.50.

**Rationale of the study:**

From all motivational systems the achievement motive attracted the most attention due to its relevance in all spheres of life. It has given focus by many researchers because along with cognitive abilities, general achievement motivation can be viewed as the second career relevant trait, important for both academic & career success (zimmermann, 2008). This is why it is very important to get information about adolescent's motive. By recognizing the motive strength of adolescents we can provide them knowledge about which incentives can cause positive emotions and influence the striving for a goal, and, on the other hand, we can predict which factors can cause fear and understanding how they can be avoided. Achievement behavior thus has been defined as behavior directed toward the attainment of approval or the avoidance of disapproval for competence of performance in situation to which standard of excellence are relevant. In such achievement orientation generalized expectancies i.e. Locus of control plays a very crucial role in the form of belief in ability or belief in 'good' or 'bad' luck. Adolescence is the age where socialization provides a platform to develop various beliefs and strengthen their personality dispositions which help them in deciding & attaining their goals. For this purpose an experimental situation has been used to provide equal options for using ability & luck in students who were high & low in need-achievement.

**Hypotheses:**

To get the findings in this experimental set up, the following hypotheses were postulated to test:

**Ho$_1$:** There would be no difference between High N-Achievement and Low N-Achievement at a task of Rs.50 among students.

**Ho$_2$:** There would be no difference between internally controlled students and externally controlled students at task of Ps.50.

**Ho$_3$:** Low N-Achievers with Internal Locus of control would show no difference when compared with Low N-Achievers with External Locus of control at task of Ps.50.

Ho$_4$: High N-Achievers with internal Locus of control would show no difference when compared with High N-Achievers with external Locus of control at task of Ps.50.

## III. Methodology:

**Research Design:** 2 x 2 factorial design was used to study persistence at a 'perceptual reasoning task' test as a dependent variable when independent variables were LOC (Internal LOC & External LOC) and n-Achievement.

**Sample:** The sample was consisted of 180 male students (10+1, 10+2 class) of various govt. schools of Karnal. They were selected randomly from the attendance registers of the Science, Arts & Commerce classes with age range of 15 to 18 yrs.

**Tools & Procedure:** After getting permission from the Head of the institutions, tools were applied on the sample. The following tools & procedure were adopted:

**Locus of Control (LOC) :**

For getting data of LOC, Rotter's LOC scale was administered to each student. The scale was scored on the dimension of LOC. Extreme groups (Internally controlled students & externally controlled students) were identified on the basis of mean & SD. Students with Mean + ISD & above were considered as externally controlled students where as mean – ISD & below were considered internally controlled students.

**N-Achievement (Resultant need-Achievement) :**

Six cards of TAT, (3BM, 6BM, 7BM, 8BM, 10 & 20) were administered in sequence individually to all students. The following instructions were given:

"I am going to show you some pictures and your task will be to make up a story for each. It is a test of imagination. In making stories you have to keep n mind four points:

1.  Who are the characters? What is happening at present?
2.  What has happened in the past?
3.  What is being thought? What is wanted? By whom?
4.  What will happen? What will be done?

Your stories will be kept strictly confidential. I will give you 30 seconds to look at a picture and then five minutes will be given to write story about it. You are free to write whatever the picture suggests to you in relevance to above four questions. Your quickness in imagining and writing a story will be very important.

By following above instructions, stories of all 6 cards were scored as specified by Atkinson in manual for Achievement motive (1958). The reliability of the scoring of the TAT protocols was checked by another researcher who was expert in it. The correlation between the two scoring was found to be 67 which was sufficient enough for reliability. Raw Scores & TAT were converted into T scores by the following formula:

$$T = \frac{10(x-m)}{SD} + 50$$

**Test Anxiety Questionnaire (TAQ):**

Mandler & Sarason Test Anxiety Questionnaire (TAQ) was administered on the same students. The questionnaire was scored according the specified norms. The test was no time limit but students were generally able to complete the task within 10 to 15 minutes. The scores were converted into T-scores to make them additive with the T score obtained from TAT stories. The split half reliability of this Test by spearman brown formula was .73.

Need-Achievement was calculated by subtracting T-scores of motive to avoid failure ($M_{AF}$) obtained from test anxiety questionnaire from T scores of motive to success ($M_s$) obtained by TAT. Variable N-Achievement has two levels :

| | | |
|---|---|---|
| $M_S > M_{AF}$ | = | High N-Achievement Group (HN-Ach) |
| $M_{AF} > M_S$ | = | Low N-Achievement Group (LN-Ach.) |

**Perceptual Reasoning Task Test:**

It was used to get persistence scores of the students in experimental situation where a line diagram approximately 1.5 inch square (given below) printed on a white paper was used for solution. It was an "insolvable figure" and was aimed to assess persistence in terms of trails taken by each student.
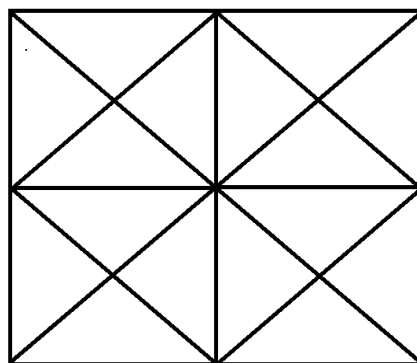


**Students were instructed as below:**

"You have to make the diagram shown to you with pen/pencil according to following rules:
1.  You will not be permitted to lift his pen/pencil from the figure once you started to make it.
2.  You will not be permitted to trace over any line twice.
3.  You can take as many trials as you want.

This test was presented in individual session to all students. Trials taken by each student were considered as his persistence score.

**Research paradigm:**
It showed distribution of students in each experimental condition of the study.

**N-Achievement**

| | | $M_S > M_{AF}$ (High N-Ach) | $M_{AF} > M_S$ (Low N-Ach) | Total | |
|---|---|---|---|---|---|
| Locus of Control | External LOC | 45 | 45 | 90 | |
| | Internal LOC | 45 | 45 | 90 | |
| | Total | 90 | 90 | 180 | G.T. |

**Analysis of Result**
2 x 2 analysis of variance was used and obtained results were shown below:

| Variables | Sum of Square | Df | Mean Square | F | Level of Significance. |
|---|---|---|---|---|---|
| N-Ach. | 280.28 | 1 | 280.28 | 25.48 | .01 |
| LOC | 39.36 | 1 | 39.36 | 3.58 | - |
| N-Ach.x LOC | 48.63 | 1 | 48.63 | 4.42 | .05 |
| Error within Treatment | 1936 | 176 | 11.00 | - | - |

**Pairwise comparison of means of different levels of N-Ach. (n=90)**

| Levels | Mean | Pair | Diff. | SE dm | T | Level of Sign. |
|---|---|---|---|---|---|---|
| $M_{S.} > M_{AF}$ (HN-Ach ) | 18.78 | HN-Ach, LN-Ach, | 2.00 | .34 | 5.85 | .01 |
| $M_{AF} > M_S$ (LN-Ach) | 16.48 | - | - | - | - | - |

**Pairwise comparison of means of different levels of N-Ach. (N=180)**

| Locus of control | N-Achievement | |
|---|---|---|
| | $M_S > M_{AF}$ | $M_{AF} > M_S$ |
| Internal LOC | 18.77 | 17.14 |
| External LOC | 18.79 | 15.82 |

| Levels | Mean | Pair | Diff. | SE dm | T | Level of Sign. |
|---|---|---|---|---|---|---|
| $M_S > M_{AF}$ (HN-Ach) | 18.77, 18.79 | I-LOC, E-LOC | -0.02 | .49 | .04 | - |
| $M_{AF} > M_S$ (LN-Ach) | 17.14, 15.82 | I-LOC, E-LOC | 1.32 | - | 2.69 | .05 |
| Internal Locus of Control | 18.77, 17.14 | HN-Ach., LN-Ach. | 1.63 | - | 3.33 | .01 |
| External Locus of Control | 15.82, 18.79 | HN-Ach., LN-Ach. | 2.97 | - | 6.66 | .01 |

**Graph showing significant difference between HN-Achievers and LN-Achievers on Persistence**
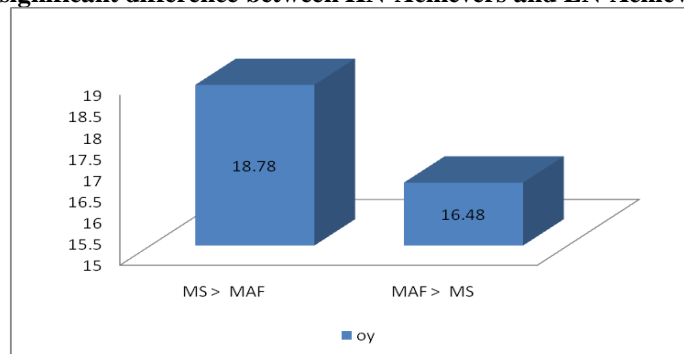


**Graph showing non-significant Interactional effects of Locus of control & HN-Achievement on Persistence (A)**
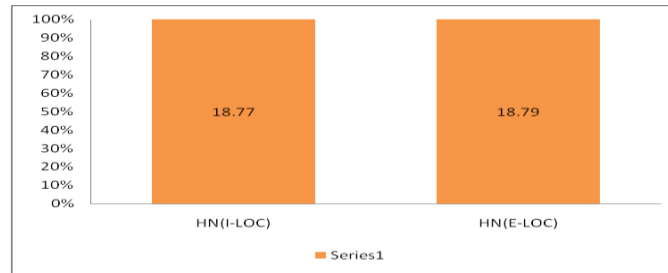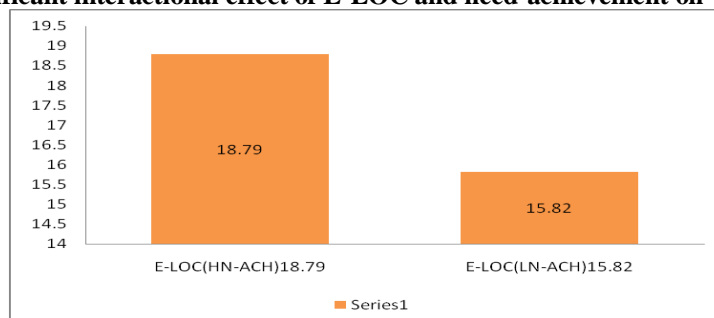
**Graph showing significant Interactional effects of Locus of control & LN-Achievement on Persistence (B)**
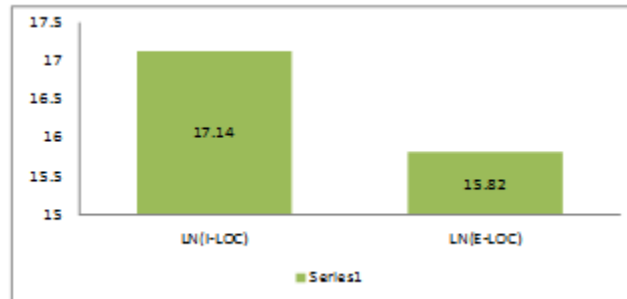


**Graph showing significant interactional effect of I-LOC and need-achievement on persistence (C )**
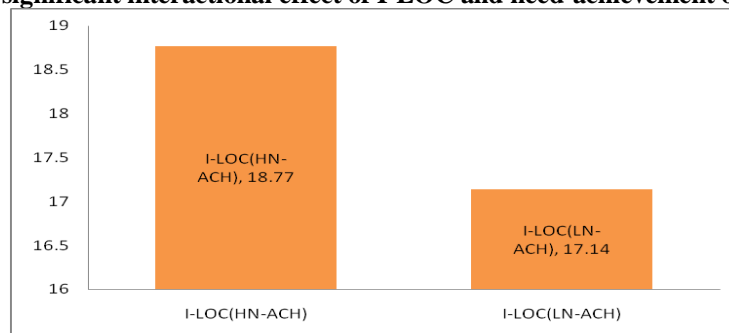


**Graph showing significant interactional effect of E-LOC and need-achievement on Persistence (D)**



## IV.     Discussion

As predicted in Atkinson's risk-taking model, data showed that High need- Achievers persisted longer in comparison to Low need-Achievers at a task of intermediate difficulty level. It proved their motive strength theory that High need- Achievers have $M_S > M_{AF}$ i.e. they have greater tendency to succeed instead of fear of failure whereas Low need -Achievers have $M_{AF} > M_S$ as they have strong motive of failure in comparison to motive to succeed at a task which is neither difficult nor easy, rather has equal chances of success & failure. McClelland (1973) associated n-Ach with entrepreneurial behavior and he further explained that Hn-achievers set moderate achievement goals, take calculated risks and value concrete feedback regarding performance. Gurol & Atsan (2006) cited need-Achievement as one of the most frequent entrepreneurial trait and Pillis & Reardson (2007) supported it as they explained it as the strongest prediction of entrepreneurship. Koh (1996);

Thomas & Mueller (2000) found that entrepreneurs (n-Achievers) preferred to take moderate risks in their business decision; they did not like to be involved in situations where there was extreme risk or uncertainty.

LOC, generalized expectancy, does not show any significant effect independently at a task which is neither difficult nor easy because such task has equal chances of success or failure. The task has equal chances to prove one's self and to blame or appreciate his luck. In the present findings, when LOC interacted with motive strength, it acted significantly. High motive strength ($M_{S>}M_{AF}$) showed that internally controlled LOC subjects(Ss) and externally controlled LOC $S_S$, both behaved in a same manner and showed no significant difference in persistence scores. Cromie (2000) noted an association between measures of n-Ach, LOC & risk-taking behavior. Pundziene & Duibiene (2000) found innovativeness, n-Ach, LOC & risk-propensity as main psychological traits; Commie Ireve Reimers (2005) did not found significant relationship between Entrepreneurial Personality & success (Persistence). While applying multiple regression analysis they did not found significant relationship between LOC, n-Ach & risk-taking propensity with success (Persistence). But which they applied simple regression analysis they found significant relationship between age, LOC & risk-taking propensity.

Ali Akbar Sheikhi Fini (2011) found the significant correlation between n-Ach, LOC & educational promotion (success or persistence). They found internal LOC $S_S$ believed that their success was due to their efforts & planning & they accepted their responsibilities for success as well as for failure students with E LOC did not face any cause & effect relation between their behavior & events as they believed in their fate or luck. MKPAE, Simeon Gbonee (2014) assessed effect of LOC on academic achievement of adolescents and found significant difference of achievement between internally LOC controlled $S_S$ & externally LOC controlled $S_S$.

The researcher found significant difference among Low need- Achievers ($M_{AF>}M_S$) at LOC dimension. Here externally controlled LOC $S_S$ persisted less in comparison to internally controlled LOC $S_S$. Externally controlled LOC $S_S$ believed in luck or external forces. Perhaps they believed ------ "luck would smile on him" like strategy. The task here used, was "insolvable figure", therefore by getting 'failure' in each trial confirmed them "the day was not good for him." Being Low need-achievers, they stopped performing the task very easily. Same findings were found by Grimes (1997) that an external LOC contributed to lower achievement and high level of anxiety ($M_{AF>}M_S$). She used "Learned Helplessness" to describe $S_S$ with a strong external LOC who quickly gave up when placed in situation they perceived to be at a risk of intermediate difficulty level (P.50) or at highest risk (Ps.05 or P.25).

Low need-Achievers being internally controlled $S_S$ had tendency to believe in his potentiality. Although they were low Achievers ($M_{AF>}M_S$) had strong fear of failure, task used was neither difficult nor easy, they persisted more in comparison to the extremely controlled LOCs who had low need-Achievement. It confirmed the findings of Hirsch (2001) that to study effectively, students must have the goal to be successful, a belief in their ability to successful (self efficiency) & accurate knowledge (Probability & Success) & ability to set goals (need-Achievement).

The present research found a different scene with LOC & motive strength. Internally controlling $S_S$ with high motive to succeed persisted longer than internally controlling $S_S$ with Low motive to succeed. Utsch & Ranch (2000) found importance of both internal LOC and n-Achievement in Venture performance. Externally controlled $S_S$ who had faith on luck showed significant difference. High need-Achievers along with belief in faith persisted longer in comparison to Low-need Achievers along with belief in faith.

Gifford (2007) the most important factor for internal motivation associated by academic achievement was self esteem & LOC. Yates (2009) confirmed the difference in achievement between the Internal LOC $S_S$ and extremely LOC $S_S$.

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