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## Original Article

### Factor Analysis of Student's Achievement Motivation Variables (Case Study: Agricultural Ms.C Student in Tehran University)

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#### ABSTRACT

**Objective:** The purpose of this study was to identify factors influencing student's achievement motivation. Statistical population of this research consisted of Agriculture Ms.c students in Tehran university (N=712). **Methods:** A random sampling method was used to collect data From 175 students applying Cochran's formula. The main tool to collect data was a researcher made questionnaire. Content validity of the questionnaire was approved, by a panel of experts, and its reliability, was confirmed by calculating Cronbach's alpha coefficient ( $\alpha = 0/85$ ). Descriptive analysis performed in two sections using SPSS Win21. **Results:** Results showed that student's self-esteem were in medium level. Results of factor analysis showed that six factors as: effort, goal-oriented, perseverance, explicit, specialty and abilities, explained the total of 45/79 percent of the variance in the achievement motivation variables

## 1.INTRODUCTION

Development is the process that consists of interaction between new ideas and ideals with old institutions. University is the center of produce new knowledge and thought and have basic role in transition communities to development community. Also, the university is a key factor that uplift the human abilities for achieve to development. Therefore, the higher education play a basic role in creates the context of development (Kaivani, 2004). Hence, the students are one of the basic sources in university; their motivation can play a fundamental role for university progress (Abadi & Zamani, 2009). The motivation is an essential element for learning and interest to learning caused by individual's characters and

nature of motivation (Eugene & Rodney, 2000). The important fact is that whole of human's wonderful progress caused by learning process and the motivation is essential factor for learning (Biabangard, 1991). In fact, we can analogize motivation to a car steering that conducted individuals to achieve goals (Saif, 2001). Based on Herzberg's Hygiene-Motivation theory, persons who have high level of motivation, illustrate themselves as an empowerment person. Therefore, they show high level of persistent to perform their tasks (Joachim & Rambow, 2007). Development and progress in all field indebted on high level of achievement motivation. Achievement motivation define as personal willingness to another override and successful in perform the difficult tasks (Chen, 2007).

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Psychologists argued that study the dimensions of achievement motivation is so important than study the intelligence and talent; because the intelligence in generally is a constant issue but we can improve and change the achievement motivation by using the suitable approached and strategy (Besser, 1995). Also, some psychologist believes that individuals progress in school and in adulthood not only depend on their intelligence and talent but also depend on their motivation, attitude and emotional reactions and so on (Masson et al, 1998).

McClland (1950) believe that create and development the achievement motivation depend on different factors such as: level of participatory in work, level of internal control, experiences, self-efficiency, self-confidence, self-concept and social protection. Moreover, Tamanai Far (2011) in his study showed that between age and student's achievements motivation has been significant relationship and between the students in terms of gender have significant differences and the girl student's achievement motivation were in high level than boy students.

Kaivan Zadeh et al (2007) in their investigated shows that the variables of gender, correct homework, level of mother's degree, age and parental involvement in education are significant factors to predict the academic achievement and increase the student's achievement motivation. Biabangard (2005) in his study "analyzing the relationship between self-esteem, achievement motivation and academic achievement in Tehran's secondary schools" showed that between student's achievements motivations in term of gender no significant differences as well as between two groups of humanities sciences and empirical sciences.

Moulavi et al (2007) in their study "analyzing factors affecting on reduce the student's academic achievement motivation in Ardabil's medical university" concluded that gender no impact on student's achievement motivation; but marital status and self-esteem have significant relationship with achievement motivation.

Rankin (1996) and Queen's et al (2000) researches classified the factors that affect on achievement motivation in two groups: (A) Individual factor; and (B) environmental factor (see table 1).

**Table 1:** Factors that affecting on student's achievement motivation

Individual factor	Environmental factor
Student's perception of relevance and suitable of homework with their need and interests	Incentives: including reinforcement and reward mechanisms
Level of student's participation and control in the learning process	Available the resources, facilities and social support
Attribution styles	Strategies and methods of teaching
Readiness: including knowledge and past experience	Effect of peer
Personal characteristics: such as self-efficacy and self-esteem	Evaluation's methods and mechanisms
Psychological and emotional conditions: such as self-concept, anxiety and depression	Teachers and parent's skills
Having a goal or awareness about curriculum objectives	

Source: Rankin (1996) and Queen et al (2000)

Considerable populations of students have an exaggerated view to their problems and perception that hasn't any control on their destructive behaviors. Therefore, if we want to train the students with positive sense about themselves and perceive that their knowledge is useful and effective and can live with the bright idea, confidently perspective and more realistic, it is essential that identify factors that affecting on student's achievement motivation. Therefore, the purpose of this study is Identify the student's achievement motivation dimensions in agricultural Ms.C students.

## 2. MATERIAL AND METHODS

This survey in its nature is a quantitative; In terms of objective is an applied and in term of statically is survey. The purpose of this study was to identify and describe the factors that influence the student's achievement motivation. Statistical population of this research consisted of 712Ms.c students in college of agriculture and natural resources, Tehran University, Iran. A

stratified random sampling method was used to select 175 student applying Cochran's formula. The main tool to collect data was a researcher made questionnaire that Content validity of the questionnaire was approved, by a panel of experts and Exploratory factor analysis and its reliability, was confirmed by calculating Cronbach's alpha coefficient ( $\alpha = 0.73- 0.79$ ). Based on the questionnaire, each responsible obtain a score range of 35 to 175 that was the basis for his/her achievement motivation. According to the standard deviation and obtain score, students in perspective of achievement motivation were classified in three groups (low, medium and high). The method used in this section was shown below (Gangadharappa et al, 2007).

$$\text{Low: } A < \text{mean} - \frac{1}{2} \text{sd}$$

$$\text{Medum : } \text{mean} - \frac{1}{2} \text{sd} < B < \text{mean} + \frac{1}{2} \text{sd}$$

$$\text{High : } C > \text{mean} + \frac{1}{2} \text{sd}$$

### 3. RESULTS

Based on the results of descriptive statistics the average of student's age was 24.67 years old with standard division 1.77 years. The oldest student was 35 and the youngest was 22 years old. In terms of gender the 54.3% of responsible was male and 45.7% was female. In terms of living location the 13.7% located in rural and 86.3% in urban. In term of marital statues the 13.7% of responsible were married and 86.3% of them were bachelor. Findings show that only 38.3% of students have experience in agricultural field.

In order to determine the student's achievement motivation, they were classified in three groups based on obtain score and standard division. Finding (Table 2) showed that 28.6% of respondents from prospective of achievement motivation were in the low level, 40.6% in the medium and 30.9% in the height level. This finding indicates that the medium level of achieve motivation has been most frequently.

**Table 2:** Frequency Distribution of student's achievement motivation levels

Achievement motivation	Frequency	Percent
Low (lowest than 125)	50	28.6
Medium (between 125-137)	71	40.6
Height (highest than 137)	54	30.9

137)		
Total	175	100

Exploratory factor analysis was used to determining the number of factors that affect on student's achievement motivation. Statistical analysis showed that the internal consistency of data was appropriate for factor analysis (KMO=0/683) and the Bartlett's test was significant (Bartlett=1231.456). Six factors were extracted by using the Kaiser's rule. Factor loadings after Varimax rotation are shown in table (3). Then, according to the nature of variables, factors were named as: effort, goal-oriented, perseverance, explicit, specialty and abilities. Given the amount of extract eigenvalues, effort factor were greatest effect on the total variance of student's achievement motivation (eigenvalues= 3.92) and then were the goal-oriented (eigenvalues=2.80), perseverance (eigenvalues=2.62), explicit (eigenvalues=2.12), specialty (eigenvalues=1.91), and abilities (eigenvalues=1.83) (table 3). In total, 45.79% of student's achievement motivation variances were determined by these factors.

**Table 3:** Rotation sums of affecting variables on student's achievement motivation

Factor	Eigenvalues	% of variances	Cumulative variance
1	3.92	11.89	11.89
2	2.80	8.50	20.39
3	2.62	7.94	28.33
4	2.12	6.96	34.43
5	1.91	5.8	40.23
6	1.8	5.55	45.79

**Table 3:** Factors and variables that related to student's achievement motivation after the varimax rotation

Factor name	Variables	Load factors
<i>effort</i>	I can work for a long time without felling exhausted.	0.503
	I believe that life without any attempt for work is unfavorable.	0.562
	I am person who most of time doing a work.	0.555
	My peer in college thought I am a hardworking student.	0.540
	When I engage with a work, I expected a lot of myself.	0.504
	I concentrate all my attention to the classroom when my master teaching.	0.479
	When I facing up to the problem, stay consistent.	0.461
<i>goal-oriented</i>	Most of time I believe that I shall be successful.	0.764
	Most of time I feeling that I can do whole works that I interested to them.	0.643
	With cognition of myself, I am sure that I can accepted in PhD.	0.625
	When I start a work, continue it until achieve to successful.	0.517
	In generally, I am a far-sighted person.	0.449
<i>perseverance</i>	I believe that have persistent in university is so important.	0.739
	Doing the academic homework require the high level of attempt and perseverance.	0.673
	Work is what I love.	0.553
	Creating a good relationship with my teachers is a valuables thing for me.	0.465
	At the university I admire who have achieved a very high success.	0.435
<i>explicit</i>	Always I want that my colleagues attention to me.	0.639
	Shopping is something that I love.	0.619
	It is important that individual achieving high success in community.	0.451
<i>specialty</i>	When I was in lower classes, my expectations of myself according to the time reading, were in high level.	0.746
	I believe that in everyone life exists something's that he/her can pleasure it.	0.529
	I interest in organizing things.	0.526
<i>abilities</i>	It seems that the effort of most people is less than they can do it.	0.706
	I do not feel tired most of the time.	0.583
	Usually I do work more than that I decided to do.	0.503

#### 4. DISCUSSION

Psychologists argued that study the dimensions of achievement motivation is so important than study the intelligence and talent; because the intelligence in generally is a constant issue but we can improve and change the achievement motivation by using the suitable approached and strategy. Also, some psychologist believes that individuals progress in school and in adulthood not only depend on their intelligence and talent but also depend on their motivation, altitude and emotional reactions and so on. Therefore, if we want to train the students with positive sense about themselves and perceive that their knowledge is useful and effective and can live with the bright idea, confidently perspective and more realistic, it is essential that identify factors that affecting on student's achievement motivation. So, the purpose of this study was to identify the student's achievement motivation dimensions in agricultural Ms.C students.

Description results showed that the greatest frequency of student's achievement motivation was in the medium and low level. This finding pointed that student's achievement motivation should be increase eminently with factors that affect on achievement motivation such as external and internal motivate. Moreover, factor analysis showed that six factors (effort, goal-oriented, perseverance, explicit, specialty and abilities) determined 45.79% of student's achievement motivation. This confirms the previous research findings (Rankin, 1996; Queen's et al, 2000) that were statement Individual (Student's perception of relevance and suitable of homework with their need and interests, Level of student's participation and control in the learning process, Attribution styles and ...) and environmental (Incentives, Available the resources, Strategies and methods of teaching, Effect of peer and ...) factors have essential role in achievement motivation.

Now, based on these finding suggest that:

It is essential that embedded content about achievement motivation in curriculum of agriculture. This educational content created awareness about achievement motivation role in student's successful. Therefore, student's awareness about achievement motivation was increased and they attempt coordinate their achievement motivation.

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