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A study of the relationship between personality characteristics, self-efficacy and control source, and achievement motivation

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A B S T R A C T

The present study aims to investigate the relationship between personality characteristics, self-efficacy and locus of control, on the one side, and the motivation for achievement, on the other, a case study of the students studying at bachelor's level at Shahid Chamran University of Ahwaz. The statistical population of this study includes all the BA.BS students of Shahid Chamran University in the 2015-2016 educational year. The statistical sample of the study comprises 300 students (150 male and 150 female). The sampling method is stager and om sampling and students are selected from different departments of Shahid Chamran University. The data collection instruments include five-factor questionnaire called NEO (NEO-FFI), achievement motivation questionnaire (AMQ), Adams and Sharer's self-efficacy questionnaire and Rotter's scale of locus of control. The results of a simple correlation analysis revealed that personality characteristics (agreement, extrovertist, openness, conscientiousness) have a meaningful (significant) and positive relationship with motivation for achievement, while neurosis has a significant and negative relationship with this construct. Both self-efficacy and locus of control are positively and meaningfully related to students' motivation for achievement. Also, the result of regression analyses indicate that self-efficacy and locus of control play a vital role in predicting students' motivation for achievement, personality characteristics (agreement, extrovertist, openness, conscientiousness and neurosis), and among the above-mentioned variables, self-efficacy, conscientiousness and locus of control are recorded the best predictors for motivation of achievement.

Keywords: Motivation For Achievement, Personality Characteristics, Self-Efficacy, Locus Of Control.

INTRODUCTION

One of the most important and well-known theories of motivation in educational psychology on which affluent research has been conducted, is motivation for achievement or need for achievement(Barrett, Dunbar, & Lycett, 2002; Lilienfeld, 2012; Williams, 1995). Slavin and Davis (2006) defined motivation for achievement as the interest and desire to overall success or success in a certain activity. Some people enjoy a high level of motivation and tend to try hard in competition with others to gain success. Still others have little incentive to progress and gain success, and fear of failure demotivates them to take risks to gain success. However, need for achievement stimulates individuals to gain success in the competitive

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benchmark(Brophy, 2013; Burke, 2016). Motivation for achievement makes individuals take the initiative in controlling the type and quality of their behaviour and effort in an attempt to reach their goals. It is worth noting that the relationship between motivation for achievement and self-control is bi-directional, so that if a person has a low level of self-control, he will not be able to control his behaviour, emotion and thought in a way that leads to success. Therefore, the resultant frustration causes lesser incentive for achievement(Elfhag & Morey, 2008; Gerlach, Herpertz, & Loeber, 2015).

Initially, motivation is influenced by a person's experience in the family. The more successful experiences he gains in the family, the more motivated will be. Upon entering school and gaining more experience, success and motivation for achievement mutually affect each other. In other words, increasing successful experiences lead to increasing motivation for achievement, which in turn will lead to more success(Clark, 2015; Phalet & Andriessen, 2017; Wlodkowski & Ginsberg, 2017).

The other side of the success story is one's personality. Personality can be defined as a stable and unique set of characteristics which are prone to develop in various situations. Personality is dubbed dynamic organization of rational, emotional, motivational and physiological aspects of an individual. Indeed, personality characteristics are one of the most important factors organizing one's motivations (Ko et al., 2006; C.-W. Wang, Ho, Chan, & Tse, 2015). In the early years prior to McClelland (1967), a vast amount of studies were carried out to further study the nature and effects of motivation. Some of these studies scrutinized the characteristics of those who enjoyed the motivation for achievement, i.e. it was hypothesized that such individuals act in certain specific ways. Individuals who have high levels of motivation for achievement value success for its own sake rather than for the sake of its consecutive rewards. Their interest in achievement does not result from working in a team; rather, it results from the working itself. They prefer to work with professional experts rather than their friends. They prefer situations where they can be responsible for their effort on personal disclaimers. On the same line, in a study to determine the relationship between personality characteristics and motivation for achievement, Bipp, Steinmayr, and Spinath (2008) and Dinger et al. (2015) revealed that openness and extrovertist as two personality characteristic have significant positive relationships with motivation for achievement.

Moreover, it is believed that self-efficacy plays a great role in the development of intrinsic motivation. This intrinsic power is only improved when the tendency for gaining such standards forms in an individual, and if it ends in positive outcomes, it will give the individual a positive self-evaluation. This intrinsic interest would bring about individuals' efforts in the long run and in the absence of environmental rewards(Driscoll, 2000; Duchesne & McMaugh, 2013). The alignment of motivation for achievement and high levels of self-efficacy will cause individuals to take the advantage of their maximum potential learning ability. Otherwise, one cannot reach his potential; the potential would remain untouched as a treasure and increasingly he would lose his productivity. Thus, the ideal situation realizes when one's dreams come in harmony with his potential(Mayer, 2002; Ormrod, 2013).

Piaget believes that self-efficacy schemas are formed during countless internalizing and externalizing events in enriched environments. Through intrinsic motivation, self-efficacy would cause the individual to make an effort spontaneously and gain belief in self-efficiency. Nature functions as an invisible teacher forcing the individual to move so that he reveals his vast capacities in the various levels of transition (Barkow, Cosmides, & Tooby, 1995; Barrett et al., 2002; Buss, 2015; Workman & Reader, 2014). In a study conducted by X. Wang (2013), there is significant relationship between the two variables. In other words, individuals with motivation for achievement participate in more and more affairs, and this requires efficacy to meet the

requirements; lack of self-efficacy will lead to failure and lower levels of motivation for achievement. In a similar fashion, Langan-Fox, Canty, and Sankey (2010) found out that there is a relationship between the locus of control and students' motivation for achievement. That is to say, the more the source of control is internalized, the higher and more stable the motivation for achievement will be. In this study, the test subjects' motivation for achievement increased by retelling stories in which individuals were able to change their lives and reach outstanding degrees, i.e. through internalizing the source of control. As such, the main inquiry of the present study is to determine the relationship between personality characteristics, self-efficacy and source of control with students' motivation for achievement. In other words, the study aims to answer one basic research question: What role do personality characteristics, self-efficacy and source of control play in students' motivation for achievement?

METHODOLOGY

In the present study, the statistical population consisted of the students studying at the bachelor's level at Shahid Chamran university of Ahwaz in the 2015-2016 educational year. The statistical sample of this study included 300 (150 male and 150 female) BA.BS students, and they were selected through stager and Om sampling from different faculties of Shahid Chamran University of Ahwaz.

Hermans' achievement motivation questionnaire: Hermans (1970) achievement motivation questionnaire has 29 multiple-choice questions. To estimate the reliability of his tests, Hermans used the content validity method which was based upon the existing literature on motivation for achievement. Hermans (1970) managed to calculate the validity of the test template using Cronbach's alpha method and the retest method; the results were 0.82 and 0.85, respectively. Moreover, the correlation coefficient of the questionnaire were calculated as r= 0.88 measuring the correlation of achievement-oriented behaviour. In this study, validity of the questionnaire was calculated by Cronbach's alpha and bi-section method as 0.78 and 0.71, respectively. Also, the criterion validity coefficient of the questionnaire was calculatedas 0.54 using the correlation with Gizly's self-description questionnaire, which is statistically significant at $p<0.05$ level.

The general self-efficacy questionnaire: The general self-efficacy questionnaire was developed in 23 articles by Sharer and Adams in 1983, 17 articles of which relate to general self-efficacy and 6 articles of which are about the experiences of self-efficacy in social situations. In this study, researchers used a 17- article scale. The self-efficacy questionnaire seeks to measure individuals' ability to dominate different situations(Kiamanesh, 2004). Sherer and Adams (1983) calculated the Cronbach's alpha for this questionnaire as 0.86. Kiamanesh (2004) calculated a rate of 0.86 Cronbach's alpha for the Iranian samples. In current study, the validity of the questionnaire was calculated as 0.77 and 0.84, respectively, using Cronbach's alpha and bi-section analysis. Also, the criterion validity coefficient of the questionnaire was 0.84,calculated using the correlation with subscale of self-efficacy adopted from the motivating strategies for learning questionnaire (MSLQ), which was statistically significant at $p<0.05$ level.

Short Neo Five-Factor Inventory Personality Questionnaire (NEO-FFI): In this study, researchers used the 60-item questionnaire of McCrae and Costa (1987). This scale specifies five main personality characteristics including neuroticism (N), extrovertist (E), openness to experience (O), agreement (A) and conscientiousness (C). Every one of these characteristics is measured with 12 questions. McCrae and Costa (2008) reported the final coefficients of these characteristics as follows: neuroticism (0.90), extrovertist (0.78), openness to experience (0.76), agreement (0.86) and conscientiousness (0.90). This questionnaire was first translated to Farsi and validated by Anisi, Majdiyan, Joshanloo, and Ghoharikamel (2011) for which validity

coefficients for different factors were as follows: neuroticism (0.79), extrovertist (0.79), openness to experience (0.80), agreement (0.75) and conscientiousness (0.83)**.** In the present study, validity coefficients of the questionnaire were calculated using Cronbach's alpha as follows: neuroticism (0.75), extrovertist (0.73), openness to experience (0.84), agreement (0.80) and conscientiousness (0.79). Also, in this study, the construct validity coefficients of the five factors of this questionnaire was calculated using correlation with five questions designed by the researcher, which proved significant at $p<0.05$ level.

Rotter's scale of locus of control: This scale was first devised by Rotter (1973) in 29 articles, every article of which is made up of two choices and, of which 6 articles are neutral. Consequently, inner and outer loci of control are measured in terms of 23 articles. The scoring method in this scale follows a 0 and 1 approach, and a few questions are scored reversely. In vast amounts of studies, reliability of Rotter's locus of control scale is calculated through retest method; Rotter (1973) reported its reliability from 0.49 to 0.83. To calculate validity of the questionnaire, Cronbach's alpha and bi-section analysis is used, the stability coefficients which are calculated as 0.60 and 0.66, respectively. Also, the construct validity coefficient of this questionnaire is calculated as 0.76 using simple correlation through correlating it with the Nowicki & Strickland's test of locus of control, which is statistically significant at $p<0.05$ level.

RESULTS

Results of the present study include descriptive findings and findings related to the hypotheses. Table 1 shows mean, standard deviation, minimum and maximum scores of the test subjects regarding the variables of the study.

Table 1. Mean, standard deviation, minimum and maximum scores of students regarding research variables

Variable Index	Mean	Std. Deviation	Min	Min
Neuroticism	34.42	7.04	17	**54**
Extrovertist	38.02	4.72	23	**51**
Openness	38.13	4.14	27	**48**
Agreement	40.03	4.11	27	**51**
Conscientiousness	43.03	6.46	24	**59**
Self-efficacy	59.86	9.31	80	**31**
Locus of Control	13.26	3.20	21	**4**
Motivation for achievement	79.15	10.27	103	**51**

To test the relationship between self-efficacy, personality characteristics and locus of control, and motivation for achievement, Pearson's correlation method was employed. Table 2 shows the correlation coefficient between personality characteristics, self-efficacy and locus of control, and students' motivation for achievement.

Table 2. Correlation coefficient between personality characteristics, self-efficacy and locus of control with students' motivation for achievement

Predictor variables	Motivation for achievement		
	r	R^2	p
Neuroticism	-0.382	0.14	0.001
Extrovertist	0.338	0.11	0.001
Openness	0.308	0.09	0.001
Agreement	0.299	0.089	0.001
Extrovertist	0.575	0.33	0.001
Openness	0.637	0.40	0.001
Locus of control	0.381	0.14	0.001

The data given in Table 2 shows that there is a negative correlation between neuroticism as a personal characteristic and motivation for achievement (p=0.001, r =0.338) and a negative correlation between extrovertist and motivation for achievement (p=0.001, r =0.308). Also, there is a positive correlation between openness and motivation for achievement(r= 0.308 ، p=0.001); between agreement and motivation for achievement (r= 0.299 ،p=0.001); between conscientiousness and motivation for achievement (r= 0.575 ،p=0.001); and between self-efficacy and motivation for achievement (r= 0.381 ،p=0.001).

Table 2 shows the results of the multiple-regression analysis of the interaction of the five-fold personality characteristics (neuroticism, extrovertist, openness, agreement and conscientiousness), self-efficacy and the locus of control, and motivation for achievement using the hierarchical method (Enter).

Table 3 Results of Multiple Regression Analysis of combinations of five-fold characteristics, self-efficacy and locus of control, and students' motivation for achievement in hierarchical method

As it is evident in Table 3, based on the results of the multiple-regression analysis and the hierarchical method, the multiple correlation coefficient for the linear combination of self-efficacy, conscientiousness, locus of control, neuroticism, extrovertist, openness and agreement with students' motivation for achievement was recorded MR= 0.732 and the coefficient of determination was calculated as RS= 0.536, both statistically significant at P =0.001 level.

Furthermore, to determine an appropriate prediction equation using the smallest probable sets of the strongest predictor variable combinations, stepwise regression was employed. Table 5 shows the results of the multiple-regression analysis related to the five-fold personality characteristics (neuroticism, extrovertist, openness, agreement and conscientiousness), self-efficacy and locus of control with students' motivation for achievement, using the stepwise approach.

Table 3. Results of multiple-regression analysis of five-fold personality characteristics (neuroticism, extrovertist, openness, agreement and conscientiousness), self-efficacy and locus of control with students' motivation for achievement using stepwise method

Predictor variables	Multiple correlation MR	Coefficient of determination RS	Ratio F Probability P	Regression coefficient (B) and (β) 3	2	1	Fixed amount
Self-efficacy	0.668	0.446	F=97.59 p<0.001	B=0.754 β=0.668 T=9.87 P=0.001	_	_	34.36
conscientiousness	0.709	0.503	F=60.70 p<0.001	B=0.502 β=0.445 T=5.04 P=0.001	B=0.532 β=0.326 T=3.69 P=0.001	_	26.78
locus of control	0.727	0.529	F=44.51 p<0.001	B=0.422 β=0.374 T=4.12 P=0.001	B=0.537 β=0.329 T=3.81 P=0/001	B=0.606 β=0.175 T=2.55 P=0.012	23.08

As it can be seen in Table 3, according to the results of the stepwise regression analysis, among all the five-fold personality characteristics (neuroticism, extrovertist, openness, agreement and conscientiousness), self-efficacy and the locus of control as predictors of students' motivation for achievement, self-efficacy, conscientiousness and locus of control are

predictors of motivation for achievement, respectively. It is possible to devise a prediction equation as a combination of only three predictor variables. Accordingly, the multiple correlation coefficient for the linear combination of the predictor variables equals MR=0.727 and RS= 0.529, significant at P< 0.001 level. Comparison of the coefficients of determination obtained of the hierarchical regression i.e. RS= 0.536and of the stepwise method, i.e. RS=0.529, yields that combination of the three predictor variables, i.e. self-efficacy, conscientiousness and locus of control is the strongest combination of the predictor variables to explain the variance of the students' motivation for achievement.

With regard to the non-standard coefficient column (B) and the fixed number in the hierarchical method, students' score in the motivation for achievement (Y') can be predicted using the scores of self-efficacy, conscientiousness, locus of control, neuroticism, extrovertist, openness, and agreement variables (X), respectively, through the following equation:

$$Y' = 25.25 + 0.427 (X_1) + 0.580 (X_2) + 0.566 (X_3) – 0.029 (X_4) + 0.137 (X_5) + 0.233 (X_6) + 0.027 (X_7)$$

Regarding the non-standard coefficient column (B) and the fixed number in the hierarchical method, students' score in motivation for achievement (y') can be predicted based on self-efficacy, conscientiousness and locus of control (X) variables with the following predictor equation:

$$Y' = 23.08 + 0.422 (X_1) + 0.537 (X_2) + 0.606 (X_3)$$

CONCLUSION

The present study aimed to investigate the relationship between personality characteristics, self-efficacy and locus of control, and motivation for achievement. The results obtained from the correlation analysis indicated that a significant negative relationship holds between neuroticism and students' motivation for achievement. As a result, the first hypothesis is confirmed. This finding is in line with the results obtained by Bakar et al. (2010) and Busato, Prins, Elshout, and Hamaker (2000). In expressing the negative relationship between neuroticism and students' motivation for achievement, the significance of an individual's sentimental and emotional stability can be emphasized. Students will benefit from intrinsic motivation for learning only when they can bear internal and external pressures, problems and stresses. Watson and Clark (1994) believe that neuroticism includes various types of sentimental problems e.g. depression, animosity, fear and negative experiences e.g. sorrow, panic, feeling of guilt and self-reproach, covering a wide range of negative emotions.

As such, these factors can abate one's positive beliefs about oneself and others and, consequently, neutralize one's intrinsic motivation. Therefore, emergence of negative emotions functions as a hindrance on the way of development of students' motivation for success and achievement, and even causes the augmentation of mental disorders and the formation of failure identity in one's education.

Results recorded a significant positive relationship between extrovert personality type and students' motivation for achievement; accordingly, the second hypothesis is confirmed. This finding is compatible with the results of Bakar et al. (2010); Bipp et al. (2008) and Busato et al. (2000). In line with the existing definitions of extroversion, it can be said that this construct includes such characteristics as sociability, assertiveness, sensation-seeking and positive emotions which in all have progressive and stimulating effects. Consequently, it goes without saying that a thoroughly logical correlation exists between extrovertist and motivation for

achievement. According to the needs theory, human beings tend to seek success and achievement all along their lives. Extrovertist can be a predictor of students' motivation for achievement in their educational life span since, by that time, students usually have passed their young adolescence and are keen to adopt new roles in their lives, though still having to keep their role as a student. Hence, there still remains the need for the motivation for achievement so that they can continue their education.

As it is evident in the findings, there proved to be a significant positive relationship between openness and students' motivation for achievement; therefore, the third hypothesis is confirmed. This finding is on par with the results obtained by Bakar et al. (2010), Ziegler, Schmukle, Egloff, and Bühner (2010), Bipp et al. (2008) and Busato et al. (2000). Regarding the fact that openness is a rationalistic and emotive element, and with respect to the fact that it is in the presence of emotionalism backed by rationalism that question-making develops in an individual's mind, it can result in an increase of feelings of responsibility, inclination to values and enhancement of speculation and imagination power within individuals. As a result, openness will directly affect an individual's need for development and intrinsic motivation for success.

Openness or engagement outweighs experience, though remained nearly unknown. The integral components of openness include love of beauty, diversity seeking, intellectual curiosity, active imagination, independence of judgment and creativity (McCrae & Costa, 1987). The study recorded a significant positive relationship between agreement and students' motivation for achievement, based on which the fourth hypothesis is confirmed. Nevertheless, it is at odds with Ziegler et al. (2010). In their research, they unraveled that no meaningful relationship holds between agreement and students' motivation for achievement. It should be mentioned, however, that in their case, agreement might be an indication of individuals' compliance with people or conditions, since in many conditions, one has to oppose an idea or abandon a failing workgroup for the sake of one's improvement, which contradicts agreement. Agreement can present a sound and rational recognition of human's character in his performances, making him ready to contain the existing constructive attitudes and ideologies. Thus, attempting to approach successful people and to come along with them, a student does his best to set personal and educational achievement as his first preference and develop an intrinsic, rather than an extrinsic, motivation.

As it was evident in the results section, there is a significant positive relationship between conscientiousness and students' motivation for achievement. Therefore, the fifth hypothesis is confirmed. Conscientiousness can act upon individuals' meaningfulness in life and measure individuals' inclination to success. Conscientiousness represents fidelity, self-control, conservativeness in decision-making and inclination to discipline, all of which function to encourage individuals to take efforts. Moreover, it can enhance an individual's internal control (inhibition), hence accelerating his meaningful behavior. In all, fidelity and meaningfulness (purposefulness) will lead to the formation of a strong motivation in many respects including education, in particular.

Fidelity directs students' performance towards excellence irrespective of external rewards. This characteristic is transcend able and provides a degree of inner satisfaction within individuals. This may be thought as a form of internal reward which, in fact, is understood as a form of success for every individual. Consequently, an increase in such successes acts as a feedback to one's inner world and stimulates him to set out for further achievements.

As the results section indicated, there proved to be a significant positive relationship between self-efficacy and students' motivation for achievement. Therefore, the sixth hypothesis is confirmed. In other words, students' high scores in tests of self-efficacy correspond to their increased motivation for achievement. In most research, it is observed that self-efficacy values in

individuals can be predictors of educational achievement, field and carrier selection, successful accomplishment of a profession and involvement in activities more than other motivational variables such as self-image or self-esteem and in cases even more than variables such as ability or aptitude are. It seems that developing a positive image of one's capabilities of oneself will be so much effective and determinant and can act as stimulation for one's growth and achievement. Self-efficacy is related in one way or another to motivation.

As the results section shows, there is a significant positive relationship between locus of control and students' motivation for achievement. Thus, the seventh hypothesis is confirmed. This finding conforms to the findings of Hansemark (2003), Langan-Fox et al. (2010). A high inner locus of control leads one to think that he can positively affect his destiny, his life circumstances act upon strict discipline and constant effort; hence he should feel responsible for his behavior and deeds so that he can willingly step up the roads of success. On the contrary, outer locus of control is an indication of one's low level of self-confidence; he counts external factors or accident as responsible for his failures in life. In consequence, he has a low level of motivation to keep up the road of success, and experiences despair not only in education but also in various aspect of personal life.

The seventh hypothesis suggests that the five-fold characteristics (neuroticism, extrovertist, openness, agreement and conscientiousness), self-efficacy and locus of control are intertwined with students' motivation for achievement. As Table 3 indicates, multiple correlation coefficients for linear combination of predictor variables and the motivation for achievement in a hierarchical fashion and the coefficient of determination equals 0.732 and 0.536, respectively at 0.001 level of significance. Therefore, the seventh hypothesis is confirmed. It seems that self-efficacy plays the most significant role in raising students' motivation for achievement. Conscientiousness and locus of control are also effective on a secondary level. Conscientiousness connotes one's perseverance, order and discipline, and fidelity which can lead to the formation of a sound pattern of studentship. As such, students who enjoy a high degree of individual compatibility will also enjoy higher levels of motivation. Likewise, inner locus of control is also an indicator of belief in one's capability in controlling success and failures. This eventually leads to high levels of motivation for achievement.

In a research study conducted with the aim of revealing the relationship between home atmosphere quality, locus of control and motivation for achievement, Bansal, Thind, and Jaswal (2006) concluded that a relationship holds between locus of control and motivation for achievement. Moreover, Bipp et al. (2008) carried out an experiment on 160 university students in an attempt to investigate the relationship between characteristics, motivation for achievement and intelligence. Their study revealed that these notions are inter-related.

In all, it can be concluded that to predict students' motivation for achievement, one can take the advantage of a predictor equation with fewer variables and indicate how self-efficacy, conscientiousness and locus of control can predict a high level of motivation for achievement.

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