



Studying the Role of Academic Hardiness in Academic Achievement of Students of Islamic Azad University, Bandar Abbas Branch

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ABSTRACT

This study aimed to study the role of academic hardiness in academic achievement of students of Islamic Azad University of Bandar Abbas branch. Material and Methods: This study is an applicable kind of study regarding the objective of the study. This study is also a descriptive-correlational kind of study considering the method used for collecting the data of the research. For this purpose, 325 students of Islamic Azad University of Bandar Abbas branch were selected using random stratified kind of sampling method. After collecting data of the research, Pearson's correlation coefficient and simultaneous and stepwise regression were used in order to analyze the collected data of the research. The questionnaire tool was used in order to collect the data of the research. Kalantar and Shahni Yeylagh questionnaire was used in order to measure the psychological hardiness criteria while the total GPA scores of all the students was used in order to measure the academic achievement criteria. Findings: Data analysis showed that academic hardiness and academic achievement are correlated ($r=0.0254$). There was a significant relationship between academic hardiness and academic achievement in 0.01 level of significance. It can be inferred that the R^2 obtained from the regression model shows that the academic hardiness can explain 10% of the changes in academic achievement of students of Islamic Azad University of Bandar Abbas branch. On the other hands, the remaining 90% of the changes in academic achievement is explained by other factors.

Keywords: Academic Hardiness, Academic Achievement, Students

INTRODUCTION

Nowadays, one of the most important and influential organizations in the world is the university. The university is considered as the kind of organization, which delivers professional and committed individuals to the community. The core objective of establishment of this organization is primarily humanization and secondly expertise.

In other words, the objectives of establishment of this kind of organization are as follows: (a) conversion of naive and committed individuals to healthy, creative, mature, balanced and developed individuals; (b) supplying the demands of human resources at different levels and in different cultural, social and professional sectors [1].

Higher education has always faced so many problems in the context of limitations relevant to the field of education and research. Meeting predetermined objectives of education and research sector largely and directly depends on how much the students have progressed in their academic achievement. The educational and research facilities provided for the students are not the same due to various reasons. Therefore, every year there may be several students in most of the universities who did not show significant progress in academic achievement. Thus, these students may face so many problems due to lack of academic progress in the university [2].

One aspect of progress in the higher education is academic achievement. This concept is defined as the knowledge or personal and general skills acquired in the courses taught in the educational centers. The level of knowledge and skills of the students in these centers are measure by several either predetermined tests or implications (scores) or both of them. These tests or scores are defined by the instructors according to the students' academic achievement in the university [3].

Review of the literature in this field suggested there are several effective factors on increasing and enhancing the quality of education. Some of the most important factors in this context are as follows: the factors relevant to the professors and teachers, the factors related to the students, the factors relevant to the educational environment and facilities, factors related to content of the educational courses, factors relevant to management and educational leadership.

There are so many variables in the individual dimension of the academic achievement. These variables affect personal academic achievement of the individuals. These factors include intelligence, age, income, etc. These factors are known as behavioral and psychological factors. The one psychological factor that affects academic achievement is academic hardiness. This factor was not thoroughly studied by the researchers. This factor also plays an important role in academic achievement. Therefore, this study investigated the role of these two variables on academic achievement. The individual hardiness concept encompasses both personal cognitive and behavioral aspects.

The hardiness character formulated by Kobasa [4] is based on the theoretical framework, which existential psychologists have introduced about the degree and intensity of a proper living. Kobasa [5] defined hardiness character as a combination of beliefs about oneself and the world using existential theories. This includes three components of commitment, control and challenge. Regarding the perspective of Kobasa, a hardy individual is the one who has the following three general characteristics:

a) He believes that he can control the events and can influence them. He believes that psychological stressors can be changed.

b) He is able to feel deep tribute and commitment to activities that he should do. In other words, he is deeply involved with his daily activities.

c) He expects a change in his behavior simultaneous with an exciting fight for life. He believes that development along with an exciting fight for life deeply affects the human growth. He considers this change as an aspect of ordinary life [5].

Westman [6] conducted a study on men and the women who enrolled in Army Cadets College. They suggested that higher psychological hardiness is associated with higher academic success. Patton and Goldenber [7] conducted a study on 41 nursing students. They found out that psychological anxiety and hardiness can affect academic success.

Moreover, psychological hardiness is positively related to mental health and academic performance. Alice and Shanisi studied the relationship between hardiness and academic performance and social capability. They found out that psychological hardiness is associated with academic achievement [3].

Naderi and Hussaini [8] performed a study titled as the relationship between life expectancy and psychological hardiness of the students. They conducted a study on the students (boys and girls) of Islamic Azad university of Gachsaran Branch. They studied this relationship among the student who had enrolled in this university in 2005-2006 academic years. The results of their study showed that there is a positive and significant relationship between life expectancy and psychological hardiness. Newstid [9] conducted a study in this field and showed that there is a positive correlation between academic achievement and meaning orientation (deep approach to study or deep learning) at various stages of education in students who study psychology.

The findings of this research can be considered as a resourceful guideline for education and training managers, especially school counselors and the teachers and instructor teaching in the universities. It can also be beneficial in various scientific aspects within the country. Moreover, this study can help to generalize the findings of previous research studies to broader context. It can also add new information to the existing knowledge in this context.

The basic research questions are as follows:

1- Is there a significant relationship between academic hardiness and academic achievement of the students studying in Islamic Azad University of Bandar Abbas branch?

2- Is there a significant relationship between the components of academic hardiness and academic achievement of students of Islamic Azad University of Bandar Abbas branch?

MATERIALS AND METHODS

This study is a practical kind of study considering the objective of the study. This is also a descriptive-correlational kind of study regarding the method used for collecting data of the study .

The statistical population of the study included all male and female students who enrolled in the Islamic Azad University of Bandar Abbas branch in 2012-2013 academic years. These students studied in following fields of study: humanities, Basic Science, Engineering, Agriculture and Natural Resources and Marine Science and Technology. The statistical population size was equal to 12000 individuals. Using stratified randomized method, 325 individuals were selected from the statistical population of the study. The sample size was estimated using Cochran's formula.

The psychological hardiness questionnaires and students' GPA scores were used in order to collect the data needed to measure the variables of the research .

Academic hardiness questionnaire used in this research is Kalantar and Shahni Yeylagh questionnaire. This questionnaire includes 24 items, which measure three components of commitment, control and challenge. This

questionnaire is developed based on a scale included seven responses ranging from extremely agreed to strongly disagreed. The reliability and validity of this questionnaire was studied in several researches. Kalantar and Shahni Yeylagh reported the reliability of this scale as 90% using Cronbach's alpha coefficient method in their study while they reported this criterion as 85% using splitting method. In the present study, Cronbach's alpha coefficient was used to determine the reliability of the test. This value was equal to 85% .

In this study, the questionnaire was distributed among the individuals of the sample. They filled out the questionnaire. Then, the questionnaires were collected. The collected data of the research was analyzed using SPSS statistical software. The statistical methods used in this study included Pearson correlation coefficient and stepwise and simultaneous regression analysis .

RESULTS

The data obtained from the statistical analysis showed that there is a significant relationship between academic hardiness and its relevant components and academic achievement. The findings related to this question are listed in Table 1.

Table 1. The summary of hardiness Pearson correlation coefficient

Hardiness	Commitment	Control	Challenge
0.254**	0.263**	0.088**	0.256**

According to the information in the above table, there is a significant relationship between academic hardiness and academic achievement in 0.01 level of significance. In other words, the academic hardiness and academic achievement are correlated ($r=0.254$). The estimated coefficients for each one of the hardiness components showed that there is a significant relationship between academic achievement and the challenge component at 0.01 level of significance ($r=0.254$). Moreover, there is a significant relationship between the commitment component and academic achievement ($r=0.263$). The correlation coefficient of the control component and academic achievement is equal to 0.088. Then, there is no significant relationship between the control component and academic achievement at 0.01 level of significance. The simultaneous regression analysis was used in order to obtain the prediction coefficients between the predictors (academic hardiness of its relevant sub-components) and criterion variable (academic achievement). Statistical findings of this analysis are shown in Table2.

Table 2. Summary of simultaneous regression analysis of academic hardiness

Model	R	R ²	Adjusted R ²	Standard error of the estimation
1	0.254	0.064	0.061	1.85060

The R² value obtained from the regression model showed that the academic hardiness could explain 0.064 of the changes in academic achievement of students of Islamic Azad University of Bandar Abbas branch. Moreover, the remaining changes in the academic achievement of the students are explained by other factors.

Table 3. Summary of the results of ANOVA analysis relevant to the academic hardiness

Model	Model index	Sum of squares	Degree of freedom	Mean of squares	F-value	Level of significance
1	Regression effect	70.820	1	70.820	20.679	000
	Remaining	1030.842	301			
	Total	1101.662	302			

The results of ANOVA regression analysis are presented in table 3. In this analysis, the significance of overall regression model is tested. According to the above table, F-value is equal to 20.679. This F-value is significant in 0.001 level of significance.

Table 4. The coefficients of simultaneous regression equation to predict the academic hardiness variable

Model	Non-standard coefficients	Standard coefficients	t-value	Level of significance
	B	Beta		
	B-value	Standard error value	Standard value	
Intercept	12.270	0.803	-	000
hardiness	0.032	0.007	0.254	000

Table 4 presents the regression coefficients of contribution of the academic hardiness variable in predicting the criterion variable (academic achievement). According to the above table, academic hardiness prediction

variable can significantly predict the changes in the academic achievement (criterion variable). The hardiness variable is significant at 0.01 alpha level of significance ($B=0.032$ and $t=4.547$). In other words, 0.032 changes are made in the standard deviation of academic achievement variable per one unit change in the standard deviation of academic hardiness variable.

The simultaneous regression analysis method was used in order to determine the significance of multiple relationships between the components of psychological hardiness and the academic achievement. The data relevant to this analysis are shown in table 5.

Table 5. Summary of simultaneous regression analysis of components of the academic hardiness and academic achievement

Model	R	R ²	Adjusted R ²	Standard error of the estimation
1	0.317	0.10	0.09	1.82077

According to the presented data in the above table, the R² obtained from the regression model shows that hardiness components can explain 0.10 of the changes in academic achievement of the students of Islamic Azad University. Moreover, the remaining changes are explained by other factors.

Table 6 . ANOVA analysis of components of academic hardiness and academic achievement

Model		Sum of squares	Degree of freedom	Mean of squares	F-value	Level of significance
1	Regression effect	110.418	3	36.806	11.102	000
	Remaining	991.244	299	3.315		
	Total	1101.662	302			

The data relevant to test the significance of the total regression model is presented in table 6. According to table 6, F-value is equal to 11.102. This F-value is significant in 0.01 level of significance. Then, there is a linear relationship between components of academic hardiness and academic achievement.

Table 7 . simultaneous regression equation coefficients to predict the hardiness components based on academic achievement variable

Model	Non-standard coefficients		Beta	t-value	Level of significance
	B	Std.Error			
Intercept	12.490	0.804		15.538	0.000
Challenge	0.062	0.019	0.212	3.174	0.002
Control	-0.032	0.020	-0.185	-1.615	0.107
commitment	0.067	0.021	-0.207	3.211	0.001

Table 7 shows the regression coefficients of contribution of components of academic hardiness in predicting the changes in criterion variable (academic achievement). As it can be seen in the table, the challenge component is significant in 0.01 level of significance ($Beta= 0.212$ and $t=-0.207$). Moreover, the commitment component is significant in 0.01 level of significance ($B=3.174$ and $t=3.211$). However, the control component is not significant in 0.01 level of significance ($Beta=-0.185$ and $t=-1.615$). This finding means that the prediction components of challenge and commitment can significantly explain the changes in criterion variable (academic achievement).

The stepwise regression method was used in order to determine the significance of multiple relationships between the components of psychological hardiness and the academic achievement. In the stepwise multiple regression method, the variable that has the highest correlation with the criterion variable is first entered in the equation. Then, other variables are entered into the regression model based on partial and semi-partial correlation. This action is continued until there may be no significant relationship between other variables and the criterion variable.

Table 8 . the results of correlation coefficients and determination coefficient between the prediction variables and criterion variable

Model	Correlation coefficient R	Determination coefficient Rsquare	Adjusted determination coefficient R	The error of standard deviation estimation
1 commitment	0.263	0.069	0.066	1.84584
2 commitment and challenge	0.304	0.092	0.086	1.82564

The above table presents the results of correlations coefficients and determination coefficients between prediction variables and the criterion variable. The variables were added to the model at 2 steps. The level of correlation coefficient between prediction variables and criterion variable increased by adding the variables at two steps. At the first step, the level of correlation coefficient between the commitment component and academic achievement was equal to 0.0263. However, at the second step, by adding the challenge component, the level of correlation coefficient increased. This coefficient was equal to 0.304 at the second step. R^2 also increased. This variable was equal to 0.066 at the first step. However, it increased in the second step. This value was equal to 0.086 at the second step. By adding the third component to the model, the correlation coefficient was not a partial correlation coefficient. Moreover, this correlation coefficient was not significant. Then, this coefficient was excluded from the model.

Table 9. the results of ANOVA analysis and step-wise regression

Model			Sum of squares	Degree of freedom	Mean of squares	F-value	Level of significance
1	commitment	Regression effect	76.117	1	76.117	22.340	
		Remaining effect	1025.545	301	3.407		
		Total	1101.662	302			
2	Commitment and challenge	Regression effect	101.744	2	50.887	15.268	
		Remaining effect	999.887	300	3.333		
		Total	1101.662	302			

This table presents the results of stepwise regression ANOVA analysis. The regression model is only significant in two steps. The significance of the regression model confirms that there is a linear relationship between the variables of commitment and challenge and academic achievement.

Table 10. the coefficients of stepwise regression equation based on the correlation between the prediction variables and criterion variable

Model		Non-standard coefficients		Standard coefficients	t-value	Level of significance
1	intercept	12.726	0.678		18.783	000
	commitment	0.084	0.018	0.0263	4.727	000
2	intercept	11.934	0.728		16.383	000
	commitment	0.058	0.020	0.0180	2.883	0.004
	Challenge	0.05	0.018	0.174	2.755	0.006

The above table presents the coefficients of stepwise regression equation and the contribution of prediction variables in predicting the changes in criterion variable. In the first step, by adding the commitment variable to the regression model, the B value will be equal to 0.084 and t-value will be equal to 4.727. This t-value is significant in 0.01 level of significance. This means that 0.084 changes are made in standard deviation of the criterion variable per one unit change in standard deviation of the commitment variable.

In the second step, the challenge component is added to the model. The B value will be equal to 0.05 and the t-value will be equal to 0.006. This t-value is significant in 2.755 level of significance. This means that 0.05 changes are made in standard deviation of the academic achievement per one unit change in standard deviation of the challenge commitment.

DISCUSSION

The findings of the research showed that there is a significant relationship between academic hardiness and academic achievement. This relationship is significant in 0.01 level of significance. Therefore, psychological hardiness can explain 0.01 of changes in the academic achievement. The obtained correlation coefficient showed that there is a relationship between commitment, challenge and control components and academic achievement. However, in the stepwise regression analysis and investigating the relationship between the academic hardiness components and academic achievement, it was found out that commitment and challenge components remained in the regression model at two steps. Moreover, the relationship between these two latter components and academic achievement was significant. However, the relationship between control component and the academic achievement was not significant because it added an increased level to the semi-correlation coefficient. Then, it was excluded from the model. The findings of this research were in line with those obtained in the study conducted by Kobasa [4]. Based on current research findings and those obtained in the study conducted by Kobasa [4], hardy characters try to have a realistic assessment of stressors when they face stressful events. They also try to better understand these stressors. They attempt to control or eliminate stressors using their

recognition from the stressors. They also try to select appropriate coping methods to control or eliminate these stressors. In this regard, they benefit from social skills and supports in order to control the stressors .

Given that the population of this study is limited to students of Islamic Azad University of Bandar Abbas branch, it is recommended that generalization of the results to other populations be made with caution.

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