

Predicting Factors of Higher Education in Iran

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ABSTRACT

Aim: This study is carried out with the aim of determining the predicting factors of higher education in complementary educations among the students of basic sciences in Payame Noor University of Gonbad unit/city in Iran.

Method: The population of this study consists of 248 male and female individuals, who were chosen on the basis of field- questionnaire method and classifying sampling were chosen by proper allocation. The research data were collected based on researcher-made questionnaire and 27 questions were considered after mastership pilot. Data was analyzed with factorial analysis and the main components.

Findings: The obtained results indicate that the most important factor in motivating students to continue their education is the personal and inner motivations to reach a future with economic stability. Sexuality has the least influence among these factors. The cultural and social factors, family pattern, and university environment which rise from society structures are considered as the effective factors, and ranked after the element of supplying the future and its economical aspect.

Conclusion: Eight predicting factors in higher education were identified by the preference of effectiveness.

KEYWORDS: Motivation; main components; special values; orthogonal period; factorial analysis.

1. INTRODUCTION

So many studies have been performed in the case of predicting educational achievement. Since the concept of educational achievement is wide-spread, so many variables are studied to predict it. Some studies consider variables such as cognitive abilities, emotional matters and particularly the big-five theory about personality and have found that personality can be a predicting variable of educational achievement (Chamorro-Premuzic and Furnham, 2003; Goff and Ackerman, 1992; Martin and Difendroff, 2003; Paunonen and Ashton, 2001; Paunonen and Nichol, 2001).

Another part of studies considered some variables such as family, university and social variables (Masali, 2007), self-respect (Abosary, 2009), learning method (Bosato *et al.*, 2009), relationship between personality type and educational achievement (Kettle and Batcher, 1968; Aizenk, 1967; Klain and Gil, 1977), relationship between educational achievement and IQ (Elshat and veynam, 1992; Harris, 1940; Nisser *et al.*, 1966; Sternburg and Kauffman, 1998). Their findings indicate that educational achievement is correlated with all of these variables. At the same time, some of these investigations did not report a meaningful relationship between personality type and educational achievement (Alik and Rilo, 1997; Dillinger and Eref, 1991; Green, Peters and Webster, 1991; Mitta and Kumar, 1985; Roteshtain *et al.*, 1994). Other groups of researchers have studied the effective external and environmental aspects that form the educational achievement, such as social position and respect (Hajian *et al.*, 2006), low quality of instructional factors, family income, students' marriage (Molavi *et al.*, 2007), motivational damages that cause a type of pessimism, anxiety and depression that finally lead to students' educational function drop (Askari, 2006). The extent of these investigations proceeds such that it suggests the parents' interference and cooperation in children's learning as one elements of educational achievement (Majoribanks, 2002; Hakofa and Fincham, 1995; Ginsburg and Bronstein, 1993; Delgado- Gaitan, 1992). Coleman's (1988, 1989, and 1990) social capital theory delineates the complexity of relationships among distal social spaces, immediate family settings, and an individual's behavior. Coleman suggested that family influences are separated into three distinct components comprised of financial, human and social capital. According to Coleman (1988), human capital reflects the resources that parents use to create the positive learning environment. In contrast, family social is defined by the resources that individuals may access through social ties (Frank and Yashimoto, 1998). As such, the amount and quality of academically-oriented interaction between parents and children, their interpersonal relationships, family structure, and greater community attributes impacts their academic performance (Mullis, Rathge and Mullis, 2003).

In addition to variables such as family income and economical level, and the case that economic conditions, such as possessing or non-possessing a house, can affect the interest to children's education continuation, some

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newer concepts have also been proposed (Mayer, 1997; Aronson, 2000; Green and White, 1997; Williams Conley, 1997). One of these concepts is family resource capital. This concept which rises from Coleman's studies points to these factors: parent education level, parent income level, reports of home environment, and cognitive simulation. Coleman (1988) defined resource or financial capital as an effect of parent financial and human capital on the schooling of children. Discussing the effect of parental human capital on the generation of human capital by the children, Coleman indicated that social capital represents a filter through which the financial and human capital of parents is transmitted to, and used by children. Children who come from families with better education and higher socioeconomic status obtain more years of schooling (Sewell, Hauser and Wolf, 1980). These investigations show that the set of predicting factors of higher education is so vast and extended.

In this study, we made our efforts to study all of the effective predicting factors of educational achievement among male and female students of B.A. degree in basic sciences to continue their education, regarding the cultural conditions and zone in Iran, by preparing questionnaires. In addition to sexuality, personal tendencies and propensities on the one hand, and family, social and environmental conditions on the other hand are studied. Furthermore, the importance and value of each variable is determined.

2. METHOD

Research tools:

Questionnaire

Concerning particular climate, as well as cultural and social conditions, the compiler made questionnaires are used and regarding the existing questionnaires, 110 questions were planned according to the conditions. Then to obtain the value and justifiability of questionnaire, the experimental consideration was done in the form of pilot study on the 40 samples of target questions which were explanatory of inner and social factors. Coincide with the cultural- social conditions, a questionnaire involving 27 questions was prepared. Afterward by obtaining the Cronbach's alpha, 27 questions were chosen as the final questions of the examination which had the capability to predict the octet factors.

Sample

Students of basic sciences in Gonbad Payam e Noor University (4th term and higher) who were 752 students consisted the statistical population of this research. According to Morgan's sampling table, 257 samples were determined that were received 248 sound and completed questionnaires. Size of the considered population was $N=771$ (the students of basic sciences who were in terms up to 4th). According to Morgan's sampling table, amount of sample was obtained $N=257$ which was fulfilled according to sampling with proportionate allocation in seven basic sciences, including mathematics, computer sciences, architecture, statistics, physics, computer engineering, and IT engineering, and number of samples was 32, 40, 46, 32, 37, 54, and 16, respectively, which consisted of 56.4 percent female and 43.6 percent male students. Also, the age average for females was 22 and for males it was 23.

Analyze method

The analysis method was parametric. Using KMO coefficient, factor analysis, substructure of principal components, eigen values, and Varimax orthogonal period, eight groups of predicting factors were obtained whose effectiveness value and portion in total gained variance are provided in the first table. Besides, the type of forming factor as correlation rate is presented in the second table. According to KMO coefficient and considering the optimization rate of factorial analysis method presented in Table 1 exit of this coefficient we find that according to the numerical method of 0.737 that is obtained from the coefficient, use the factorial analysis method is evaluated to consider the appropriate and good factors.

Also according to the above mentioned questionnaire, it uses the factor analysis method and principal components to recognize the factors which are performed by the software package SPSS 18. In accordance with field- questionnaire and choosing the appropriate sample from Morgan's table, the provided indicators in the questionnaire are determined by principal components method, according to number of particular quantities, factorial analysis, effective factors, and their priority effect.

3. RESULTS

According to the quantities presented in Table 1, eight components were obtained from the special quantities which totally cover about 75% of total variance. Also, the cover percentage of each factor was determined which is presented in descending form in the table.

According to the orthogonal period method (Table 2), the results shown in this table were obtained considering the correlation coefficients. So, according to the questions related to predicting factors of educational achievement, we can mention them from one to eight based upon the gained importance and value; they are classified in two social or

external and personal or internal classes. The purpose of social class is the external effects of that person and the person's individual or internal class of internal motivations to continue the education.

- 1- Internal motivation factor (personal or internal);
- 2- Economic conditions factor (social or external);
- 3- Cultural – social factor (social or external);
- 4- Obtaining the social rank factor (social or external);
- 5- Influence from professors factor (social or external);
- 6- Family conditions factor (social or external);
- 7- University environment factor (social or external);
- 8- Sexuality factor (personal or internal).

Table 1: Sum of variance

Factors	Special values			Variance portion of any factors			Variance portion of aged factors		
	Numerical portion	Portion (%)	Sum (%)	Numerical portion	Portion (%)	Sum (%)	Numerical portion	Portion (%)	Sum (%)
1	3.96	18.68	18.68	3.96	18.68	18.68	3.03	17.22	17.22
2	2.53	11.36	30.04	2.53	11.36	30.04	2.55	11.46	28.68
3	1.79	8.64	38.68	1.79	8.64	38.68	1.96	9.28	37.96
4	1.75	7.48	46.16	1.75	7.48	46.16	1.68	8.23	46.19
5	1.6	6.94	53.1	1.6	6.94	53.1	1.66	8.14	54.33
6	1.36	5.05	58.16	1.36	5.05	58.16	1.64	8.06	62.39
7	1.28	4.75	62.91	1.28	4.75	62.91	1.56	6.76	69.15
8	1.23	4.55	67.46	1.23	4.55	67.46	1.43	6.31	75.46

Table 2: Main aged objects

Questions	No. Components							
	1	2	3	4	5	6	7	8
Q 1	0.671	-0.005	0.056	0.261	-0.004	-0.183	-0.140	0.108
Q 4	0.637	-0.038	0.066	-0.111	0.056	0.177	0.136	-0.074
Q 25	0.584	-0.050	0.219	0.160	0.011	-0.024	-0.101	-0.333
Q 12	0.571	0.194	-0.308	0.141	0.061	-0.054	0.191	0.160
Q 5	0.522	0.025	0.229	-0.026	-0.106	0.038	0.113	0.329
Q 13	0.513	0.049	-0.081	0.298	-0.146	0.224	0.178	-0.086
Q 15	0.041	0.795	0.070	-0.066	0.053	-0.058	-0.056	0.124
Q 14	-0.078	0.708	0.162	0.045	-0.032	0.007	0.227	-0.118
Q 10	0.347	0.658	0.002	-0.002	0.147	-0.079	-0.070	0.078
Q 26	-0.134	0.513	-0.098	0.166	-0.056	0.087	-0.147	-0.311
Q 3	0.362	0.027	0.630	0.225	0.069	-0.042	-0.003	-0.137
Q 24	-0.006	0.151	0.589	0.118	-0.139	-0.156	0.065	0.135
Q 18	0.405	0.130	0.526	-0.118	-0.130	0.196	0.400	-0.139
Q 19	-0.017	0.191	-0.499	0.238	-0.259	0.472	0.172	0.105
Q 2	0.205	-0.092	0.144	0.805	-0.012	0.072	-0.100	-0.008
Q 7	0.220	0.204	0.073	0.682	0.117	-0.072	0.089	-0.081
Q 23	-0.146	0.146	-0.037	0.063	0.687	0.093	0.055	0.070
Q 11	0.267	0.366	0.099	0.013	0.567	-0.014	-0.231	0.076
Q 20	0.030	0.294	0.059	-0.092	-0.563	0.334	-0.109	-0.184
Q 9	0.425	0.156	0.296	0.173	-0.437	-0.059	-0.049	0.314
Q 27	0.112	-0.150	-0.105	-0.039	-0.016	0.745	0.003	0.100
Q 6	-0.010	0.252	0.528	0.115	0.051	0.529	-0.113	0.198
Q 8	-0.113	0.319	0.097	0.057	-0.271	-0.419	-0.059	0.390
Q 17	0.016	0.061	0.080	0.197	0.124	-0.057	0.769	0.122
Q 21	0.157	-0.096	-0.053	-0.171	-0.071	0.051	0.635	0.005
Q 16	0.012	-0.077	-0.031	-0.076	0.238	0.183	0.076	0.741

4. DISCUSSION

The obtained results of this study, is confirmed the results of other studies. As results indicate, the most effective factor for education continuation is internal motivation. Interpreting the internal motivations is so complex. On the one hand, we can point to the mental abilities and on the other hand to the individual interests and also planning for the future with economic and social stability. It is about three decades that social – cognitive models

allocate the greatest mass of studies to themselves and indicate that the most important factor in educational achievement is the person's beliefs and evaluation of his aim and interests (Eccles and Wigfield, 2002; Pintrich, 2003; Weiner, 1992). Also in this finding, the person's viewpoint to the life, his opinion about the future, his attempts and interpreting them by predicting and securing future and trying to provide better life conditions gain more importance (Pintrich, 2003; Wigfield, 2002; Schiefele, Roeser and Davis – kean, 2006; Eccles and Rodriguez, 1998; Wigfield, Eccles). Even this attempt was not conscious. The consciousness reference is coming.

Immediately after internal tendencies and motivations for education continuation, the economical factor is presented. This finding is in agreement with so many studies that confirm the role of family's economic factors, the living region and family's financial power to continue the education (Mayer, 2000; Aronson, 2000; Green and White, 1997; Conley, 2001). Besides, some of these studies point to the factor of possessing or non-possessing a house by the family and its influence on motivation of education continuation (Williams, 2006).

The results obtained concerning the third factor (cultural and social factor) and the fourth factor, i.e. the social rank factor, agree with the results of other studies. The studies show that situational interests that are rapid and actual reactions toward the learning conditions have the special role (Renninger, 2006; Mitchell, 1992; Schraw, Flowerday and Lehman, 2001; Hidi, 1990).

The fifth factor in this research is named the influence of professors and emphasizes the direct effectiveness rate of professors and taking effect from professors. Professors often affect the students as the best instance of educational success and form their decisions whether or not to continue their education. Taking effect is started from apparent behaviors of professor and will continue to the teaching method and also the professor's insight to science, world, humanness, and morality.

Also, the sixth factor obtained in this research named family factor is confirmed in most studies. Family's economical and social situation, parents' insight to education, the methods that family applies to create motivation in the children, and psychological-social results obtained from success in education have long-term effect on motivation of children to continue their education (National institute of child health and development, 2005; Ortiz, Stowe and Arnold, 2001; Scarborough and Dobrich, 1994; Berline, Brooks-gunn and Aber, 2001; Burgess, Heach, and Lonigan, 2002).

Also university environment as the seventh factor plays a determinant role in students' education continuation. Instructional environment and existed facilities are cases that have been confirmed in previous studies (Rimm-Kaufman and Chiu, 2007; Brock *et al.*, 2008).

Finally, the eighth and last factor is sexuality. The weakness of this factor indicates that sexuality cannot have an essential role in predicting the students' education continuation.

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