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DEMOGRAPHIC CHARACTERISTICS AS CORRELATES OF ACADEMIC ACHIEVEMENT OF UNIVERSITY STUDENTS

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ABSTRACT

This study was designed to find out the relationship of demographic characteristics with academic achievement of university students. The relationship of selected demographic characteristics including gender, age, location of residence, household income and parents' education with academic achievement was examined. Correlation analysis was performed to measure the relationship among the variables and regression analysis was performed to examine the predictive significance of demographic characteristics for academic achievement. Results indicated a significant correlation between academic achievement and demographic characteristics. The model of demographic factors was found significant predictor of academic achievement of university students which accounted for 1i% variance in academic achievement.

Keywords: Demographic characteristics, Academic achievement, University students

INTRODUCTION

Quality of education is mostly assessed on the basis of academic performance, and achievement scores are considered to be its primary indicators. However, achievement scores alone neither provide sufficient understanding of the causes of students' success or failure, nor suggest the ways for improving the achievement. There is a need to identify and analyze the factors that can affect academic performance. The understanding of these factors can suggest some measures for improving the quality of education.

Research on the academic achievement suggests that it has relationship with some demographic charateristics. For example, Jaeger & Eagan (2007) and Cole & Espinoza (2008) found gender differences in the academic performance of male and female students. Keith, et. al. (2006) found positive relationship between age and academic performance. However, Kaur, et. al. (2010) found that age does not significantly contribute to academic performance of university students in distance learning.

Tuttle (2004) found that students' academic performance correlates with locality of residence and household income. Davis-Kean (2005) found that parents' education and household income are moderate to strong predictors of academic achievement. Acharya and Joshi (2009) found that parents' education can affect the achievement motivation in academic area. Yousefi, et. al. (2010) found relationship between family income and academic achievement of high school students.

The above stated research studies indicate that some demographic factors can affect academic achievement of students at different study levels. This study was intended to examine the relationship of demographic factors with the academic achievement of university students. It was hypothesized that some demographic factors may be significant predictors of academic achievement of university students.

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MATERIALS AND METHODS

The sample of the study consisted of 595 students who were randomly selected from three public sector universities located in Islamabad. Male students constitute Forty Eight percent of the sample (N= 285) and of female students constitute 52% (N= 310). Their age range was 18-30 with mean age 22.14 (SD= 4.36).

The instrument included information regarding demographic factors including age, gender, location of residence (Rural/Urban), household income (monthly earnings of the family in Pakistani Rupees) and parents' education level (according to the system of education in Pakistan). Students also reported their Cumulative Grade Point Average (CGPA) in the previous semester.

The participants of the study were personally contacted for data collection and briefed about the purpose of the study. The data was collected from the students enrolled in Bachelor and Master level programmes in three universities located in Islamabad -----International Islamic University Islamabad, National University of Modern Languages and Quaid-e-Azam University.

Data was analyzed through Statistical Package for Social Sciences (SPSS-17). Pearson Product Moment Coefficient of Correlation was calculated to see whether significant correlation exists among the variables. Regression analysis was performed to see which of the demographic factors have predictive significance for academic achievement.

RESULTS AND DISCUSSION

Academic achievement of university students showed significant positive correlation with gender (r = .18, p<.01) revealing higher GPA of female students than that of male students as male students were coded as 1 and female students as 2. A significant positive correlation of age with CGPA (r = .12, p<.01) indicated increase in CGPA with increase in age. Significant correlation of locality (r = .09, p<.05) showed higher CGPA of students belonging to urban areas than that of the students from rural areas as rural area was coded as 1 and urban area as 2. Positive correlation of mother's education (r = .13, p<.01) and father's education (r = .10, p<.01) revealed higher CGPA of the students having more educated parents. Relationship of GPA with household income (r = .14, p<.01) indicated increase in GPA with increase in income.

Table 1 shows the differences in mean CGPA regarding gender, age, locality and income.

Table 1: Comparison of Mean CGPA Regarding Gender, Age, Locality and Income (N = 595)

Variable	Groups	N	Mean GPA	Standard Deviation	Standard Error Mean	*t*-values
CGPA	Male	268	2.62	.735	0.474	-5.008**
	Female	347	2.91	.643	0.363	
	Older	274	2.73	.635	0.041	2.276*
	Younger	341	2.61	.593	0.034	
	Rural	240	2.71	.746	.051	-2.011*
	Urban	375	2.84	.665	.036	
	High Income	250	2.73	.596	.039	2.180*
	Low Income	365	2.62	.624	.034	

*p< .05 **p< .01

Female students had significantly higher CGPA than male students (t = -5.008, p< .01); students having age above the mean age of the group had significantly higher mean CGPA than the student

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with age below mean (t = 2.276, p< .05); the students belonging to urban areas had significantly higher CGPA than students from rural areas (t = -2.011, p< .05); and students with income above the mean income of the group had higher CGPA than students with below mean income (t = 2.180, p< .05).

A test of factorial ANOVA was conducted to examine the effect of mother education and father education on academic achievement of university students (Table 2). The result showed significant main effect of mother education (F (7, 554) = 4.210, p< .01) as well as significant main effect of father education (F (7, 554) = 2.293, p< .05) on academic achievement. Also the interaction effect of both mother education and father education had a significant effect on academic achievement (F (26, 554) = 1.984, p< .01).

Table 2: Factorial ANOVA Test to Examine Effect of Parents' Education on Academic Achievement in the First Semester of University.

Source	df	*F*	ή²
Corrected Model	40	3.216**	.201
Intercept	1	1420.335**	.735
MotherEd	7	4.210**	.055
FatherEd	7	2.293*	.030
MEd × FEd	26	1.984**	.092
Error	554		
Total	595		
Corrected Total	594		

** p< .01 * p< .05

Standard regression analysis was performed to see whether demographic variables are predictive of academic achievement after completing first semester in university.

Table 3:Model Summary of Regression Analysis for Demographic Variables Predicting GPA after First Semester in University. (N= 615)

Criterion	Predictors	R	R^2	Adjusted R^2	Std. Error of the Estimate	*F*
GPA2	Gender, Age, Locality, Mother's Education, Father's Education, Income.	.327	.107	.097	. 66514	10.931**

**p< .01

Model summary of regression analysis (Table 3) revealed that when gender, age, locality, parents' education and income were all entered as independent variables, the combination significantly correlated with academic achievement (R = .327) and the model explained approximately 11% variance in CGPA (R^2= .107, F (7, 587)= 10.931, p< .01).

Gender, age, mother's education and income were found significant predictors of CGPA (Table 4) while locality and father education were not significantly predictive.

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Table 4: Relative Significance of the Demographic Variables Predicting CGPA after First Semester in University. (N= 595)

Criterion	Predictors	B	Standard Error	Beta	*t*
EI	(Constant)	1.311	.228		5.736**
	Gender	.337	.062	.239	5.426**
	Age	.030	.007	.182	4.153**
	Locality	.060	.060	.042	1.004
	Mother's Education	.057	.025	.099	2.231*
	Father's Education	.000	.016	.001	.012
	Income	.000	.000	.087	1.994*

**p< .01 *p< .05

A stepwise regression was run to see which demographic variables better predict academic achievement of university students (Table 5). The most predictive variable was gender that entered in the first step and accounted for 4.4% variance in GPA (R^2 = .044). Age entered in the second step adding another 4.4 % to the variance (ΔR^2 = .044).

Table 5: Stepwise Regression for Relative Effect of Demographic Variables in Predicting GPA after First Semester in University. (N = 595)

Criterion	Variables	B	SE	β
GPA2	Step 1			
	(Constant)	2.327	.097	
	Gender	.295	.059	.209**
	Step 2			
	(Constant)	1.412	.210	
	Gender	.392	.061	.277**
	Age	.035	.007	.210**
	Step 3			
	(Constant)	1.358	.210	
	Gender	.360	.062	.255**
	Age	.032	.007	.196**
	MotherEd	.069	.024	.121**
	Step 4			
	(Constant)	1.397	.210	
	Gender	.343	.062	.243**
	Age	.030	.007	.181**
	MotherEd	.056	.024	.098*
	Income	.000	.000	.095*

Note. R^2 = .044 (p< .01) for Step 1; ΔR^2 = .044 for Step 2 (p< .01); ΔR^2 = .014 for Step 3 (p< .05); ΔR^2 = .008 for Step 4 (p< .05).

**p< .01 *p< .05

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In the third step mother education added 1.4% to the variance (ΔR^2 = .014) and finally household income entered in the fourth step and added .8% to the total variance (ΔR^2 = .008). Locality and father's education did not enter the equation, thus, the regression equation predicting CGPA of university students is:

GPA2 = .343 × Gender + .030 × Age + .056 × MEd + .000 × Income + 1.397

The results of this study revealed that some demographic characteristics significantly correlate with academic achievement of university students and the model of demographic characteristics was found to have significant predictive value.

The difference in academic achievement regarding gender was significant, revealing higher academic performance of female students than that of their male counterparts. These results were consistent with the findings of the studies conducted by Jaeger and Eagan (2007) and Cole and Espinoza (2008) that indicated better performance of female students in the first year of college than that of the male students. The difference in the academic performance of male and female students may be attributed to their motivation for academic success (Rusillo and Arias, 2004).

The results of this study revealed that increase in age brings improvement in academic performance. The mean GPA of older students was found to be significantly higher than that of the younger students. These results are comparable to the study of Keith, et. al. (2006) who found positive relationship between age and academic performance.

The academic performance of students from urban areas was also better than the performance of students from rural areas. Moreover, the students having higher household income performed better academically than the students having low household income. These results are in line with the study of Tuttle (2004) who found that SAT scores of students from suburban areas were better than the students from rural and urban areas and also the students from high income families scored higher that those from low income families.

Yousefi, et. al. (2010) also found positive correlation between family income and academic achievement. The students of urban areas usually have better academic facilities than the students of rural areas and the students with better income resources can access to quality educational experience. That may be the reason why these students showed better academic performance.

The results of the study revealed that parents' education has a significant effect on academic achievement of the university students. The results are consistent with the study of Davis-Kean (2005) who concluded that parents' education and household income are moderate to strong predictors of academic achievement and these factors affect academic achievement through parent' beliefs and expectations for their children. Acharya and Joshi (2009) also found that parents' education can affect the achievement motivation.

Aremu, Tella and Tella (nd) found positive correlation between academic achievement and parental involvement. They contend that the degree of children's academic achievement is determined by the degree of their parents' involvement in their education. So, it can be asserted that more educated parents can improve their children's academic achievement by involving in their educational interests and by providing them help and support in educational issues.

The model of demographic characteristics was found to be significantly predictive for academic achievement, explaining 11% variance in GPA of university students. Gender, age, mother's education and household income remained significant predictors of academic achievement in stepwise regression analysis.

CONCLUSION

It can be concluded from this study that some demographic characteristics have significant correlation with academic achievement of university students. It implies that universities may provide some counseling programs for students regarding gender and age differences. Students from areas with low educational resources may be facilitated by providing them better resources for education.

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