Factors Affecting Business Students' Performance in

Arab Open University: The Case of Kuwait

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Abstract

The purpose of this study is to investigate factors affecting student performance in Arab Open University- Kuwait branch. To achieve this objective, all graduate students during the academic year 2009-2010 were examined. The graduates were 566 students, consisting of 353 female and 213 male students. The data were analyzed by using Ordinary Least Square (OLS) multiple regressions. The outcome of the analysis revealed that the Grade Point Average (GPA) of the student is affected by age, score of the high school and nationality. In addition, the results revealed that younger students perform better than mature students and non-national students perform better than national student. The results further revealed that significant gender differences exists, female students perform better than male counterparts in line with a significant number of previous empirical studies. More importantly, the results of the analysis indicated that marital status plays a significant role in determining the student's performance by confirming that married students perform better than non-married counterparts.

Keywords: E-Learning, Open Learning, Arab Open University, Student's performance, Learning preferences, Graduate students

1. Introduction

Determinants of students' performance have received considerable attention in the education literature and continue to be a challenge theme. Student performance is generally viewed as product of socio-economic, psychological and environmental factors. Hence, the factors are expected to vary from one country to another. Hence, the attempt was made in the literature is to identify the factors that affect students' performance and lead to student's success.

Empirical studies in traditional learning of determinants of students' performance have pointed to issues such as student's aptitude, class attendance, gender differences, study effort, instructor's teaching style, computer experience, academic environment and service received. The finding of these empirical studies, however, might not be applicable to the student in open learning such as Arab Open University (AOU) in Kuwait due to the educational differences from traditional one in terms of flexibility forms of learning and freeing students from the constraints of time and place. Hence, the purpose of this study is to examine determinants that affect students' performance in the AOU in Kuwait branch.

AOU is a new nonprofit learning institution founded by Prince Talal bin Abdul Aziz with branches in six Arab countries and Kuwait the headquartered. AOU adopts an open learning methodology as an attempt to minimize the use of physical resources and limit face-to-face interaction. Therefore, the current study is of interest for both lecturers and policy makers. For the former, they can use the outcome of the study to ensure the utilized methodologies to deliver the class material that improve students' academic self-concept. For the latter, it helps to design and implement policies for improving students' performance and the efficiency of education since changing the attitude of students towards open learning and improving the teaching procedures is much easier to pursue than changing background factors affecting students' performance. Moreover, it attempts to treat insufficient high grade in this university.

The rest of the paper is organized as follows: The next section provides a literature review and the research hypotheses to be tested in this study. Then, the data and variable description are presented in section III. While, the findings are discussed in section IV, the conclusion is offered in the final section.

2. Literature Review and Research Hypotheses

Many studies have been undertaken to determine students' academic performance in the university. Most of these studies were conducted in various places (see for example, Australia: Rowe, 1995; Applegate and Daly, 2006; Lang *et al*., 2007. Canada: Harrington *et al*., 2006.Iran: Kiamanesh, 2004; Hedjazi and Omidi, 2008.Ireland: Naher*et al*., 2008. Jordan: Ramadan and Quraan, 1994; Alnabhan*et al.*, 2001; Khader*et al*., 2008; Abbad*et al.*, 2009; Al-Rofo, 2010. Kuwait: Torki, 1988; Al-Otaibi, 1996; Al-Khader, 1996; Al-Rashed, 2001. Malaysia: *Ali et al*., 2009. Pakistan: Hijaz and Naqvi, 2006. Palestine: Naser and Peel, 1998. Saudi Arabia: Atieh, 1997; Abdullah, 2005; Aal-Amro, 2009; Alnaeem, 2010; Al-Twaijry, 2010. South Africa: Roos, 2009.Spain: Díaz, 2003; Fenollar*et al*., 2007.Turkey: Dayıo and Türüt, 2004; Demir*et al*., 2009; Yukselturk2010. UAE: Al-Tamimi and Al-Shayeb, 2002; Harb and El-Shaarawi, 2007. UK: Smith and Naylor, 1993; Arulampalam*et al.,* 2003.USA: Durr, 1999; Rhodd *et al.;* 2000). All these studies employed the cumulate Grade Point Average (GPA) as a common indicator of the student's performance and linked it to physical aspects as well as personality attributes (Waples and Darayseh, 2005). The following section provides brief reviews for these studies.

In Europe, Smith and Naylor (1993) examined determinants of degree performance of students leaving UK universities and found that degree performance is influenced significantly by personal characteristics. They also found that performance of female students is better than the performance of male students in Biological Science and Humanities and worse in Mathematics and Computing. Smith and Naylor observed that both men and women, married individuals do better than non-married students. Arulampalam*et al.,* (2003) examined the probability that an individual medical student will drop out of medical school during their first year of study in UK and found that male students are about 8 percent more likely to drop out than female students. Díaz (2003) observed that older students show the highest failure index and women perform better than men in Spain. Cheesman*et al*., (2006) found that the performance of mature students is better than the performance of younger students. They also found that students who receive for financial assistance outperform others who do not receive financial assistance in the Anglophone Caribbean region. Erdem *et al.,* (2007) concluded that the probability of getting a higher cumulative GPA for students who have graduated from science high schools is higher than the students who graduate from the standard high schools in Turkey. Psalidas*et al*., (2008) used semi-structured interviews to examine the performance of students toward the Programme for International Students Assessment (PISA) in Greece and found that the performance of students in the PISA tend to be independent of the student's gender. Naher*et al*., (2008) found that there is a direct link between attendance and marks awarded in Ireland.

In North America, Keil and Partell (1997) examined the relationship between class size and student achievement in Binghamton University. They found that there is a strong negative relationship between class size and the likelihood of receiving high course. As class size increases, the probability of receiving an A is lowered. Durr (1999) examined factors affecting student performance in principles of macroeconomics courses and found that the ability of students to perform well in principles of macroeconomics courses can be predicted to some degree by applying the student's scores on the first quiz, the percentage change from the first quiz to the fourth quiz, and where the student sits in the classroom. Durr observed that the study skills of seniors are likely to be better honed through practice than freshmen have attained. Moreover, Rhodd *et al*., (2000) examined the factors that could affect the academic success of undergraduate business majors in Florida Atlantic University and found that the student age has no influence on business majors' overall academic success. They also found that the grades earned on the Principles of Economics courses affect the overall academic success or the final GPA of business majors. Rhodd *et al.,* concluded that the grades earned on the Principles of Economics courses as they could serve as an 'early warning signal' of academic success or failure. *Kirk and Spector* (2006) examined the impact of class size on student achievement Cost Accounting and found that students who had taken principles of accounting in larger class groups fared better in cost accounting. They attributed their finding to senior professors who specialize in delivery of this subject. Tremblay *et al*., (2001) found that there is a negative relationship between class size and student's performance in Canada. Harrington *et al*., (2006) added that scores of students in small classes improved by 48%, while scores of students in the large classes improved by 6% percent, implying a decline in learning by 88% by shifting to larger classes.

In Australia, Applegate and Daly (2006) used data collected from a survey of students at the University of Canberra to examine the impact of paid employment on the GPA. They found that there is no large negative effect of paid employment on average grades. They observed that doing some paid employment actually improves grades and students are able to manage their time to ensure there is no large negative effect of paid employment on grades. However, they found there is a positive correlation with the percentage of classes missed and a perception of a more negative effect of employment on grades. Applegate and Daly observed that working up to about eleven hours per week improves marks marginally and the beneficial effects of paid employment appear to decline after

11 hours of work. Lang *et al.,* (2007) added that female students are less experienced with Information Technology than their male counterparts.

In Asia, Kiamanesh (2004) usedprincipal component factor analysis to identify the number of factors that represents relationships among sets of interrelated variables using the Trends in International Mathematics and Science Study (TIMSS) for Iranian students. He provided evidence that Mathematics self-concept, home background, and teaching play significant role in determining the variance in mathematics achievement. Suryadarma*et al.* (2004) found that student performance is strongly influenced by the education level of parents in Indonesia. Hijaz and Naqvi (2006) found there is a positive relationship between the level of mother education and students performance in Pakistan. Wong and Lai (2006) observed that female student-teachers taught better than male student-teachers and female student-teachers' instructional strategies were more creative and well designed than male student-teachers in Hong Kong. Hedjazi and Omidi (2008) found that female students' academic success was more pronounced than males in Iran. *Ali et al.,* (2009) found positive relationship between students' performance and student's demographic, active learning, students' attendance and involvement in extracurricular activities in Malaysia.

In Jordan, Ramadan and Quraan (1994) examined the determinants of students' performance in introductory accounting courses in Yarmouk University and found that grade in accounting principles 101 as prerequisite for all accounting courses play significant role in determining students' performance in accounting. They confirmed the proposition that past academic performance is a significant determinant of future academic performance. They also found that grade at high school plays an important role in determining the performance in accounting principles.Alnabhan*et al.,* (2001) observed that the lack of family support for a student is the main factor behind a low level of student achievement cumulative GPA. Al-Rofo (2010) found that studying a specialization without desire was the most prominent dimension affecting the student's low accumulative averages.

In Palestine, Naser and Peel (1998) examined factors affecting students performance in principles of accounting at Birzeit University. They found that student perceptions of factors associated with class size, the attributes of the lecturer, student effort and the complexity of the course are associated with student performance in a first level principles of accounting course.

In United Arab Emirates**,** Al-Tamimi and Al-Shayeb (2002) used a sample of 256 students to investigate the factors behind affecting student performance in the fundamentals of financial management and found that found that attendance, gender, and semester load are the most significant variables. They also found that significant gender differences exist, with males outperforming females. Moreover, Harb and El-Shaarawi (2007) found that the most important factor that affects student's performance is the student's competence in English and students who participate in class discussion. They also found negative effect of student's performance for the students who are missing too many lectures and living in crowded household and provided evidence that non-national students outperform national students and female students outperform their male counterparts.

In Saudi Arabia, Atieh (1997) examined the student perceptions of the causes of low performance in principles of accounting at King Fahd University of Petroleum and Minerals. He found that the difficulty in exams and the complexity on information processing in teaching accounting principles play significant role in explaining the low performance in principles of accounting. Atieh provided evidence that the majority of the students believe that the obstacles associated with the course refers to the lengthy material covered during the semester and the poor advices. Abdullah (2005) used a sample of 126 male and 111 female students to examine the main determinants of student performance in the Principles of Financial Management course. He found that gender has a significant impact on performance in financial management which indicates the difference in performance between male and female students. He found the performance of the male student depends upon the accounting courses while the female student depends upon economic courses. Alnaeem (2010) added that internal environment plays significant role in the student's performance. Al-Twaijry (2010) observed that the load of weekly registered hours has no negative impact on the student performance.

In Kuwait, Torki (1988) examined the gender on student's performance in Kuwait and found that there were no differences between male and female in neutral condition. Al-Otaibi (1996) investigated the impact of gender on student's performance and found that female students are better than male students. Al-Otaibi observed that the performance of females did not change by academic levels while the performance of males did change in senior year than their peers in junior year. Al-Khader (1996) found that there is a significant correlation between the high school ratio and GPA. He also found that the GPA of the female students was higher than the male students, and the GPA for science division students was significantly higher than those in arts division. Al-Rashed, (2001) used 183 students as a sample of accounting students' to examine the factors associated with performance of the

accounting majors graduated from Kuwait University. He provided evidence that GPA earned by accounting majors at the end of second year is the single most important variable associated with their overall performance. Al-Rashed concluded that GPA and Grade, earned in the second introductory accounting course in admitting students into accounting program, to be more useful than the current reliance on secondary school scores as the main admission criterion.

As it can be seen from the above literature review, these empirical studies have focused on students' performance in traditional universities. Since there are educational and cultural differences between traditional universities and open learning university, Arab Open University- Kuwait, in our case, and since such differences may play a role in shaping the factors that affect this performance, it is important to examine those relevant factors to AOU-Kuwait. Therefore, the current research was undertaken as an attempt to provide some suggestions to improve the quality of education and student's performance in a developing country like Kuwait.

Research hypotheses

In this study, seven null hypotheses were tested for significance level at 0.05 margin of error. They are:

H_1: Gender has no impact on the performance of academic student in AOU- Kuwait branch.

H_2: Age has no impact on the performance of academic student in AOU Kuwait branch.

H_3: Marital status has no impact on the performance of academic student in AOU- Kuwait branch.

H_4: Nationality has no impact on the performance of academic student in AOU- Kuwait branch.

H_5: The high school branch has no impact on the performance of academic student in AOU- Kuwait branch.

H_6: The score in the high school has no impact on the performance of academic student in AOU- Kuwait branch.

H_7: The occupation has no impact on the performance of academic student in AOU- Kuwait branch.

3. Data and Variables Description

All students who graduated during the academic year 2009-2010 at AOU-Kuwait branch were the subject of the study. AOU offers four majors: Business Administration, Information Technology, Art and Education. Data was obtained from the record of the registration department at the University. Data collected included student's GPA in graduation, major of high school, grade in high school, gender, age, nationality and occupation. The profile of the students characteristics included in the current study are summarized in Table 1

Table 1 Here

It is obvious from the Table 1 that there were 566 graduated students, the female were 353 (62.4%) and male were 213 (37.6%). It is noted that average score of half graduate students in the General Secondary Examination was less than 70 percent and more than 50 percent of the graduates aged more than 30 years. This gives an indicator that the AOU has achieved one of its important targets that is to give mature students a chance to complete their academic study. It is also evident from the table that the non-national students' were 363 (64.1%) of the overall student's population while the national students were 203 (35.9%). Most of these non-national students are Arabs who live with their families as residents in the Kuwait.

For the purpose of investigating the effect of factors determining student's performance or GPA' student in AOU-Kuwait, the following model has been constructed. The model assumed that the student's GPA depends on gender, score of high school, branch of high school, marital status, nationality, age, occupation. The choice of the explanatory variables in the model is based on the previous research findings and a few experiments done by the author to select the most significant explanatory variables. Data was collected from University records and not via students' survey in order to obtain an accurate data and to avoid the limitations of questionnaire tool. Multiple regressions were used to analyze the data using the Statistical Package for the Social Sciences (SPSS).

Based on the preceding discussion, the following model is estimated in order to determine the factors affecting the academic performance of in AOU- Kuwait branch.

$$GPA_t = \beta_0 + \beta_1 HSS + \beta_2 HSB + \beta_3 AGE + \beta_4 NAT + \beta_5 GENDER + \beta_6 Smart + \beta_7 Work + E_t$$

Where:

GPA	=	Overall Grade Point Average of the student in graduation
HSS	=	Score in secondary school certificate examination; expressed in a percentage form
HSB	=	Branch of study (stream) in secondary school (sciences =1, arts =2, courses 3)
AGE	=	Age of student upon admission to college (Young < 30, mature > 30).

NAT = A dichotomous variable representing student's nationality (Kuwaiti = 1, Non-Kuwaiti = 2).

Gender = Gender of student (male = 1, female = 2).

Smart = Marital status of student (single = 1, married = 2).

Work = A dichotomous variable representing student's occupation (work = 1, Not work = 2).

Et = The random residuals

4. Findings

4.1 Correlation

Table 2 reports the Pearson correlation coefficients of all variables employed in the study. It can be observed from the table that almost all variables exhibit significant correlations with GPA with the exception of gender, occupation, martial status and age.

Table 2 also points to a number of significant correlations between the explanatory variables, suggesting possible multicollinearity problems in the multivariate analysis (see for example, NAT and HSB, Nat and HSS, Nat and Age, Age and Gender, work and Age. Furthermore, correlation among the variables used in this study may provide interpretation to the regression and to a possible multicollinearity problem.

It is clear that there is simple correlation among the variables that are reported in Table 2 where the largest reported value (0.538) was between Smart and the Age variable. According to Judge *et al*., (1988) correlation values below 0.80 do not pose a potential multicollinearity problem.

Table 2 Here

It is worth mentioning that correlation matrix is an indicator of potential multicollinearity problems between two explanatory variables. However, the absence of high correlation does not necessary mean that there is no multicollinearity. To deal with such problem, it is important to apply Variance Inflation Factor (VIF) which is reported in Table 3. It is obvious from the table that the VIF was below 2 for all variables. Multicollinearity is viewed as a serious problem only when the VIF exceeds 10 (Neter*et al*., 1989). Therefore, the explanatory variables used in this study do not appear to cause a serious multicollinearity problem and this permits interpretation of the regression coefficients.

Table 3 Here

Three regression models are estimated to identify the variables responsible for variations in GPA in the sample. In the first model, all the seven explanatory variables were used. In the second model, all variables except WORK were regressed against the GPA. In the third model was included the three significant variables Nat, HSS and AGE. It can be observed from Table 3 that the coefficient signs of almost all variables are significant positive. Furthermore, it is obvious from Table 3 that R^2 and adjusted R^2 of the three-regression models are about or more than 18 percent with high and significant F-statistics values. This implies that more than 18 percent of the variations in GPA are due to the student's nationality, score of high school, the student's age.

The students score in the secondary examination emerges to be the strongest variable that determines GPA, as it is featured in the three regression models with the highest coefficient. The finding is on line with previous studies undertaken in different countries such as Ramadan and Quraan (1994) in Jordan and Erdem *et al.,* (2007) in Turkey.

The table also reveals that the students who have graduated with science major in high school perform better than other students graduated from art or courses. This may suggest that the scientific stream suits the studying in AOU. This result is consistent with previous studies undertaken in different countries such as Ramadan and Quraan (1994) in Jordan. However, it is not in line with results reported by Al-Rashed, (2001) who observed insignificant relationship between secondary school branch and student's performance in Kuwait University.

It is also clear that female students perform better than male students. The possible explanation for this finding might that females spend more time in the house studying and they are not involved in social relationship as male students who spend more time in gathering (Dewaniaya). The findings are in support of previous studies undertaken in different countries [see for instance, Tremblay *et al*., (2001) in Canada, Santos (2007) in Argentina Wong and Lai (2006) in Hong Kong, Roos (2009) in South Africa; Hedjazi and Omidi (2008) in Iran; Dayıo and Türüt, 2004; Yukselturk, 2010 in Turkey]. However it is inconsistent with some other studies undertaken in other countries such as Al-Tamimi and Al-Shayeb (2002) in UAE and Alnaeem (2010) in Saudi Arabia

The findings reported in Table 3 also reveal that younger students perform better than mature students. The possible explanation for this finding might be due to the fact that mature student has other responsibility than

studying. The finding lends support to previous studies undertaken in different countries such as Díaz (2003) in Spain and Roos (2009) in South Africa. However it is inconsistent with some other studies undertaken in other countries such as Brahmasrene and Whitten (2001) in the USA; Tamimi and Al-Shayeb (2002) in UAE and Cheesman*et al.*, (2006) in the Anglophone Caribbean region.

Unlike previous studies undertaken by Adetunde (2008) in Ghana Alnaeem (2010) in Saudi Arabia that observed unmarried female students are not serious about education and they looked at education as entertainment. The findings in the current study demonstrated that married students outperform single students. This might be due to the fact that married student is more mature than single student and can manage his or her social relationship and time more than unmarried to pursue his or her target. The findings are consistent with Smith and Naylor (1993) who noticed that married students do better than non-married students.

Unlike previous studies undertaken by Hunt *et al.*, (2004) the current study findings showed that working students perform better than not work non working students. This might be due to the fact that working students are likely to be mature student and take more responsibilities than other non working student. Therefore, they look at education as seriously. This finding is consistent with some other studies undertaken by McInnes and Hartley (2002) in Australian universities.

5. Conclusion

The outcome of the study offers an important insight into factors that affect students' performance in the AOU in Kuwait branch. The performance of the students is represented by cumulative GPA and determined by the student's nationality, age and the score of high school. The findings are consistent with previous research. Unlike previous research, however, variables such as student's gender, working student, status martial, and the division of high school appeared to be insignificant determinants of students' performance in the AOU in Kuwait branch. A major distinction of this study from previous studies is that it focuses on open learning as an AOU in Kuwait branch. Previous researchers have focused on traditional universities where there is a wide room of face-to-face interaction with homogeneous age among students. Since, the performance of the student is unlikely to be affected by age; it is possible to see age as a variable which may be positively related to performance of the student in open learning. Therefore, the impact of student age in determining the performance is significant.

A further contribution of this study is that it has been undertaken in a unique environment such as Kuwait branch where is the headquarter of the university. In the last few years, the Arab region has witnessed a remarkable increase in enrollment rates in higher education institutions. Also open and distance learning is fast becoming an accepted part of the educational systems in Arab region with particular emphasis in the Arabian Gulf region. More importantly, the governments can increase the capacity and cost effectiveness of education systems to enhance the quality of existing educational structures and promote innovation and opportunities for lifelong learning.

Finally, the findings of this study should be considered in the light of its limitations. First, external validity is limited by the fact that all students were from one university. This means that the results apply only to AOU-Kuwait branch students who participated in the study. The generalisability of the results must await the outcome of future research employing different samples of students in other AOU branches. Second, the sample was limited to students who graduated in academic year 2009/10, other academic years were not included due to unavailability data involved in extending the investigation. Results may differ if other years were included in the study. Third, the study examined the effect of certain factors on the student's GPA. However, other factors such as instructor and family income have not been examined. Therefore, for further research, these factors could be examined.

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Table 1. Profile of the Students Characteristics

		Frequency	Percent
	Gender		
1	Male	213	37.6%
2	Female	353	62.4%
	Nationality		
1	Kuwaiti	203	35.9%
2	Non-Kuwaiti	363	64.1%
	High School Type		
1	Art	166	29.3%
2	Sciences	299	52.8%
3	Others*	101	17.8%
	GPA		
1	Below 2.50	282	50%
2	From 2.5- to 3.00	142	25%
3	From 3.00 to 3.50	110	19%
4	Above (3.50	32	6%
	Occupation		
1	Employed	163	28.8%
2	Unemployed	403	71.2%
	Age		
1	From 22-30 years old	269	47.5%
2	From 30-40 years old	230	40.6%
1	From 40-50 years old	66	11.7%
2	Over 50 years old	1	0.18%
	Score of high school		
	less than 70%	283	50%
	More than 70%	283	50%

* The students who graduated from high school with courses not regular high school

Table 2. Correlation coefficients matrix of all variables

	GPA	Nat	GENDER	HSB	HSS	Work	SMart	AGE
GPA	1							
Nat	.259**	1						
GENDER	.065	-.018	1					
HSB	-.062	-.279**	-.051	1				
HSS	.363**	.227**	.144**	-.050	1			
Work	.032	.167**	.110**	-.016	.040	1		
Smart	.039	-.288**	-.172**	-.013	-.069	-.139**	1	
AGE	.062	-.186**	-.201**	-.130**	-.110**	-.406**	.538**	1

**. Correlation is significant at the 0.01 level (2-tailed).

Table 3. Results of the Multivariate Regression (GPA is the dependent variable)

	Model I			Model 2			Model 3		
	t-ratio	Sig	VIF	t-ratio	Sig	VIF	t-ratio	Sig	VIF
Nat	5.528	.000	1.298	5.678	.000	1.279	5.285	.000	1.084
GENDER	1.535	.125	1.092	1.584	.114	1.089			
HSB	1.063	.288	1.141	1.027	.305	1.139			
HSS	8.092	.000	1.086	8.063	.000	1.084	8.431	.000	1.059
Work	.904	.366	1.237						
Smart	1.547	.123	1.529	1.685	.093	1.501			
AGE	2.709	.007	1.752	2.560	.011	1.487	3.542	.000	1.041
Constant	2.743			3.572			5.811	.000	
R^2=	.192			.191			.183		
R^2 Adj.=	.182			.183			.179		
F=	18.996			22.032			42		
Sig. F=	0.000			0.000			0.000		