Research article

Qatari national scholarships: University selectivity and student outcomes

Ramzi Nasser*, Mothana Alkubaisy, Khalid Al-Horr

Dhofar University, Salalah, Oman
*Email: ramzinaimnasser@hotmail.com

ABSTRACT

The scholarship program in Qatar provides aid for students wishing to enroll in "top-ranked" universities around the world by supplying them with tuition, fees, board, and travel. The selectivity (high or low ranking, as determined by international ranking agencies) of the universities implies specific outcomes in terms of graduation and time of study at the university. In this study we attempt to understand how selectivity is related to education functional outcomes. Based on Qatari students enrollment in higher education programs around the world, students were bifurcated into high ranking or low ranking universities and whether they graduated or terminated in relation to specific functional outcome as in achievement (e.g. grade point average) and time of study in a program. A Kruskal-Wallis analysis was conducted using the selectivity of university as an independent variable and graduation status (whether they were terminated or graduated) on student university achievement and time of study. The finding showed the main effects for selectivity, bifurcated into ranked universities (top-1096 universities) and those non-ranked on university achievement. When the selectivity was narrowed by bifurcating students who were enrolled in highly ranked (top-200 universities) and those lower-ranked universities (below the top 200-ranked universities or non-ranked universities), a main and significant statistical difference was found for selectivity on university achievement and time of study. Surprisingly, those in the "top- ranked" universities were more likely to underperform than those in the lower-ranked universities. The findings suggest that students who enroll in high ranking universities were more likely to face difficulty in maintaining the high averages to continue. A greater insight and qualitative approaches is needed to understand Qatari student lower achievement in the top ranking universities around the world.

Keywords: scholarships, financial aid, university selectivity, graduation, achievement, time of study, Qatar, post-secondary education

BACKGROUND

Since 2001, the Supreme Education Council (SEC) in Qatar has implemented educational reforms aimed at building an advanced public education school system that provides all children with the best educational opportunities (Brewer, Augustine, Zellman, Ryan, Goldman, Stasz, & Constant, 2007). The Qatari government embarked on an educational initiative that would supplant an educational system to meet the country's changing needs (Brewer et al., 2007). One initiative of this affluent small nation was to create the Supreme Education Council (SEC). The SEC replaced the Ministry of Education with three main organizations: Higher Education Institute, the Education Institute and Evaluation Institute. The Higher Education Institute has dealt with post-secondary higher education, mainly in higher education quality and its ability to manage provisional or full financial support for students' educational costs inside and outside Qatar. The scholarship program channels funds to secondary school students to attend universities, paying their tuition, lodge and travel. Once students graduate they bring back the know-how and replace the large cadre of expatriate workforce. This, along with the general K-12 school reform, was hoped to transform the nation from one that is dependent on oil and gas, to an information-based society.

HIGHER LEARNING AND HUMAN CAPITAL THEORIES

Qatari government support for education and post-secondary education draws on human capital theories where government promotes and effectively entices increased educational experience among its citizens, which in turn leads to economic and social upturn (Titus, 2009). Two documents capture this aperture: the *Qatar National Vision 2030* and *Qatar National Development Strategy 2011-2016* (QGSDP, 2008; 2010). The strategy outlined within the latter, "folds" itself around human capital theories; specifically through the investment in a knowledge and skills-based society to build an adequate supply of human expertise leading to educational attainment (Becker, 1964). Human capital theories draw on the notion that higher education is an economical imperative and supports the public at the same time as feeding the private sector. Explored further by Hoenack (1983) through the principal agent model, the government posits, through its educational agencies, services for the public, which in turn are transmitted to society at large. The implication of this model suggests that the government or the state has a direct impact on the design of educational outcomes in helping to meet national educational and economic goals. Thus, it is no surprise to find in the United States, financial resources appropriated to increase numbers of Bachelor degree students in public or private higher education with increased accountability and return on investment (Titus, 2009). The implication of this model, underlines that outcomes of higher education are tied to student-level functions within the institutions and draw on successes and needed outcomes on the basis that returns on investments are fulfilled. Outlining the research under this framework recognizes two important factors; being the affective and cognitive functions which are the main broad indicators of persistence in higher education (Berger & Milem, 2000; Titus, 2004) and that such important functions can lead to a strong outcome predictors.

FINANCIAL AID IN HIGHER EDUCATION

Why is financial aid a necessary element in higher education? With the increasing tuition fees in higher education, more and more students are seeking different financial instruments and means to pay for higher education. In the United States, there are different kinds of financial aid, namely in grants, loans, work-study, and amount. The variations in financial aid have impacted differently on student university outcomes. For instance, Paulsen and St. John (2002), grant/loan amount had a reverse effect on college persistence, specifically students of low socioeconomic status backgrounds were less likely to aspire to a university education than their comparatively more advantaged peers (Hillman, 2005; James, 2002; Teese 2007). Likewise, DesJardins, Ahlburg and McCall (2002) findings suggested that financial aid for work-study employment (part-time) at the university for which students received benefits in form of tuition and fees, did not directly influence graduation chances. Although some research suggests that work-study may have increased graduation rates over time (King, 2002) and that some components of financial aid are associated with short leave from the university, but not dropping out. The majority of studies confer what Cofer and Somers (2000) found, that there was a significant and positive relation between grant and loan amounts and student persistence in both private and public colleges.

The availability of support for students in different form of financial educational support mitigate and motivate students to enroll into a university that they would be reluctant to do so, because of financial hurdles (Harrison & Hatt 2012; Jiyun, DesJardins & McCall, 2009). The main narrative presumes that students who seek financial aid do so showing the need for educational financing, where such aid does not cover the needed costs for higher education, which is likely to lead students to find work outside the university and spend less time in educational endeavor. It is logical to interpret and based on empirical evidence that the greater financial assistance schemes, the higher degree outcomes (Alon, & Tienda, 2007; Bettinger 2004; Chen & DesJardins 2010; Harrison, Baxter & Hatt 2007; Slater 2009), faster completion of degrees (Glocker 2011) and increased first year retention rates (Gross, Vasti & Desiree 2013) and improves graduation rates in general (Cabrera, Nora & Castaneda, 1992; St. John, Paulsen & Starkey, 1996; John, Hu & Weber, 2001, Porter, Yang, Hwang, McMaken, & Rorison, 2014). Policy makers may draw on legitimate returns on investments and national development initiatives to place students in the right programs and increase the retention of students through financial aid (Metzger, 2006). Thus, by the Supreme Education Council granting scholarships to Qatari students and the government providing the needed investment opportunities to pursue an international education, students can garner skills and knowledge with the expectation that once they return to Qatar, they feed into the much needed national workforce.

SYSTEMS MODEL

Early studies on financial aid adopted a systems model as a framework to draw on the different factors leading to success. The systems model posits input and function factors as having a significant impact on outputs. Higher educational institutional-input factors may include the level of enrollment, individual student background or type of university, and output measures as graduation rates or whether students are likely to have better occupational outcomes and labor market performance (Yang, 2011). DesJardins, Ahlburg and McCall (2002) are some of the few researchers who have attempted to study financial aid types in relation to graduation rates (output measure). Even with significant input factors that might have dictated its impact on university outcomes, there are functional aspects that reflect the extent which might have led to the success in outcomes as in grade point average and time of study (Paulsen & St. John (2002); St. John, 1990, 1993; St. John & Somers, 1993; Braunstein, McGrath & Pescatrice, 1999; DesJardins, 2001). It is general knowledge among institutional researchers that low achieving students may find less opportunities to get in selective universities. Even those from low socio-economic status backgrounds they may be less likely to aspire to a top tier university in which more socio-economically advantaged students find placement (Hillman, 2005; Teese, 2007). Such input factors as selectivity might also reflect the ability of students to complete a program and find the financial support to complete it successfully. A review by Melguizo (2008) has indicated that college completion rates increased with quality/selectivity of the postsecondary institution attended (Astin, 1985; Bowen & Bok, 1998; Marcus, 1989; Saupe, Smith, & Xin, 1999; Sjoberg, 1999; Carnevale & Rose, 2003; Kim, Rhoades, & Woodard, 2003; Bowen, Chingos & McPherson, 2009). While the number of studies have manipulated input factors leading to outcomes, or functional outcomes, however almost no study addressed the interaction of input and output factors on functional outcomes as achievement and time of study.

RESEARCH CHALLENGES

Even with such impact of input factors on functional and specifically cognitive components of student-level information, a number of criticisms about input measures have been drawn by researchers in this area. The largely used input factors i.e. variables such as background information of income and socio-economic status, is not as accurate as that of objective information (DesJardins, Ahlburg & McCall, 2002). It is more difficult when one looks at such variables as financial aid and the impact it might have. Students who qualify for financial aid are accepted to enroll to a university, they show a level of ability and persistence. Because of their past record of achievement, they were more likely to receive direct or indirect aid and are more likely to persist and graduate than those who did apply for aid but did not receive it. One methodological approach is to equalize students' backgrounds amongst those who receive financial aid and those who do not, that is more easily said than done. While common knowledge about financial aid is significantly related to successful outcomes, for obtaining higher grades and possibly graduation on time, but equalizing input factors in background student-level data, is a very difficult thing to do in this type of analysis. Thus, given this criticism about the input measures,

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selecting institutional-level input factors is a more specific piece and an unbiased approach of driving information for outcome-based evaluative research, which is easily accessible to university-institutional researchers.

The point made is that it may be difficult to compare those who receive scholarships with those who do not, as those who do receive scholarships are high achieving students, they may already bias the data in favor of those which are not measured in terms of output as graduation rates. One may come around this research dilemma by controlling for financial aid and using university status as a predictive variable that might be more reliable than looking at whether the student receives financial aid or not. As Alon and Tienda (2005) explained, that the inconsistencies in the findings possibly stem from the difficulty of assigning equal groups, i.e., those who were able to receive a scholarship and those who were not. In this study, we controlled for financial aid by selecting those who were granted a national scholarship.

A further note, comparing attainment rates of students at different types of institutions is challenging, because students are not randomly assigned to universities, but instead they sort themselves into specific types of institutions. Therefore, trying to isolate the effect of quality/selectivity on baccalaureate attainment is difficult because better-prepared students attend selective and high ranking universities (Hoxby, 1997 cited in Melguizo, 2008). A number of studies have attempted to control for issues of selection in order to estimate the effect of quality/selectivity on bachelor degree attainment (Alon & Tienda, 2005; Dale & Krueger, 2002; Light & Strayer, 2000) and have done so through factoring out common variances that differentiate between students prior to their enrollment into a university.

Thus, the scholarship programs in Qatar provide full support to the student in tuition, food, lodging and travel. The scholarship programs are competitive in that they provide aid to "top" universities from around the world and includes stipends covering tuition fees, food, lodging and travel. The scholarship program attempts to increase human capacity through various educational opportunities allowing students seeking tertiary education; and those high achieving secondary students to have a chance to enroll in the best international universities irrespective of family's economic status. With this wide spectrum and by controlling for financial aid, we attempt to study institutional factors as selectivity and completion i.e., graduation rates on functional outcomes.

We used the concept of selectivity as a measure of high or low ranking of universities. The main assumption of university high ranking is that they are competitive, have stringent admission criteria, are rigorous, follow their students through, provide a strong and quality education and are selective in their admissions for high achieving students. *Hence we used the concept of "high-ranking" universities as those universities being highly selective and assumed to provide quality education.* We also used the output factors as graduation whether the student had completed their studies or was terminated. Thus using the input factor of graduation we would be capturing a full picture and understanding of how these factors could be considered together and explored directly or indirectly to predict achievement and time of study.

STUDY AND HYPOTHESIS

In this study we controlled for financial aid. The research objective was to find whether a relation existed between selectivity and achievement and time of study at the university. In addition, as to whether those who graduated had the same time of study at the university. Two independent variables were used in this study: selectivity and status. *We compared those students who attained acceptance to selective universities whether in "high-selective" or "low-selective" universities and whether those students were able to complete the program in relation to their performance and time it took them to finish or terminate the program.*

The two conditions for selectivity in this study was a bifurcation of "top-ranked 1096 universities" compared to those students who enrolled in the "below the top 200-ranked or non-ranked universities." The second condition included those in the "top-ranked 200 universities" compared to those students who enrolled in the "below the top 200-ranked universities or non-ranked universities."

The overarching hypothesis in this study is that those who were in selective universities were more likely to achieve and have higher grade point average or its equivalence than those "lower-ranked" universities. The first combination of hypotheses suggest that "top-ranked 1096 universities" will be more likely to have higher grade point average or its equivalence than those in the "below the top 1096-ranked universities or non-ranked universities." Secondly, by increasing selectivity and

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bifurcating those enrolled into the "top-ranked 200 universities," compared to those "below the top 200-ranked universities or non-ranked universities," those students who enrolled in former will be more likely to have a higher grade point average or its equivalence than the latter.

The second combination of the hypotheses suggested that those students in the "top-ranked" universities were more likely to finish at shorter period than those students in "lower-ranked" universities. This combination of hypotheses was varied by increasing selectivity to the top 200 ranked universities compared to those "below the top 200-ranked or non-ranked universities."

The third combination of hypotheses was whether those terminated were more likely to spend a shorter time period than those who graduated. The purpose of these hypotheses was to explore successful outcomes of the scholarship program and thus graduate high achievers in short time of study.

METHOD

This study was quantitative in nature and relied on archival data. There were no subjects or real-time data. All information was obtained from the Higher Education Institute Scholarship data warehouse. All information about individual applicants was blinded to the researchers.

Different data was collected through the application to the scholarship program, this included: Secondary school average, socio-demographic information, university intending to attend, university acceptance letter, and start period. Intermittent data collection was also collected bi-annually, this included whether students were still enrolled, their grade point average or its equivalence and time of study at the completion or termination of the program.

Once the student receives the acceptance to a university, the student shall be able to receive a scholarship. Likewise, students who do not complete, who withdraw, are suspended, or are expelled from the program, will still be asked to provide their transcripts at termination or graduation.

SAMPLE

The sample was made of Qatari nationals as only Qatari citizens qualify for national scholarships in Qatar. We selected students seeking undergraduate level qualifications leading to the Bachelor degree. All students with scholarships to graduate degree programs were removed from the data. We also limited the data to those who graduated and were terminated. Students who were still enrolled at universities under a scholarship were removed from the data list. Data was accrued from 1994 to present. The mean age of the sample was M = 20 and SD = 3.17. There were 588 females and 601 males. The students in the sample completed their education in Arab countries (N = 29), Australia (N = 16), Europe (N = 357), Qatar (N = 526) and United States and Canada (N = 260).

MEASURES

There were two independent variables in this study: selectivity; high ranking and low ranking universities and second graduation status whether the student graduated or was terminated.
The dependent variables were achievement score i.e., grade point average or its equivalence.
The second dependent variable was the time of study at the university, measured by the period from enrollment to graduation or termination.

The selectivity was measured through the ranking of the university by taking average ranking score using the Shanghai Jiaotong University, the Times Higher Education Supplement International ranking of universities and the QS World University Rankings, since the different ranking agencies have different order of ranking of a university. We obtained an average ranking for each university.
For example, "University X" was ranked first; "1" according to QS, ranked third; "3" according to Times Higher Education and ranked second; "2" using Shanghai Jiaotong listing. The average ranking score is "3" i.e., $(1 + 2 + 3)/3$. If universities had at least two ranking from the three ranking agencies mentioned (i.e., the Shanghai University, the Times Higher Education Supplement and the *QS World University Rankings*) they were included in the list. All average ranks were ordered according to the average ranking score in descending order. The highest selectivity or high-ranking university would have the lowest absolute ranking value. In total as of 2013/2014 year there were 1096 universities ranked by at least two ranking agencies (three ranking agencies listed above).

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Students could also apply for scholarships even if universities are not ranked. Granting of scholarship is made for case by case, and students would be able to garner a scholarship to a university that is not ranked. Those universities and considered to be of low selectivity level.

The dependent variable included each student's university average calculated as a cumulative at graduation or termination of studies. University grades and time of study were standardized for each country students enrolled at the university. The units of measure for university grades were turned into standard deviations. The purpose of standardizing the scores was to unify the units of measure for the different grading systems and different period of studies for a Bachelor degree qualification required in different countries around the world. This entailed turning the final student cumulative grades in standardized scores in respect to each country i.e., grades were standardized separately for United States, United Kingdom, Australian universities and other universities in different countries around the world. The standardized scores of grades for each country was then aggregated together to form what we call "grade point average or its equivalence." The second variable included the time of study at the university, which was calculated by subtracting time entered to the program, from the time students graduated (units in years) or were terminated. The time of study was standardized for each country students finished their studies.

LIMITATION

Using the notion of selectivity we are implying that there are different qualities of higher education providers. Finding appropriate measures of institutional quality is a complex task. While difficult to measure on totality ranking agencies emphasize teaching quality, they use indicators that do not measure it directly for a specific university but many use a combination of measures for a robust estimation of its ranking. We took that further by using the average ranking of three ranking agencies as an inter-ranking consistency measure, to offer a much robust measure of quality.

Another limitation in this study was that bifurcating students into the two groups would see them assigned a differential group selection. If one group is more able than the other, we would know that the assignment of the student in groups is confounded and hence students would be expected to perform better on achievement and there would be important differences between the two groups in terms of their functional outcomes. We were able to come around this issue by identifying that there are no differences between bifurcated groups. Thus drawing on this notion of selectivity we wanted to understand the functional outcomes of students who were granted scholarships.

ANALYSIS

All information about students was aggregated and made anonymous before being accessed by the researchers; the researchers did not review information regarding individual students, as to keep anonymity in line with ethical conduct of research.

The two dependent variables in this study were grade point average or its equivalence and time of study at the university. The independent variables included selectivity (low-ranking or high ranking) and university status, whether graduated or terminated (expelled, withdrawn or retracted). The first analysis was a bi-serial correlation between university selectivity and secondary average (grade 12). A second bi-serial correlation, related university status (whether graduated or terminated) and secondary school average. The rationale was to see whether those input measures (school average) has any relation with variables that might impact university average, the functional aspects of student-level measure. Prior to the decision on the use of ANOVA, we wanted to test whether the data violated the basic ANOVA assumptions, which included the dependent variable being normally distributed across the groups, whether there was no-outliers, and whether a homogeneity of variance existed in the data. Having verified the assumptions we would proceed with the analysis of variance or otherwise, we would run the non-parametric statistical analysis.

RESULTS
Correlations

The first analysis was a bi-serial correlation analysis in which the secondary school average was correlated with selectivity and student status. The correlation between status (whether graduated or terminated) and secondary school average was negligible with $r = -0.001$, $p = 0.98$. The correlation between selectivity ("high ranked" or "lower or non-ranked" universities) and secondary school

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average came to an insignificant r = − 0.01, p = 0.79. The lack of correlation would indicate the bifurcation of "high" and "low" selectivity on achievement were not related. This would negate the proposition that high achieving students are more likely to enroll in high selective universities and likewise, low achieving students would enroll in less selective universities.

ANOVA ASSUMPTIONS

The first analysis we addressed the ANOVA assumptions and verified whether there was outliers in the data based on the combination of the crossed relation between the two independent variables: Selectivity by graduation. We also tested the normality of the distribution using every combination of crossed relation. For all combinations, the normality assumptions were rejected, indicated by Shapiro-Wilk test-statistic of normality (see test statics in Table 1) and there were outliers in each of the combinations.

Table 1. Normality test of all combination of crossed factor

	Standardized Grade point average or its Equivalence		Standardized Time of Study	
	Shapiro-Wilk	df	Shapiro-Wilk	df
Graduated x below the top 1096-ranked or non-ranked universities	0.58*	366	0.94*	587
Graduated x top 1096-ranked universities	0.78*	74	0.95*	237
Terminated x below the top 1096-ranked or non-ranked universities	0.76*	84	0.93*	230
Terminated x top 1096-ranked universities	0.78*	23	0.94*	135
Graduated x below the top 200-ranked or non-ranked universities	0.59*	385	0.96*	669
Graduated x top 200-ranked universities	0.82*	55	0.93*	155
Terminated x below the top 200-ranked or non-ranked universities	0.75*	86	0.95*	267
Terminated x top 200-ranked universities	0.80*	21	0.92*	98

*Significant at 0.01 level.

We also addressed the assumption of homogeneity of variance using a two univariate analyses, by crossing university status (graduated/terminated) by selectivity (bifurcated "1096 top-ranked universities" versus "below the top 1096-ranked universities") as two attributes of selectivity factor on grade point average. The Levene's Test of Homogeneity resulted in a significant $F_{(3,543)} = 52.97$, p = 0.00, thus rejecting the null hypothesis that variances are equal. The second homogeneity of variance test was rejected by running two univariate analysis using university status by selectivity (bifurcated "200 top-ranked"/ "below the top 200-ranked universities") as two attributes of a factor on grade point average. The Levene's Test of Homogeneity was significant at $F_{(3,543)} = 72.25$, p = 0.00, thus, rejecting the null hypothesis of equal variances. We also ran a Levene's test using the same combination of independent variables on the standardized time of study. In both cases we reject the homogeneity of variances with $F_{(3,1185)} = 7.52$, p = 0.000 (using university status crossed by selectivity: "1096 top-ranked universities"/ "below the top 1096-ranked or non-ranked universities") and $F_{(3,1185)} = 8.04$, p = 0.00 (using university status crossed by selectivity: "200 top-ranked universities"/"below the top 200-ranked universities"). Given all ANOVA assumptions were rejected, we alluded to non-parametric tests as Kruskal Wallis one-way analysis of variance. The assumptions for Kruskal Wallis where supported in that the dependent variables where turned into ordinal level data, the independent variables had two or more categorical independent groups and no relation between the observation on the dependent variables.

MEANS AND STANDARD DEVIATIONS ACROSS GROUPS

We first report means and standard deviations of the standardized grade point average or its equivalence and standardized time of study by each classification of the independent variables. The means are reported in Table 2, the statistics indicated that those who graduated had higher means than those who were terminated. Those in the "top-ranked 1096 universities" had lower means than

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Table 2. Means and standard deviations at every level of the independent factors on standardized grade point average or its equivalence and time of study

	Grade Point Average or its Equivalence (standard score)			Time of Study (standard score)		
	Mean	N	SD	Mean	N	SD
Graduated	0.18	440	0.77	0.027	824	0.94
Terminated	− 0.97	107	1.38	− 0.06	365	1.10
"below the top 1096-ranked or non-ranked universities"	0.041	450	1.00	− 0.04	817	1.0
"top-ranked 1096 universities"	− 0.44	97	1.06	0.08	372	0.98
"below the top 200-ranked or non-ranked universities"	0.03	471	0.99	− 0.08	936	1.02
"top-ranked 200 universities"	− 0.50	76	1.15	0.30	253	0.80

those "below the top 1096-ranked or non-ranked universities" and those in the "top-ranked 200 universities" had lower mean than "below the top 200-ranked or non-ranked universities." Also the statistics indicated that students at high selective universities were more likely to spend a longer than those at lower selectivity.

NON-PARAMETRIC ANALYSIS: KRUSKAL-WALLIS

Given the disaffirmed assumptions for the ANOVA we used the non-parametric of mean-ranked differences of Kruskal-Wallis statistic, which did not require the basic ANOVA assumption of normality, and homogeneity of variance being assumed. However, the dependent measures were required at the ordinal level. We thus transformed both the grade point average and time of study to ordinal measures from low of 1 to high of 4 based on the distributions. We ran a Kruskal-Wallis Chi-square test to determine the one-way differences. Table 3 reports the mean rank and Kruskal-Wallis statistics.

Table 3. Kruskal-Wallis analysis for the independent factors on the ranked grade point average or its equivalence and time of study

		Ranked Grade Point Average or its Equivalence		Ranked Time of Study	
		Mean Rank(N)	Kruskal-Wallis Chi-Square Test	Mean Rank(N)	Kruskal-Wallis Chi-Square Test
Selectivity	"below the top 1096-ranked or non-ranked universities"	655.93(817)	101.96*	602.04 (814)	1.22
	"top-ranked" 1096 universities	461.19(372)		579.53 (372)	
Selectivity	"below the top 200-ranked universities or non-ranked universities"	626.00(936)	44.473*	581.02(936)	8.072*
	"top-ranked 200 universities"	480.30(253)		646.71(253)	
University Status	Graduated	651.58 (824)		602.63(824)	
	Terminated	467.27(365)	90.374*	577.78(365)	1.467

*Significant at 0.01 level.

The first result of the Kruskal-Wallis test was based on the bifurcated selectivity into two classifications, those who received scholarships for "ranked" universities, and those who received scholarships for "below the top-ranked or non-ranked" universities on the two dependent variables of university grade point average or its equivalence and time of study at the university. There were significant differences between the 1096 "top-ranked" compared to "below the top 1096-ranked universities" with higher mean rank for those at the lower ranked universities. There was no mean rank difference on time of study.

In the second Kruskal-Wallis test we used "top-ranked 200 universities" compared to those enrolled in the "below the top 200-ranked or non-ranked universities on ranked grade point average or its equivalence and time of study at the university. Kruskal-Wallis was significant on both the dependent variables of ranked grade point average or its equivalence and ranked time of study. Those on the

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"top-ranked 200 universities" had a significantly lower mean rank grade point average or its equivalence than the "below the top 200-ranked universities or non-ranked universities." On the other hand, those on the "top-ranked 200 universities," had a higher mean rank in time of study than their counterparts.

The third Kruskal-Wallis of university status bifurcated status into graduate and terminated levels. Those who graduated had a higher mean rank than those who were terminated. There was no significant differences found in ranked time of study at the university between those who graduated and those who were terminated.

REVIEW OF RESULTS

In review of the first combination of hypotheses, using the bifurcation of students enrolled in the "top-ranked 1096" and "below the top 1096-ranked universities or "non-ranked" universities there was a main significant differences on university average or its equivalence. Even when the selectivity was narrowed using the bifurcation of "top-ranked 200" and "below the top 200-ranked universities or non-ranked" universities, there was a significant difference found on grade point average or its equivalence and thus the first set of hypothesis were rejected. In terms of the second combination of hypotheses, there was no difference between those who enrolled in the "top-ranked 1096 universities" and those in "below the top 1096-ranked universities or non-ranked universities" on the time of study. However those in the "top-ranked 200 universities" had stayed a longer time period than those "below the top 200-ranked or non-raked universities" and thus rejecting the second component of the second set of hypotheses. The third hypothesis was also rejected as there was no significant difference between those who graduated and terminated on time of study.

DISCUSSION

This study attempted to address the extent to which scholarship programs effectively provide means for students to enroll and acquire undergraduate degrees. The objective of the higher education scholarship program in Qatar is it provides opportunities for students seeking international universities and encourages excellence in student educational experiences to attend highly selective international post-secondary institutions. However, students who select universities that are not ranked could make an appeal and provide information on institutional quality to support their application and often are granted scholarships. Hence we compare those students who received scholarships from "top-ranked" universities to lower-ranked or non-ranked universities. Results from this study shall avail to policymakers' appropriate knowledge to make decisions on scholarship funding. It shall help research draw new conceptualization using the system's model. Findings from this study shall appeal to a national policy strategy and provide justification for further funding when there is an increase in pupil who can graduate from highly selective universities than the low selective universities and do so in the shortest time of study. Further, such study can be replicated in the Gulf area and beyond where there is a strong presence of national scholarship programs.

The Qatari government, investing in scholarship programs, might be targeting high quality education programs in its attempt to bring back expert knowledge and skills from around the world leading to growth and human development. While there is also the notion that high selectivity might be equated with high ranking and transitively with high quality. This kind of relation has no direct causal link between institutional factors and student outcomes. Various ranking systems around the world use different ranking methodologies and a combination of proxies with implicit assumptions about the causal links between institutional factors and student outcomes. By providing the scholarship to students enrolled in high-ranking universities a basic assumption is made that high-selective universities will offer a high quality education and students will more likely complete the program rather than drop out and do so in the shortest time of study at the university.

The analyses integrated input factors and output factors in relation to functional variables as grade point average or its equivalence and time of study. Another significant part to the analysis was the integration of institutional level and student level factors as university selectivity and student variables of status as in graduation (whether completed or terminated) respectively. Many previous studies have shown how persistence has not been systematically explored in relation to financial aspects. Further, according to Cabrera, Nora and Cateneda (1992) most of the research in this area has looked at single institutions not considering multiple institutions; where a single-level statistical techniques accounting for variances in persistence at one institution rather than student-level variations across institutions. In addition no study in the Arab Gulf or the Middle East has used functional factors as the time of study

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at the university or used such factors as selectivity to address how financial aid could impact access and continuation at the university. We drew on the combination of these aspects in terms of their characteristics as being of input or output measures on such functional aspects of grade point average or its equivalence and time of study at a university.

Our major findings suggest that as selectivity of the university is narrowed from "top-ranked 1096 universities," to those who enrolled in "top-ranked 200 universities," students were more likely to exhibit lower achievement scores compared to those students who are enrolled in "below the top 200-ranked universities or non-ranked universities." Our assumption suggest that those universities at the "top-ranked were considered to maintain a service quality were more likely to have rigorous academic standards and students from Qatar maybe competing with top students from around the world finding it hard to complete the program. We also found that those in the " top-ranked 200 universities" had spent a significantly longer period than those in the "below the top 200-ranked universities or non-ranked." The most interesting result was that those who were terminated had stayed as long as with those who graduated. This should call for alarm, as students who stay as long as those who graduate with no qualifications are generally using government funds with a lack of successful outcomes. Considering that financial aid leads to positive outcome and a return on investment – we expected that those who were terminated would be terminated at statistically significant shorter time of study than those who graduated. Government may be investing heavily in providing the financial aid with expectation of qualifications at the completion of study. It is suggested that follow-up system of students must be in place within the Supreme Education Council in tracking, guiding and following through student progress regularly.

Consistently those who graduated were more likely to face higher averages in low-selective (low-ranking) universities, than those at the high-selective universities. The notion that higher selective universities are more likely to take smaller percentage of their applicants, do so on the basis that these students are the best in their graduating class (Monks & Ehrenberg, 1999), will more likely do well in post-secondary education (see Noble & Sawyer, 2002 in the prediction of secondary school average on college grade point average) and continue to succeed throughout their higher education.

As expected there was difference between those who graduated and terminated on university grade point average scores or its equivalent, with significantly higher mean scores for those who graduated. Further those who graduated had as expected, a higher grade point average or its equivalence than those who were terminated. This finding might suggest that students may have been terminated because of their academic performance at the university. Titus (2004) found that students are more likely to persist substantially with an increase in "1" standard deviation score in their grade point average when selectivity was "narrowed" i.e., the "top-ranked 200 universities."

The most significant finding suggest that by increasing selectivity to those "top-ranked 200 universities," differences were found on achievement and time of study. Those students in "top-ranked universities" were more likely to have lower grade point average and spend longer time of study than those students in "below the top 200-ranked universities or non-ranked universities" Thus, rather than follow practices and policies, decision makers need to be calculative in the selection of programs and universities. Policy-makers need to perform a cost-benefit analyses to the advantages of those programs, and measures success in terms of those students who graduate and do so on time compared to those who drop-out.

CONCLUSION

Many students from around the world may choose a degree path in highly selective universities, they may not be able to complete the programs and drop all together from higher education. Thus, their ability to succeed while at the university is measured by their performance in means of grade point average or its equivalent and the time of study at the university. In terms of input measures policy makers may make inappropriate judgments using only inputs leaving out output measures or using one or the other effects of student and institutional level measures. In this study we looked at input factors as university selectivity (institutional), we also used student level output factors as graduated or terminated. Our main findings in terms of the input measures suggest that there are differences in performance outcomes based on the selectivity and that students are more likely to underperform in high-selective universities; because these universities might be more selective and competitive in seeking the best students in the world. Policy makers making decisions and restrictions on scholarships, might want to look upon those policies that underline the award of scholarships to high-

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ranking universities and the kind of students they encourage. The pay back from these institutions may not be as lucrative for these students as they are less likely to continue because of their performance and an investment leading to a degree qualifications.

To this end, this study took a different approach to many of its predecessors. Rather than use financial aid to compare those students who received compared to those who did not. Financial aid was used as a control variable to see student-level-functional variables in light of input and output variables. In conclusion, our results draw attention to policy makers but also researchers drawing on methodological imperatives in the use of a mix of institution- student level factors and their impact on student functional variables. Further research could consider different combinations of these variables on students through mixed methods approaches.

A note of caution, from the results we recognized that the variation of the dependent measure scores were dispersed and this variation maybe due to program rather university level analysis. As some university programs are rigorous and students may not perform comparably with equal achieving students enrolled in program having less academic rigor. We were limited to perform the analysis by program because of the few number of students in the "top-ranked" universities. Any future study shall expand the sample to address low number of students in "top-ranked" universities.

The Qatari Ministry of Administrative Development recently agreed to provide an unprecedented number (21,836) of scholarships to Qataris (Gulf Times, 2015). Thus, any policy regarding scholarships should draw upon results from this study.

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