

# **An assessment of the relationship between the faculty performance in teaching, scholarly endeavor, and service at Qatar University**

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## **Abstract:**

Qatar University is the national and major institution of higher education in Qatar. It has undergone several reforms targeting excellence in teaching and research to become one of the leading schools in the Middle East region and beyond. Among the recent reforms, the colleges in the university have developed faculty appraisal systems. Although there are differences among the colleges in regards to faculty appraisal, however, all colleges at the university have three major components in their faculty appraisal system: (i) Teaching, (ii) Scholarly endeavor; and (iii) Service to the university. In order to improve the scholarship at the Qatar University, it is very important that all of these three components should have harmony so that the university can achieve its desired excellence. This study explores the relationship between the three components of the university appraisal system. Two major colleges, Arts and Science, and Business and Economics are chosen for this study. A conceptual model is developed to study the relationship among these three components of faculty appraisal system which uses Structural Equation modeling approach. The conceptual model is tested using a random sample collected from the Academic Evaluation Office at Qatar University. The results indicate the presence of a significant positive relation between the faculty Teaching and Service performances. In addition, there is no support to establish significant relationship between the Scholarly endeavor with either of teaching or service performance.

**Key Words:** Qatar University, Faculty Appraisal System, Teaching Performance, Scholarly Endeavor, Services.

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## 1. Introduction

The Institutions of higher education around the world have undergone reforms targeting the advancement of faculty members by encouraging them to engage in other activities beside teaching. These activities include conducting research in addition to providing different university and community services. The major responsibilities of academics nowadays in the universities around the globe became teaching, research, and providing services to the university and community. Mostly universities have a sound faculty appraisal systems which consist of these three main performance measure for a faculty member. An issue that can be raised here is that whether these three components of a professor's yearly evaluation are interdependent, diametrically opposed or synergistic in nature. Great attention and efforts are given to investigate the relation between teaching and research , numerous studies and editorials have been written concerning specifically the relation between research productivity and teaching effectiveness from a number of different perspectives .However , there is virtually no research that addresses the nature of the relation between the faculty service provided and research or teaching.

In this research, the author presents the faculty appraisal system at Qatar University (QU). QU was founded in 1977, and it is the country's national and major institution of higher education, with the widest variety of program both at undergraduate and graduate levels in Qatar. At present, QU ([www.qu.edu.qa](http://www.qu.edu.qa)) is comprised of seven colleges: College of Education; College of Arts & Sciences; College of Sharia & Islamic Studies, College of Engineering; College of Law; College of Pharmacy; and College of Business & Economics. It assumes great importance not only on high quality teaching, but also on research that contributes to the advancement of the university and to Qatari society. The College of Arts and Sciences (CAS) is the largest college at Qatar University, It was established in the academic year 2004/2005 by merging two colleges: College of Humanities & Social Sciences, and College of Science. The College offers many quality programs at the undergraduate level majoring in Social Sciences, History, Geography, Humanities, International Affairs, Social Work, Mass Communications, Nutrition, Earth Sciences, Mathematics and Statistics, Chemistry, Biology, Physics and Environmental Sciences. The College of Business & Economics (CBE) was established in 1985. CBE offers undergraduate business degrees in the fields of Accounting, Finance, Economics, Management Information Systems, Management, and Marketing. It also offers the country's only MBA program at graduate level as well as an executive CPA program. CBE has been fully accredited by AACSB international at both the undergraduate and graduate levels since 2010.

With the recent evidence of significant growth of QU compared to peer institutions of higher learning, the university has a faculty appraisal system. Following a global standard, QU faculty appraisal system has three domains: i) Teaching Performance; ii) Scholarly Endeavor; and iii) Services of the university. This research is inspired by giving an overview on how the faculty appraisal system is adapted at QU, and how does the three components of the faculty appraisal system are related. Given the fact that there is no previous study focusing Qatar in this field, this study is expected to fulfill the gaps in the field of studies in faculty performance evaluation at the Qatar's only national university.

The rest of this paper is organized as follows: in section 2, a brief literature review is presented which mainly comprise previously conducted studies on university faculty appraisal policies and systems, relationships between different components of the faculty appraisal system, and the research productivity and teaching effectiveness. In section 3, the main objectives of this

research are mentioned and research importance is highlighted. Section 4 briefly discusses the present QU faculty appraisal system. Section 5, presents the descriptive study and an exploratory analysis of the data collected for office of evaluation ([http://www.qu.edu.qa/offices/vpcao/faculty\\_resource.php](http://www.qu.edu.qa/offices/vpcao/faculty_resource.php)) at QU. The section also compares the colleges performances in the domains of three components of faculty evaluation. A conceptual models are presented to study the relationships between the three components of faculty appraisal system of QU in section 6, and this study uses Structural Equation Modeling (SEM) approach. The outcomes of the analysis are discussed in section 7. Finally the conclusions are drawn in section 8.

## 2. Literature Review

In this section, a brief literature review is presented to discuss the researches that have been carried out in the different areas of university faculty appraisal system. In addition, research in the area of how the different components of the faculty appraisal system are related to each other.

### 2.1. Faculty Appraisal system

A comprehensive faculty performance review is necessary for any academic institution looking forward to maintain a high standard of excellence, effectiveness and accountability (Aubrecht, 1984). The goals of such a review are to assess individual job performance and to promote faculty development and productivity (Centra, 1977). At most universities, the evaluation of the college faculty is done on the basis of teaching, research and service (Aleomoni, 1984) as the Faculty members usually divide their professional time among these three domains for example developing manuscripts for publication, conceptualizing a program of research, formulating new courses, documenting teaching effectiveness and serving on various college committees (Adams, 1989). The application of specific criteria under these broad headings, and their weighting, may vary among academic units and among faculty members.

In evaluating the teaching performance, the key is to collect data from different resources (Kreber, 2002) such as Student Rating, as they are in a better position than anyone else to judge certain aspects of teaching, Peer Rating and Course Portfolio (Ory, 1991). On the other hand the criterion for evaluating the research activities of the faculty members most of the time includes Number and Types of Publications, Publisher and Grants (Elton, 1992). For services, according to Braskamp, and Ory. (1994), faculty members spend about 20% - 30% of their time serving on committees and college support activities and their evaluation in this domain includes Administrative and Committee service in the Department, College and University, Public service to the community, Advising and Mentoring students, giving professional workshops/trainings and attending conferences. Johnston et al. (1995) reported the details of assessment strategies in teaching and learning in literature based classrooms. Darling-Hammond and Snyder (2000) extended the research in assessment of teaching performance. Lucal et al. (2003) researched the faculty assessment and scholarship of teaching and learning. They identified their perspective in regards to knowledge available and knowledge needed for assessment. A view of faculty voices on assessment is presented in the work of Pat and Elaine (1988). Recently, Pettitt (2008) discussed the issue of assessment in general education programs. Pigge and Marso (1997)'s paper discussed, a seven year longitudinal multi-factor assessment of teaching concerns

development through preparation and early years of teaching. Tang and Chow (2007) focused research on the issue of communication of feedback in teaching practice supervision in a learning-oriented field experience assessment framework. Verhey (1999)'s work addressed the development, implementation, and evaluation on information literacy in an undergraduate nursing curriculum. Among recent works, Weschke and Canipe (2010) discussed the faculty evaluation process in an online university. Youngs and Bird (2010) described the usage of embedded assessments to promote pedagogical reasoning among secondary teaching school candidates.

## 2.2. Relation between the components of the Appraisal System

Looking to the previous studies that investigate the relation between the three previously mentioned domains of the faculty's appraisal system found that most of them have incorporated just the two variables of research and teaching, without giving any concern to the service domain. Even those who gave attention to the service domain have suggested to be included under the evaluation of teaching effectiveness as it will make it more comprehensive (Brodzinski and Scherer, 1990).

Nowadays most of the universities are engaged in research and trying to create a research culture. Kfir et al (1999) in considering the role of research activities in academic college of education in Israel, concluded that although not all faculty members can or should engage in research, the college as a whole should be exposed to research and participate in the academic research culture. It can be assumed that involvement in research is an intrinsic motivator, and the institution benefits from a more effectively functioning person, as well as more effective job performance (Eva and Marianne, 2001). However a number of authors view faculty research and teaching roles as being in conflict (Clark, 1987; Kerr, 1963; Veysey, 1965). Altbach and Lewis (1995) conducted the Carnegie Foundation's international survey of the academic profession including 20,000 professors from 14 countries, they found that many professors feel that they are under pressure to do more research than they would like to.

In-depth, qualitative studies designed to probe the academic staff perceptions on the relationship between the research productivity and quality of teaching have most often indicated a strong belief in the existence of, and need for, a symbiotic relationship (Robertson & Bond 2001). According to Feldman (1987), there are several major possible rationales behind connecting the degree of research productivity and the enhancement of teaching; these include linkages between research and the development of skills and knowledge that should improve teaching. On the other hand, many attempts have been made to account for the actual relation between teaching and research (Allen, 1996; Fox, 1992; Hattie and Marsh, 1996; Neumann, 1996; Wachtel, 1998; Webster, 1985) and have been achieved by conducting empirical studies on the relationship between research productivity and teaching effectiveness. The findings are often seemingly contradictory; it continues to report either a weak positive relationship or no relationship (Kremer, 1990, 1991; Neumann, 1996; Ramsden and Moses, 1992; Tanner et al., 1992).

The research that indicates a lack of relationship tends to derive from quantitative studies and more recently, from meta-analyses. For example, Tanner et al. (1992) found a weak relationship between the two factors. Their research did not establish significant relationships between excellence in teaching and research performance. Moreover in the meta-analysis of 43 studies that conducted by Feldman (1987) concluded that research productivity is only slightly

associated with teaching proficiency, that means the likelihood that research productivity actually benefits teaching is extremely small. Similarly, in Hattie and Marsh (1996) meta-analysis of 58 studies, they demonstrated a zero relationship and concluded by saying "... the common belief that research and teaching are inextricably entwined is an enduring myth. At best research and teaching are very loosely coupled". Depending on this study as well as other, Brew in 1999 said "The belief that research activity benefits teaching and the student learning experience, has remained strong in the myths of academia, while being difficult to support with empirical evidence". However, Robertson & Bond (2001) argued that the usual measures of teaching effectiveness (student evaluations and self-ratings) and research activity (numbers of publications, grants, publications) are misleading and they indicate a need to re-conceptualize the way in which research and teaching and their potential relation are explored as objects of study. Ramsden (1998) suggested that the interrelationships will less likely be discovered because the research and teaching are treated as relatively discrete entities and the faculty are rewarded and appraised in these two domains separately.

### 3. Qatar University and its faculty appraisal system:

QU has well established faculty assessments schemes. The evaluation of faculty is carried out in the three main areas: (i) teaching; (ii) research; and (iii) services to university. For QU to advance and achieve its mission, it is expected from the faculty to accomplish excellence in all performance domains. In the following, the constituents considered under each of these domains are described.

(i) *Teaching Performance*: The faculty's total score in Teaching Performance in addition to his/her score in Student Rating and Course Portfolio. QU has online course evaluation system for all the courses it offers both at undergraduate and graduate levels. The course portfolio contains the course syllabus, learning outcomes, all exams, sample students' answers in the exams, sample course project reports, etc.

(ii) *Scholarly Endeavor*: The faculty's total score in Scholarly Endeavor, in addition to the total number of instructor's publications and nature of participation. As mentioned earlier, other data related to the Scholarly Endeavor score e.g. Grant, Publisher –etc are not provided since they are confidential. Once the data has received from the Academic Evaluation office at Qatar University, two modifications were done. The first one is to recalculate the Services and Teaching Performance total scores. Because in the academic year 2008/2009 the Academic Advising was under Teaching Performance while currently (as shown in Figure 1) it is under Services, depending on the new rules. This makes the data up to date. The second modification is related to the nature of participation. In the given data, the nature of participation in a published scholarly work is distinguished by either first author, or participant (other than first) author. For each publication, if the faculty participates as a first author he/she is awarded two points otherwise one point is given. Accordingly, the total number of points is recorded as a new field to be used in the analysis.

(iii) *Services*: The faculty's total score in service in addition to his/her score in academic advising and other services. The other services category includes participating in committees inside & outside university, presenting a seminar, lecture, workshop or training session and other services to the society. So all of these are collected and grouped under one category named, other services. The other services receive one score.

The Performance Evaluation at Qatar University is done annually as a joint effort that involves several participants, faculty member, department head, college dean, and the office of evaluation. It provides an assessment of each faculty member’s overall performance according to the faculty appraisal system. The evaluation domains which are teaching performance, scholarly endeavor, and services are required to guidelines about their weights which are described in

Figure 3. It can be noticed from the figure that the assigned weight for each domain is a possible range of percentage of the total. The teaching performance weight is 50-60%, the scholarly endeavor’s weight is 30-40%, and the service contributes 10-30%. The deans, and department Heads in collaboration with their faculty member, regularly agreed on the different weights for teaching performance, scholarly endeavor, and the service at the beginning of each academic year. However, the total contribution from the three components should be 100%. The Faculty Performance Rating Scale of Qatar University is a Five-point performance rating scale used to objectively evaluate faculty performance. The point is a score that determines the qualitative performance of a faculty member which is listed in Table 1.

Quantitative/qualitative	Grade	
	Specific performance/in different domains	General performance
Exceptional	5	4.7 - 5.0
More than expected	4	4.6 - 3.8
Expected	3	3.7 - 2.8
Less than expected	2	2.7 - 1.8
Unsatisfactory	1	1.7 - 1.0

Table 1: Faculty performance grade domains

The overall effectiveness rating of the Faculty Member will be the result of multiplying the percentage (weight) with the grade in each of the three previously mentioned domains.

#### 4. The Data collection

A request was sent to the QU office of academic evaluation to provide a sample from the archival records of the most recent available instructor's evaluation data. The offered sample was composed of 40 university's instructor evaluation data of the academic year 2008/2009 without any names or information that can indicate the identity of the instructor to ensure the confidentiality. The sample was drawn randomly of equal size from the two colleges, CAS and CBE at QU. Due to the fact that these colleges represent the largest QU faculty body as well as having adopted the standard QU faculty appraisal systems, only these two colleges are considered. Some aspects of the data is constrained by the confidentiality, among these are the demographical information e.g. gender, rank, year of experience, etc. In addition, some part of the data that is related to the faculty’s scholarly endeavor evaluation score, e.g. grant information is not provided due to the fact that this information deem to reveal the identification of a faculty

member. Table 2 presents the over performance score determine of evaluation at QU for academic year 2008-2009. The results are determined by including all faculty members. It is clear from the table that the entire faculties who are included in the sample either meet or exceed the expectation in the teaching performance domain.

Table 2: Faculty overall academic performance scores among the evaluation’s domains.

Domain	Exceptional (5)	Above Expected (4)	Expected (3)	Less than Expected (2)	Unsatisfactory (1)
Teaching Performance	-	50	50	-	-
Scholarly Endeavor	15	37.5	40	5	2.5
Service	7.5	45	35	7.5	5

The scholarly endeavor is measured for a faculty member into two categories: (i) Nature of participation (main participant/ associate participant); and (ii) Agency or body of publication (periodical/ conference/regional periodical/regional conference, etc.). Each faculty member is evaluated for a period of two academic years. The mean number of publications is 4.3. To make the picture clearer, after looking to the received data the number of publications is divided into groups as shown in Table 3. The majority of the faculties in the sample (57.5%) published from 1 to 3 publications in the previous two years.

Table 3: Publication count classification

Number of Publications (in Group)	Percentage
(1-3) Publications	57.5
(4-6) Publications	27.5
> 6 Publications	15

The nature of participation in a publication is regarded as either the participating faculty member is the lead participant (first author), or the associate participant (second author, third author, etc). The given data in this field is either lead participant (first author) or associate participant(second author, third author, etc) . In order to transform this data into a quantitative score, it is assumed that if a faculty participates as a lead author, then he/she is awarded two points. For associate participants, the score is counted as one point for each associate participant. The mean score for nature of participation is 7.5 points. When the total score (points) referring to the nature of participation is divided into groups, the percentage distribution of the sample is shown in

**Table 4.**

Table 4: Nature of participation classification

Nature of Publications (in Group)	Percentage
(1-3) Points	35
(4-6) Points	25
(7-9) Points	17.5
>9 points	22.5

**5. Comparing Colleges at QU:**

In this section, we present an statistical study that enables us comparing the two colleges at QU, CAS, and CBE. The faculty performances in teaching, scholarly endeavor, and services are compared between the two college. The independent sample t-test is conducted to check if there is a statistical significant difference between the CAS and CBE in terms of teaching performance, scholarly endeavor, and service.

In Table 9, two independent sample t-test (see Kunter et al., 2004) result is presented which compares the mean teaching performance of faculty members of CAS with CBE. It can be noticed that the two colleges are comparable in teaching performances of their faculty (i.e., Sig=0.539 > 0.05, from Table 5). There is not statistical evidence at 5% significance level that the two colleges are different in their faculties' teaching performances.

Table 5: t-test examining the difference between colleges in teaching performance.

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Teaching performance	Equal variances assumed	0.000	1.00	-0.6	38	0.539	-0.10000	0.16141	-0.42675	0.2267

Equal variances not assumed	-0.6	38	0.539	-0.10000	0.16141	-0.42675	0.2267
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In Table 6, t-test output is presented which compares the mean Scholarly Endeavor of CAS with CBE. It can be noticed that the two are comparable in Scholarly Endeavor of their faculty at 5% statistical significance level (i.e., Sig=0.38 > 0.05 from Table 6)

Table 6: t-test examining the difference between colleges in Scholarly Endeavor

		Levene's Test for Equality of Variances		t-test for Equality of Means				95% Confidence Interval of the Difference		
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Scholarly Endeavor	Equal variances assumed	4.334	0.044	0.873	38	0.38	0.25000	0.28631	-0.3296	0.82961
	Equal variances not assumed			0.873	34.92	0.38	0.25000	0.28631	-0.3312	0.83129

In Table 7, again t-test output is presented which compares the mean service performance of faculty members at CAS with CBE. It can be noticed that the two colleges are comparable at 5% statistical significance level (i.e., Sig=0.86 > 0.05 from Table 7)

		Levene's Test for Equality of Variances		t-test for Equality of Means				95% Confidence Interval of the Difference		
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Service	Equal variances assumed	1.595	0.214	-0.168	38	0.868	-0.05000	0.29802	-0.6533	0.55331
	Equal variances not assumed			-0.168	33.83	0.868	-0.05000	0.29802	-0.6557	0.55576

assumed

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Table 7: t-test examining the difference between colleges in service

All of these three distinct comparisons between CAS and CBE do not support that there is any difference between the faculty performance in the three domains: teaching, research, and services. Next, this research the relationship between the three components of the faculty appraisal system is studied.

## 6. Conceptual models to analyze faculty appraisal system:

In this section, the authors propose conceptual models to study the relationships between the three different components of faculty appraisal system at QU. The Structural Equation Modeling (SEM) technique is used for the development the models. SEM is a statistical methodology that takes a confirmatory (i.e., Hypothesis testing) approach to the analysis of a structural theory bearing on some phenomenon (Byrne, 2001). Typically, this theory represents “causal” processes that generate observations on multiple variables (Bentler, 1988; Bollen, 1989). The term SEM conveys two important aspects of the procedure: i) that the causal processes under study are represented by a series of structural (i.e., regression) equations, and ii) that these structural relationships can be modeled pictorially to enable a clearer conceptualization of the theory under study. The hypothesized model can then be tested statistically in a simultaneous analysis of the entire system variables to determine the extent to which it is consistent with the data for inferential purposes. If the goodness-of-fit is adequate, the model argues for the plausibility of postulated relations among variables; if it is inadequate, the tenability of such relations is rejected. There are several aspects of SEM which set it apart from the older generation of multivariate procedures. Firstly, it takes a confirmatory rather than an exploratory approach (Kutner et al.2004). Moreover, by demanding that the pattern of inter-variable relations be specified a priori, SEM lends itself well to analysis of data for inferential purposes. By contrast, most other multivariate procedures are essentially descriptive by nature (e.g., exploratory factor analysis), so that hypothesis testing is difficult, if not impossible. Secondly, whereas traditional multivariate procedures are incapable of either assessing or correcting for measurement error, SEM provides explicit estimates of these error variance parameters. Indeed, alternative methods such as linear regression (Kutner et al. 2004) assume that error(s) is the exploratory (i.e., independent) variables vanish(es). Thus, applying those methods when there is error in the exploratory variables is tantamount to ignoring error, which may lead, ultimately, to serious inaccuracies, especially when errors are sizeable. Such mistakes are not encountered normally when SEM analyses are used. Thirdly, although data analyses using the former methods are based on observed measurements only, those using SEM procedures can incorporate both unobserved (latent) and observed variables. Lastly, there are no widely and easily applied alternative methods for modeling multivariate relations, or for estimating point and/or interval indirect effects, these important features are available using SEM methodology. Given, these highly desirable characteristics, SEM has become a popular methodology for non-experimental research, where methods for testing theories are not well developed an ethical considerations make experimental design unfeasible (Bentler, 1988). Thus,

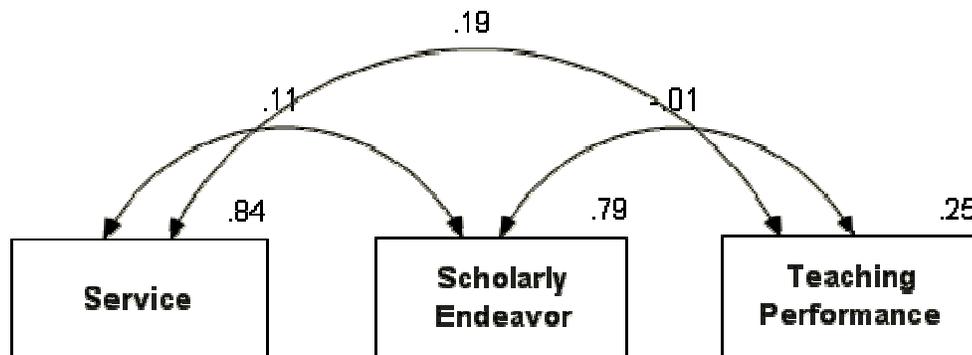
SEM can be utilized very effectively to address numerous research problems involving non-experimental research. The software package AMOS, developed by SPSS Inc is very comprehensive and easy to use for the development and analysis of SEM (Arbuckle, 2007), however, it is essential that some of the key concepts related to the SEM methodology are explained briefly.

In behavioral sciences, researchers are often interested in studying theoretical constructs that cannot be observed directly. These abstract phenomena are termed latent variables, or factors. Because the latent variables are not observed directly, it follows that they are not measurable directly. Thus, a researcher must operationally define the latent variable in terms of behavioral believe used to represent it. A latent or unobserved variable is linked to one that is observable, and thus making its measurement possible. Assessment of the behavior, then, constitutes the direct measurement of an observed variable, albeit the indirect measurement of an unobserved variable. These measured scores (i.e., measurements) are termed observed or manifest variables; within the context of SEM methodology, they serve as indicators of the underlying construct which they are presumed to represent. Given this necessary bridging process between observed variables and unobserved latent variables, it is important to indentify that SEM model still requires researchers to be circumspect in their selection of assessment measures.

SEMs are schematically portrayed using particular configuration of four geometric symbols-a circle (or ellipse), a square (or rectangle), a single-headed arrow, and a double-headed arrow. By convention, circles (or ellipses) represent unobserved latent factors. Squares (or rectangles) represent observed variables, single-headed arrows represent the impact of one variable on another, and the double-headed arrows represent co-variances or correlations between pairs of variables. As mentioned previously, the motive of this section is to explore the relationship between the three components of QU faculty’s appraisal system, which are the Teaching Performance, Scholarly Endeavor and Service. In this regard, the conducted research presents two conceptual models, presented in Figure 1 investigates the relationship in general between these three variables .While the second conceptual model which is presented in Figure 2 specifies the relationship between the factors that are related to these variables . Those factors are listed in Table13. Since the data are taken from QU Academic Evaluation Office, so all the variables that are used in the conceptual models can be considered as observed variables. All the variables are regressed as un-standardized estimates and 5% level of statistical significance is observed to establish any inferences.

### 6.1. A preliminary SEM

Figure 1: Preliminary SEM



The Preliminary model is very simple; it gives brief general information about the nature of the relationship between QU Faculty’s Appraisal System components which include the score in teaching performance, scholarly endeavor, and service. In Figure 1 the proposed relationships between the considered observed variables are conceptualized. The model fit is tested using the Goodness of Fit Index (GFI). GFI takes value between 0 and 1 where 1 indicates a perfect fit, the GFI for this model is 0.89. The AMOS output of the analysis is reported in Table 8.

Table 8: Output of proposed preliminary SEM

			Estimate	S.E.	C.R.	P
Scholarly Endeavor	<-->	Service	.106	.132	.799	.424
Scholarly Endeavor	<-->	Teaching Performance	-.013	.071	-.175	.861
Service	<-->	Teaching Performance	.187	.079	2.360	.018*

Table 8 lists the un-standardized regression weights between the three observed variables teaching performance, scholarly endeavor, and service. The teaching performance and service are positively related at 5% statistical significance. This is due to the fact that the measured regression coefficient (covariance) between teaching performance and service is 0.187 with  $p=0.018$ . Whereas there is no statistically significant relationship noticed between the scholarly endeavor, and teaching performance ( $p=0.861 > 0.05$ ) at 5% level. Similarly, no statistically significant relationship is found between scholarly endeavor and service ( $p=0.424 > 0.05$ ).

**6.2. An extended SEM**

An extended conceptual model investigates more specifically the relationship between teaching performance, scholarly endeavor, and service at QU faculty’s appraisal system by identifying the nature of the relationship between the factors that are used to calculate the total score of these three variables. Table 9 provides a brief description of the variables that are used in the extended conceptual model.

Table 9: Description of the observed variables in an extended SEM

Variable name	Description
Service	
S1	Other Services
S2	Academic Counseling
Scholarly endeavor	
R1	Number of Publications
R2	Nature of Participation
Teaching	
T1	Course Portfolio
T2	Students Rating

In Figure 2, the proposed relationships between the observed variables of the extended SEM model are conceptualized and the output of the analysis is reported in Table 10.

Figure 2: An extended SEM

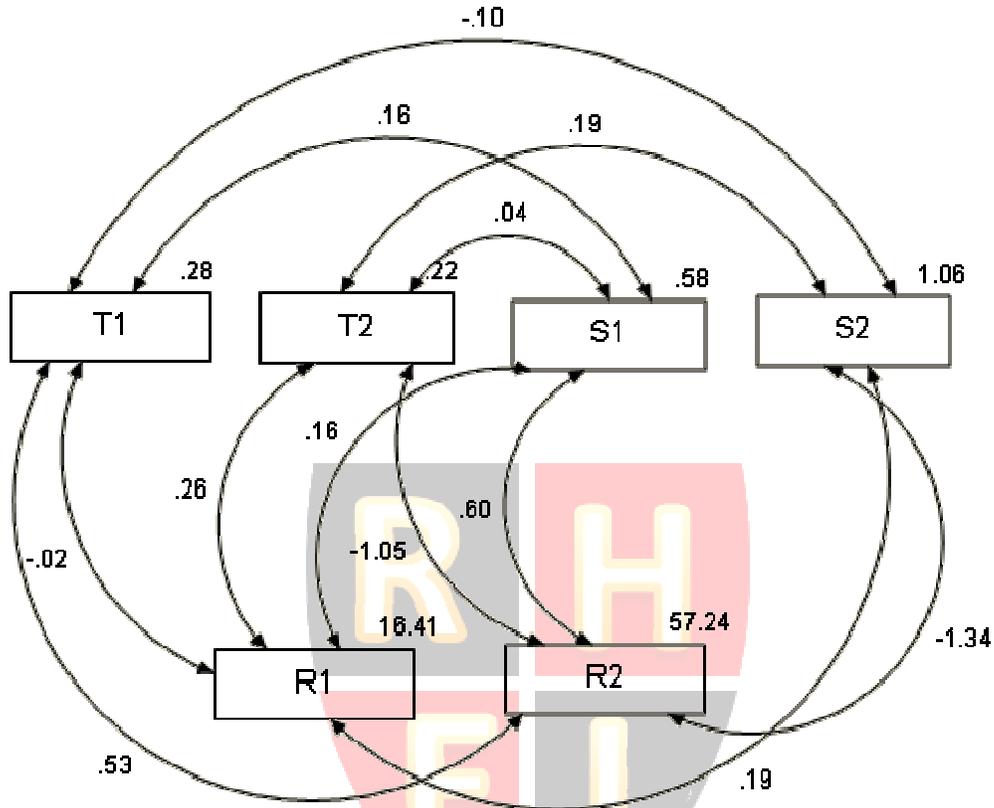


Table 10: Output of proposed extended SEM

	Estimate	S.E.	C.R.	P
S1 <--> T2	.044	.049	.886	.376
R2 <--> S2	-1.337	1.251	-1.069	.285
T1 <--> R1	-.025	.334	-.074	.941
S1 <--> R2	.604	.910	.663	.507
S1 <--> R1	.161	.491	.327	.744
T2 <--> S2	.186	.080	2.308	.021*
S1 <--> T1	.156	.067	2.325	.020*
S2 <--> T1	-.102	.076	-1.344	.179
R2 <--> T1	.530	.612	.866	.387
T2 <--> R1	.260	.292	.889	.374
S2 <--> R1	.189	.657	.288	.773
T2 <--> R2	-1.053	.581	-1.811	.070

The model fit is tested using the Goodness of Fit Index (GFI). GFI takes value between 0 and 1 where 1 indicates a perfect fit, the GFI for this model is 0.83. An extended SEM helps looking more specifically to the relation between the teaching performance and service. As listed in Table 9 that teaching performance score for a faculty member is comprised of two factors: the course portfolio (T1); and students' evaluation (T2). The services score is also contributed by two factors; university committee (other) services (S1); and academic (students') counselling (S2). In Table 10 the outputs of AMOS model which is shown in Figure 2 are presented. The course portfolio a faculty member prepares for his/her teaching and the faculty's other services are positively related at 5% statistical significance. Also the academic counseling and faculty's student rating are positively related at the statistical significant level of 5%. These results supports the initial findings of the positive relation between the teaching performance and the service and identify about the relationships at individual basis. In conclusion, the two SEM model enable us to establish following hypotheses:

***Hypothesis 1:*** There exist significant positive correlation between a faculty's teaching performance and services

This hypothesis is supported as Table 8 shows overwhelming evidence that the teaching performance and the service are positively related. Thus, it can be concluded that the faculty with higher teaching score rating are also noticed to be strongly active and provides more university and community services including academic counseling.

***Hypothesis 2:*** There is weak relationship between teaching performance and the scholarly endeavor.

This hypothesis can be noticed from Table 8, there is no statistically significant relation between the teaching performance score of the university faculty and his/her scholarly endeavor score. Table 10 shows that various teaching outcomes (students rating of teaching, course portfolio) are not related with scholarly endeavor (number of publications and nature of participation). This finding is coupled with the comprehensive Hattie and March (1996)'s meta-analysis and it supports the view that is cited by Terenzini and Pasarella (1994) which states about one of the of the myths of higher education that is good researchers are good teachers. However, this result can be justified as limited to a single institution, Qatar University.

***Hypothesis 3:*** There is also a weak relationship between faculty's service and the scholarly endeavor.

This hypothesis can be also be concluded from Table 8, there is no statistically significant relationship between the service performance and the scholarly endeavor. This result might be viewed again as limited to QU.

## **8. Conclusion and Future Works**

The objective of the study was to investigate the relationship between Qatar University faculty's performance (score) in the three domains (teaching performance, scholarly endeavor, and service) of the Appraisal System. In this regards, a sample from office of academic

evaluation, Qatar University from its two major colleges, College of Business & Economics, and College of Arts & Science. Two conceptual models are proposed to explore the faculty performance at Qatar University. The study shows that the two colleges' faculties are equally performing and there is no significant difference among the two colleges in regards to the three different performance domains: teaching performance, scholarly endeavor, and service. This research also explores the relationships between aforementioned three components. Two distinct models of relationships are hypothesized and tested using Structural Equation Modeling approach. Later, a confirmatory analysis is used that establishes that there is statistically significant positive relationship between the teaching performance and services. Whereas, the other components are not significantly related at the Qatar university. Thus, it can be concluded that teaching performance and scholarly endeavor are not related, which seems to be consistent with the previous studies in this field (Hattie and March 1996). While it may be limited to the two colleges of Qatar University, this study demonstrates that good teaching performance is also related to the enhance of university and community services.

This research can be extended in the future by considering more colleges or even more institutions inside or outside Qatar e.g. GCC. Those institutions may have different appraisal systems, so applying this study among them will help advances in exploring the relationship between teaching and research that is found in this study.

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**Appendix**

Figure 3 The Domains and Weights of Qatar University Faculty Appraisal System

