A comparative analysis of ABET accredited programs in the GCC countries

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Abstract: Colleges and universities are in a race to get their academic programs accredited as it offers many benefits to various stakeholders. It would be beneficial to students if they graduate from an accredited program as compared to a non-accredited program. A comparative analysis of Accreditation Board for Engineering and Technology (ABET) accredited programs in the Gulf Cooperation Council (GCC) countries is not available in the open literature. In this paper, a quantitative analysis of all currently ABET accredited programs in the GCC countries is presented. Once accredited, it is a challenging task for an accredited program to maintain its accreditation status. Some of the academic programs lose their accreditation status for various reasons. This paper also reports on the current status of all historically accredited programs in the GCC countries. It is expected that the analysis presented in this paper may be insightful to various stakeholders of colleges and universities in the GCC countries in particular.

Keywords: ABET; Accreditation; Engineering; Technology; Program

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Introduction

Quality education is one of the Sustainable Development Goals (SDGs) of the United Nations (UN) [1]. Accreditation is a stamp of quality education. Accreditation is a peer-review process to determine if academic programs meet globally acceptable quality standards. Once an academic program gets accredited it has to maintain its quality because the accreditation process needs to be renewed periodically as it is not permanent. There are various types of global accreditations available depending on the nature of the academic programs. For example, the ABET accreditation is considered as the gold standard for many types of academic programs such as engineering programs and engineering technology programs.

Every educational institution strives to ensure the quality of its academic programs, enhance students' learning experience, and make their institutions more accountable to various stakeholders. Several case studies on the assessment of academic programs at various institutions continue to be reported in the open literature. One such case study of a Saudi university was recently reported in [2]. The relationship between Engineering Program Accreditation (EPA) and Institutional Performance (IP) using perceptual measures was examined within the GCC countries in [3]. The empirical analyses presented in [3] has shown that EPA has a statistically significant positive relationship with the two IP dimensions that were considered, namely, graduate employability and student retention and attrition.

The quality assurance mechanisms and academic accreditation processes in Sultan Qaboos University (SQU), Oman were evaluated in [4]. Some key challenges facing the implementations of quality assurance and accreditation procedures in both accredited and non-accredited colleges in SQU were also discussed and analyzed in [4]. A detailed accreditation experience for a recently established civil engineering program at Prince Mohammad bin Fahd University (PMU) in Saudi Arabia was presented and analyzed in [5]. Some lessons learned from the ABET accreditation exercise, which would help particularly for the first time applicant were also discussed in [5].

Many studies have shown that Higher Education Institutions (HEIs) across the GCC countries have implemented online learning effectively in their response to COVID-19 pandemic thus leading their way to distance education and digital transformation [6]. All ABET accredited programs are evaluated against the same criteria regardless of the mode of delivery. So, the remote way of delivery during the COVID-19 pandemic did not affect the accreditation status of the academic programs. The framework of accreditation process automation, its significance and relevance, and the role of intelligent systems and soft computing tools in improving the efficacy and efficiency of the automation of the accreditation processes in Saudi universities was described in [7].

Related Work

In [8], a brief survey of all ABET accredited academic programs at the associate, bachelor's, and master's degree level in Saudi universities and colleges in 2015 was presented. It was concluded in [8] that universities and colleges in the other GCC countries, except Saudi Arabia, had not received ABET accreditation to programs such as aerospace engineering, biomedical technology, mining engineering, non-destructive evaluation technology, nuclear engineering, and polymer engineering technology. These academic programs were reported to be unique to the universities and colleges in Saudi Arabia in terms of ABET accreditation.

In [9], ABET accredited academic programs at various degree levels in Saudi higher educational institutions in 2021 were analyzed. It was concluded in [9] that the number of ABET accredited academic programs at the bachelor's degree level in Saudi higher educational institutions in 2021 had increased by more than 3-times since 2015 as was reported in [8]. Moreover, King Fahd University of Petroleum & Minerals (KFUPM) is the only university in Saudi Arabia, which has ABET accredited programs at all degree levels as reported in [8-9].

Although many studies get reported from time to time on the ABET accredited programs in the GCC countries, however, most of these studies are either specific to any one particular university or any one particular country in the GCC region. In most of these cases, the authors have reported about the successful accreditation process at their respective employing university. There is hardly any study that has been reported on the accredited programs in the entire GCC region. This is the gap we have identified in the literature. This gap was filled to some extent by analyzing the ABET accredited programs in Saudi Arabia in [8-9].

Comparative Analysis

The number of ABET accredited programs in the GCC countries in 2025 are shown in Table 1 [10]. As can be seen from this table, the highest number of ABET accredited associate degree programs are in Kuwait followed by Saudi Arabia. While the highest number of ABET accredited bachelor's degree programs are in Saudi Arabia followed by United Arab Emirates (UAE). Only Saudi Arabia has ABET accredited master's degree programs. It is difficult to assess how many degree programs are available in the GCC countries at various degree levels that are eligible to apply for ABET accreditation. Therefore, it is not possible to figure out how much percentage of the eligible degree programs in the GCC countries are accredited by ABET at the various degree levels. Also, ABET does not accredit Ph.D. programs. Therefore, only associate, bachelor's, and master's degree programs are analyzed in this study.

Table 1. Number of ABET accredited programs in the GCC countries in 2025

GCC Countries	Associate	Bachelor's	Master's
Bahrain	0	13	0
Kuwait	22	23	0
Oman	0	9	0
Qatar	0	12	0
Saudi Arabia	16	229	7
UAE	0	85	0
Total	38	371	7

The number of colleges/universities with ABET accredited programs in the GCC countries in 2025 are shown in Table 2 [10]. As can be seen from this table, the number of colleges/universities with ABET accredited bachelor's degree programs are highest in Saudi Arabia followed by UAE. Only Sultan Qaboos University has all the ABET accredited bachelor's degree programs in Oman. King Abdulaziz University (KAU) has the maximum number of ABET accredited bachelor's degree programs in Saudi Arabia. KAU has 27 and 8 ABET accredited bachelor's degree programs in its Jeddah and Rabigh campuses, respectively. Moreover, only KFUPM has ABET accredited master's degree programs in Saudi Arabia.

Table 2. Number of colleges/universities with ABET accredited programs in the GCC countries in 2025

GCC Countries	Associate	Bachelor's	Master's
Bahrain	0	3	0
Kuwait	3	6	0
Oman	0	1	0
Qatar	0	3	0
Saudi Arabia	3	36	1
UAE	0	15	0
Total	6	64	1

The number of ABET accredited programs with international mutual recognition agreement in the GCC countries in 2025 are shown in Table 3 [10]. As can be seen from this table, there are no ABET accredited programs with international mutual recognition agreement at the associate and master's degree levels in any of the GCC countries. Among the GCC countries, only Saudi Arabia has the highest number of ABET accredited bachelor's degree programs with international mutual recognition agreement followed by UAE. The Seoul Accord is the only international mutual recognition agreement for all the 82 ABET accredited bachelor's degree programs in the GCC countries as indicated in Table 3.

Table 3. Number of ABET accredited programs with international mutual recognition agreement in the GCC countries in 2025

GCC Countries	Associate	Bachelor's	Master's
Bahrain	0	4	0
Kuwait	0	5	0
Oman	0	1	0
Qatar	0	1	0
Saudi Arabia	0	60	0
UAE	0	11	0
Total	0	82	0

The accreditation commissions of ABET accredited programs in the GCC countries in 2025 are shown in Table 4 [10]. As can be seen from this table, all the four accreditation commissions lead and conduct ABET accreditation activities in the GCC countries at various degree levels. These four accreditation commissions are Applied and Natural Science Accreditation Commission (ANSAC), Computing Accreditation Commission (CAC), Engineering Accreditation Commission (EAC), and Engineering Technology Accreditation Commission (ETAC).

Table 4. Accreditation commissions of ABET accredited programs in the GCC countries in 2025

GCC Countries	Associate	Bachelor's	Master's
Bahrain	-	CAC, EAC	-

Kuwait	ANSAC, ETAC	CAC, EAC, ETAC	-
Oman	-	CAC, EAC	-
Qatar	-	CAC, EAC	-
Saudi Arabia	ETAC	ANSAC, CAC, EAC, ETAC	ANSAC, EAC
UAE	-	ANSAC, CAC, EAC, ETAC	-

The number of ABET accredited programs under ANSAC in the GCC countries in 2025 are shown in Table 5 [10]. As can be seen from this table, the highest number of ABET accredited bachelor's degree programs under ANSAC are in Saudi Arabia followed by UAE.

Table 5. Number of ABET accredited programs under ANSAC in the GCC countries in 2025

GCC Countries	Associate	Bachelor's	Master's
Bahrain	0	0	0
Kuwait	1	0	0
Oman	0	0	0
Qatar	0	0	0
Saudi Arabia	0	12	2
UAE	0	9	0
Total	1	21	2

The number of ABET accredited programs under CAC in the GCC countries in 2025 are shown in Table 6 [10]. As can be seen from this table, the highest number of ABET accredited bachelor's degree programs under CAC are in Saudi Arabia followed by UAE.

Table 6. Number of ABET accredited programs under CAC in the GCC countries in 2025

GCC Countries	Associate	Bachelor's	Master's
Bahrain	0	4	0
Kuwait	0	5	0
Oman	0	1	0
Qatar	0	1	0
Saudi Arabia	0	68	0
UAE	0	11	0
Total	0	90	0

The number of ABET accredited programs under EAC in the GCC countries in 2025 are shown in Table 7 [10]. As can be seen from this table, the highest number of ABET accredited bachelor's degree programs under EAC are in Saudi Arabia followed by UAE.

Table 7. Number of ABET accredited programs under EAC in the GCC countries in 2025

GCC Countries	Associate	Bachelor's	Master's
Bahrain	0	9	0
Kuwait	0	17	0
Oman	0	8	0
Qatar	0	11	0
Saudi Arabia	0	148	5
UAE	0	57	0
Total	0	250	5

The number of ABET accredited programs under ETAC in the GCC countries in 2025 are shown in Table 8 [10]. As can be seen from this table, the highest number of ABET accredited associate degree programs under ETAC are in Kuwait followed by Saudi Arabia. Moreover, the highest number of ABET accredited bachelor's degree programs under ETAC are in Saudi Arabia followed by UAE.

Table 8. Number of ABET accredited programs under ETAC in the GCC countries in 2025

GCC Countries	Associate	Bachelor's	Master's
Bahrain	0	0	0
Kuwait	21	1	0
Oman	0	0	0
Qatar	0	0	0
Saudi Arabia	16	10	0
UAE	0	8	0
Total	37	19	0

The number of historically ABET accredited programs in the GCC countries in 2025 are shown in Table 9 [10]. As can be seen from this table, the highest number of historically ABET accredited associate degree programs are in Kuwait followed by Saudi Arabia. It is worth mentioning that the University of Hafr Al Batin in Saudi Arabia lost its accreditation status for all its four associate degree programs. Although the number of currently ABET accredited bachelor's degree programs are about 2.7 times more in Saudi Arabia than UAE, however, the highest number of historically ABET accredited bachelor's degree programs are in UAE followed by Saudi Arabia.

Table 9. Number of historically ABET accredited programs in the GCC countries in 2025

GCC Countries	Associate	Bachelor's	Master's
Bahrain	0	3	0
Kuwait	15	2	0

Oman	0	0	0
Qatar	0	0	0
Saudi Arabia	5	14	0
UAE	0	23	0
Total	20	42	0

The number of colleges/universities with historically ABET accredited programs in the GCC countries in 2025 are shown in Table 10 [10]. As can be seen from this table, Kuwait and Saudia Arabia have the same number of colleges/universities with historically ABET accredited associate degree programs. While Saudi Arabia and UAE have the same number of colleges/universities with historically ABET accredited bachelor's degree programs. Although King Abdulaziz University in Jeddah has 27 currently ABET accredited bachelor's degree programs, however, it has lost its accreditation status for only its Mathematics/Astronomy bachelor's degree program. While King Abdulaziz University in Rabigh has not lost its accreditation status for any of its ABET accredited bachelor's degree programs.

Table 10. Number of colleges/universities with historically ABET accredited programs in the GCC countries in 2025

GCC Countries	Associate	Bachelor's	Master's
Bahrain	0	1	0
Kuwait	2	2	0
Oman	0	0	0
Qatar	0	0	0
Saudi Arabia	2	8	0
UAE	0	8	0
Total	4	19	0

The percentage of ABET accredited programs in the GCC countries in 2025 is shown in Figure 1. As can be seen from this figure, the ABET accredited programs at the master's degree level is shown to be 100% for Saudi Arabia as it is the only country with the ABET accreditation at this degree level among the GCC countries compared. Note that not all eligible master's degree programs in Saudi Arabia are accredited by ABET.

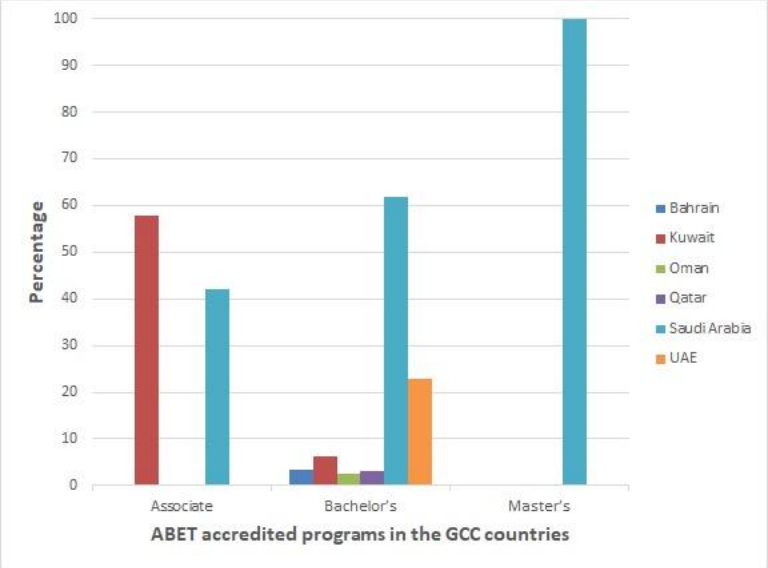

Figure 1. Percentage of ABET accredited programs in the GCC countries in 2025

The percentage of historically ABET accredited programs in the GCC countries in 2025 is shown in Figure 2. As can be seen from this figure, Oman and Qatar are the only two GCC countries to consistently maintain their accreditation status for all their ABET accredited bachelor's degree programs. This may also be due to the fact that Oman and Qatar have the least number of ABET accredited bachelor's degree programs among the GCC countries compared. Moreover, no ABET accredited master's degree programs in Saudi Arabia have lost their accreditation status.

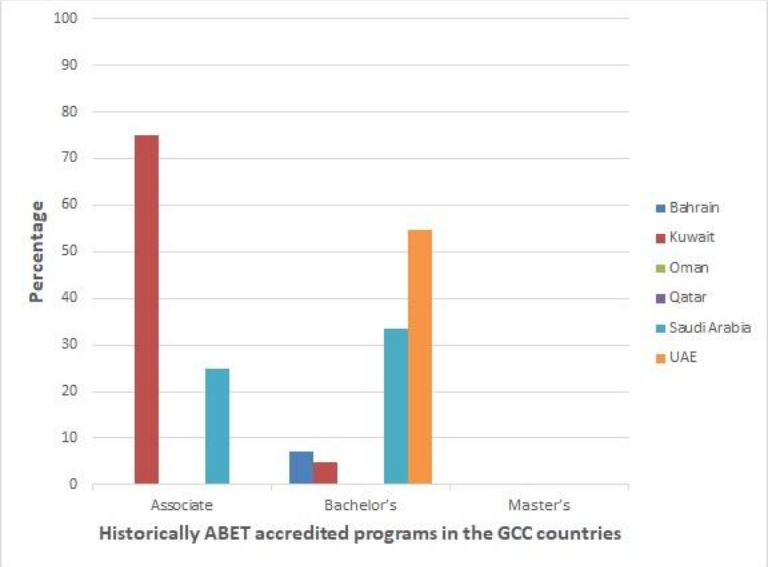

Figure 2. Percentage of historically ABET accredited programs in the GCC countries in 2025

Conclusions

It is a necessary requirement to ensure inclusive and quality education while promoting lifelong learning opportunities for all. To a large extent an accredited academic program ensures this. This is the first study to analyze all the ABET accredited programs in the entire GCC region. Some of the key findings of this study are as follows. More than half of the ABET accredited associate degree programs (57.89%) are in Kuwait and the remaining are in Saudi Arabia (42.11%). While more than half of the ABET accredited bachelor's degree programs (61.73%) are in Saudi Arabia followed by UAE (22.91%). About 22.1% of all the ABET accredited bachelor's degree programs in the GCC countries have an international mutual recognition agreement (the Seoul

Accord). Kuwait has the maximum percentage (75%) of historically ABET accredited associate degree programs and the remaining are in Saudi Arabia (25%). More than half of the historically ABET accredited bachelor's degree programs (54.76%) are in UAE followed by Saudi Arabia (33.33%). One of the limitations of this study is that the analysis presented in this paper is only confined to the GCC countries, however, it may serve as a case study to the other countries where ABET accredited programs are found.

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