

Abstract

Application of Lean Six Sigma(LSS) in Higher Education, in Kuwait-Case of AU College of Business [†]

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1. Introduction

As part of AU's mission statement, being a leader in higher education and, as such, pursuing objectives promised to be achieved by AU's core values of PRIDE, excellence in education can only be achieved through quality, efficiency, and Lean management operations.

This paper aims to test the readiness of AU, College of Business for Lean Six Sigma, pointing out the theories and various methods behind the application of Lean Six Sigma (LSS) principles in higher education, further to developing key guidelines for LSS implementation in HEIs in Kuwait. Thus, it enhances internationalization in higher education and increases service quality through the process of production, for improving all aspects that impact delivery. Eventually, it will add value to customers.

LSS is viewed as one of the early models of management used in the 21st century adopted from the realm of private enterprises and corporate businesses. One of the first debates on the use of Lean management was initiated back in 1995 while debating on leadership in higher education [1]. These days, a few hundred universities use Lean management around the world to improve their management models and systems. These universities cooperate within the international Lean HE Hub network, which is a global organization focused on networking, sharing best practices, and supporting the delivery of Lean management [2]. The application of Lean in higher education, HE is carried out in accordance with the following principles: (1) it is anticipated to be action-focused and based on practice; (2) research is based on the application of applied learning while conducting research in educational management to help the process of applied learning; (3) targets faculty and staff members working in higher education who are members of the continuous improvement committees in these institutes. Lean in teaching is the implementation of Lean in the design and delivery of courses, academic programs, and academic processes for improvement of all phases associated with teaching and student learning objectives in a beneficial manner to all stakeholders involved.

This research will explore the possible results of applying Lean in operations, from both academic and administrative perspectives, as well as exploring other associates or complements to Lean such as TQM, Kaizen, and Six Sigma, in higher education. As a result, it is aimed at constructing more agile circumstances for higher education institutes. This research will also highlight international programs that are adopted by green organizations that follow Lean culture, TQM, Six Sigma, and Kaizen.



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2. Methodology

The research approach will be a mix of quantitative and qualitative approaches. The use of a qualitative approach will help determine the basis of the main variables in relation to the studied HEIs and relate to international HEI practice regarding Lean. The quantitative approach will be used to collect the highest correlation between the variables of interest.

Our research draws on Refs. [3–5], where the study deduced the need for testing further the LSS concept in a case study environment.

Our approach will test the readiness of HEI for the LSS model, check current handling procedures and focus on technology application and infrastructure, check current practices and conduct qualitative surveying, incorporating the Six Sigma stage models.

There will be a collection of data in the forms of surveying the relationships that exist between the different variables in the context of LSS strategies, using the DMAIC principles for Six Sigma, analyzing the data found, and building conclusions and recommendations, in line with the qualitative data collected and analyzed [6–8].

3. Results

The study will cover exploring the readiness of the AU College of Business with regards to implementing Lean Six Sigma principles and practices, with regards to systems, use of technology, innovation in the delivery of Education, etc.

The challenges and discrepancies encountered in the university (where Lean and its developed derivatives) are expected to be as follows:

- Vagueness in understanding ideas, terms, concepts, and tools.
- Absence of dedication and guidance leadership initiated by upper management.
- Deficient commitment and gap in training of the proper staff.
- Missing clarity and openness in mean of communication.
- Little or few allocations of resources assigned to the interventions [1,9,10]
- Lack of proper alignment of strategic plans with the right interventions of the organizations.
- Missing identification of proper definitions of problems to be solved and insufficient coherence of the action and proposed changes brought to the process.
- Lack of acceptance of change through adequate change management strategies, the culture of blame, weakness of conflict management within the organization, inadequate justification [10–13].
- Fast-paced changes in the external environment.
- Specific challenges to the university arising from complications stemming from the community, its activities, and the process.
- Faculty perception that there would be a compromise on their academic freedom [4].

4. Implications

Universities are searching for ways to maintain a competitive advantage in a changing environment, which may include sacrificing services to maintain cost-effectiveness. Being complex organizations, there are thousands of business processes facilitating the primary functions and if those processes are streamlined, then efforts can be focused on the primary functions of research, innovation, and education [6,14–16]. The extension of the Lean principles and practices to higher education is an excellent opportunity for all higher education institutes that are seeking academic and operational excellence through a controlled approach, with international exposure and correlation [17]. This approach leverages the commitment and experience of faculty and staff, which leads in turn to the expansion, growth, and development of such higher education institutes. While there may be challenges that may limit the acceptance and impact of LHE, there is an enormous value added to the experience this university serves its faculty and its staff [18–20].

5. Originality Value

This research for the first time explores the application of LSS in HEIs within the framework of Kuwait; it will help as a case study to identify the readiness of HEIs to

incorporate LSS within the case of AU, thus, to identify the barriers and point out the advantages of applying LSS. This research will give insights into the most successful approaches in LSS applied around the world.

This research will help AU identify its readiness for LSS concepts and identify the benefits of LSS in quality education.

6. Contribution

The following are some noteworthy contributions that are expected to emerge out of this study:

- Map the existing knowledge on the application of Lean Six Sigma in HEI, within AU.
- Explore the benefits of applying LSS in HEIs.
- Test the applicability and readiness of LSS in HIEs in GCC, and the Middle East.
- At the moment, there is no organized review or incorporation of the published secondary literature on the topic of Lean Six Sigma in higher education in the state of Kuwait. This work review will provide an important beneficial starting point for academic researchers who are interested in advancing theories on the topic of total quality management in academic institutions.
- The application of Lean Six Sigma, in neighboring GCC/ Middle Eastern countries, has proven its efficiency, in the literature review, in enabling universities to operate more efficiently [21].
- The case study will use DMAIC principles for service improvement. This effort will not be a bottom-end-line drive, but rather a necessity to build capacity in line with the mission statement of the AU Kuwait; in particular, improving efficacy with the detection of current workload allocation set by the top management. Training of key staff is critical in order to follow the DMAIC cycle effectively and gain significant results, as is the buy-in of senior management if the initiative is to take root [4].
- This research will help build the context to understand the efficiency of applying LSS in higher, as an earlier study in Saudi Arabia concluded the need for further elaborations and investigations as there were limitations as mentioned [21,22]: if these insights were to be used generically in other developing countries, validation of the conclusions presented in relation to other countries should be conducted to ensure they are still well-founded in a different context.

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