

Thesis Administration Process Improvement using Six Sigma Approach Integrated with Balanced Scorecard: A Framework

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Abstract

The lack of smoothness in the administrative process of a student's thesis has an impact on the inability of students to complete their studies on time which is also one of the main quality service performances of university. This study aims to provide a framework in improving administrative process of student's thesis using Six Sigma approach integrated with Balanced Scorecard, explore the benefits of the alignment, and identify potential challenges and limitations in implementing this approach. It is expected to provide insights for the education stakeholders and practitioners to integrate the two frameworks and leverage their combined benefits to achieve sustainable and competitive outcomes.

Keywords: Six Sigma, balanced scorecard, thesis administrative process

1. Introduction

The quality of higher education depends on the quality of student learning outcomes which can be impacted by how well the academic administration in higher education can serve to support achievement of the education objectives (Dicker et al., 2019). The rapid changes of national education policy, technology development, and industry needs of human resources drive the changes of the higher education strategically as well as administratively. The changes of education policy require administrative process compliance and alignment. The academic administrative process is inseparable from the education policy in which it depends on how well the university vision, mission, objectives, strategies and policies are cascaded and aligned with the procedures, which are still existing issues in Indonesian higher education (Nethravathi et al., 2022).

Thesis is one of programs resulted in the academic student learning outcomes in Indonesian higher education. The role of administration in thesis includes ensuring that students have the necessary resources and support to complete their research, that deadlines are met, and that the final thesis paper meets quality and format standards. However, thesis administration in Indonesian higher education faces several challenges and issues that can impact the quality and efficiency of the process. Some of these issues include lack of policy alignment, lack of clear information and guidelines, complicated administrative system.

Addressing the general administrative problems with thesis in Indonesia requires a collaborative effort from universities, supervisors, examiners, and administrative staff. Thus, the university key performance indicators (KPIs) are cascaded to the lowest level unit of universities.

Managing administrative process require suitable approaches. Quality management practices such as Six Sigma has a potentiality to address the general administrative problems by applying its data-driven methodology to analyze the process, identify areas for improvement, and implement solutions to address the root cause of the problem. Balanced scorecard as a strategic management practice can be applied by incorporating academic KPIs related to clear

guidelines, process efficiency, student satisfaction, timeliness, and quality of supervision. By tracking these KPIs, universities can identify areas for improvement and ensure that their administrative processes for thesis submission are aligned with their strategic goals and objectives. It is applicable to integrate Six Sigma and Balanced Scorecard approaches to set platform for organization excellence and improvement (Heavey & Murphy, 2012; Holmes et al., 2015) .

The objective of this study is to propose a framework in improving administrative process of student's thesis using Six Sigma approach as quality management practice integrated with Balanced Scorecard as strategic management practice, explore the benefits of the alignment, and identify potential challenges and limitations in implementing this framework in Indonesian higher education.

2. Literature Review

Academic administration challenges and issues

Academic administration plays a critical role in ensuring the quality of educational services provided by an institution. Effective academic administration involves the development and implementation of policies and procedures that support high-quality teaching and learning, such as curriculum development, student evaluation, and faculty development, the extent to which activity progress is achieved, and the workload assessment of human resources which can lead to higher service quality (Dedi et al., 2020). Thus, academic administration quality service needs to be measured to monitor and evaluate its performance (Rizos et al., 2022) . When students and other stakeholders perceive the quality of services provided by an institution as high, they are more likely to be satisfied with their experiences and more likely to recommend the institution to others (Adikaram et al., 2015). Conversely, poor service quality can lead to dissatisfaction, negative word-of-mouth, and even loss of enrollment or funding (Sharabi & Davidow, 2010). By focusing on both academic administration and service quality, educational institutions can improve their overall performance and reputation, and ultimately achieve their mission and goals.

Challenges and issues of academic administration exist in Indonesian higher education includes lack of proper strategic alignment, lack of clear information and guidelines, and complicated administrative system

1. Lack of proper strategic alignment.

University strategic policy changes rapidly to respond the vast changes of environment (national academic policy and industry's needs). The main reasons for the lack of proper university strategic alignment is the lack of proper guidance and best practice as well as ability to translate vision, mission, objectives, and policies into procedures (Nethravathi et al., 2022). While there are some policies and regulations in place, they are often not comprehensive enough and updated to guide universities in their strategic planning and implementation. This can lead to process inconsistencies and lack of coherence, and coordination in university activities.

2. Lack of clear information and guidelines.

Students often struggle to understand the administrative procedures for thesis submission, which may vary across universities. The lack of clear information and guidelines from universities can lead to errors in thesis submission and slow down the thesis completion process. Regarding thesis administrative processes, universities need to establish clear and consistent standards and procedures for thesis development and evaluation. They also need to invest in the recruitment and development of qualified and experienced thesis supervisors, who can provide adequate guidance and support for students during the thesis development process.

3. Complicated administrative system

The thesis administrative system in Indonesia is often complex and confusing. The administrative process for thesis involves multiple stages, such as title submission, supervisor approval, proposal submission, examiner approval, revision submission, and final defense approval. This can slow down the thesis completion process and make it difficult for students to fulfill administrative requirements. Regarding this thesis administrative processes, universities need to map the

business process to identify value-added activities and utilize information technology to reduce administrative process time.

Six Sigma in academic administration

Six Sigma is a quality management methodology focusing data driven, management, on variation reduction and elimination, value-added activities, customer focus, financial contribution (Pyzdek & Keller, 2010), can be adopted in education sector in that education sector is also a system that has elements (input, process, and output) that can be measured resulted in quality service level that can be improved.

Six Sigma can be used to identify areas of inefficiency or bottlenecks in the thesis process, map the process of managing thesis projects, reduce waste and increase efficiency, and improve communication between students, administrators, and faculty members involved in the thesis process resulting in a better experience for students and a more successful outcome for the academic program.

University needs to establish clear and consistent standards and procedures for thesis development and evaluation (Rizos et al., 2022). It also needs to invest in the recruitment and development of qualified and experienced thesis supervisors, who can provide adequate guidance and support for students during the thesis development process (Ruiz Penalver et al., 2012).

The lack of clear information and guideline issue can be addressed by applying the Define phase of Six Sigma, which involves defining the problem and setting clear goals and objectives (Pyzdek & Keller, 2010).

The lack of complicated administrative system can be addressed by applying the Measure and Analyze phases of Six Sigma, which involve measuring and analyzing the current process to identify areas for improvement. By analyzing the administrative process for thesis submission and identifying areas for improvement, universities can simplify the administrative system to reduce the number of stages involved in the process the process and reduce errors and delays (Chen, 2019).

Applying Control phase of Six Sigma by providing clear guidelines to reduce confusions and errors in the thesis submission process, providing adequate support, setting realistic deadlines, improving the quality of supervision, and providing support for time and resources to reduce stress and anxiety among students.

Proposed framework: Integrating six sigma and balanced scorecard in improving thesis administrative process

The proposed research framework that incorporates Six Sigma and Balanced Scorecard methodologies is a comprehensive approach to address the administrative issues related to thesis submission in Indonesian universities. The framework depicted in Figure 1 follows a systematic and structured approach that focuses on understanding the root causes of the problems, developing and implementing improvement initiatives, and continuously monitoring and evaluating the results to identify further areas for improvement (Bazkar et al., 2017; Heavey & Murphy, 2012; Holmes et al., 2015).

The Six Sigma methodology is used to identify the root causes of the administrative issues related to thesis submission in Indonesian universities. Six Sigma provides a data-driven approach to problem-solving that involves measuring the current process performance, identifying the sources of variation, and implementing improvement initiatives to reduce the variability and improve process efficiency (Pyzdek & Keller, 2010). The use of Six Sigma allows for a systematic approach to understanding the underlying causes of administrative issues related to thesis submission, which can help to develop targeted improvement initiatives that address the specific

causes of the problems. However, it requires resources (human, financial, equipment, etc.) to apply these efforts. Therefore, balanced scorecard can be used to develop and monitor the overall organization performance measures and the utilization of the resources when six sigma is initiated.

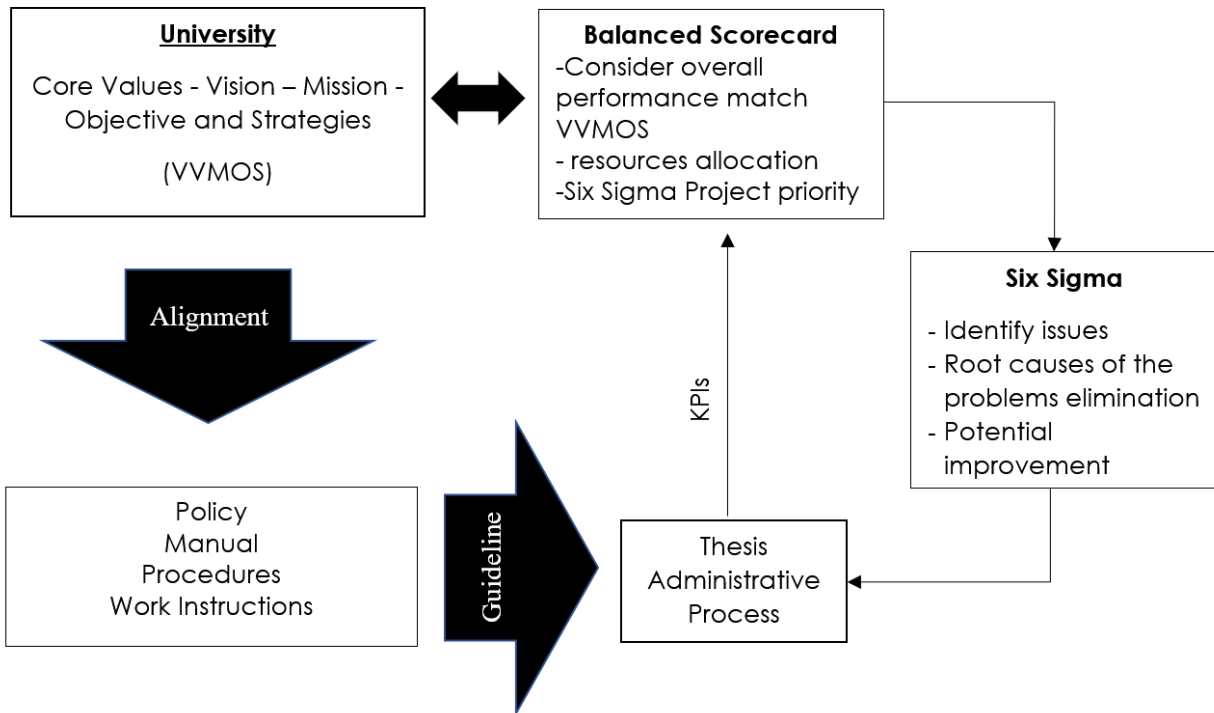


Figure 1. Framework of integrating Six Sigma and Balanced Scorecard to improve Thesis Administration Process

The Balanced Scorecard provides a holistic approach to performance measurement that incorporates financial, customer, internal process, and learning and growth perspectives (Bazrkar et al., 2017; Heavey & Murphy, 2012). By using Balanced Scorecard measures, it is possible to develop a comprehensive view of the administrative process related to thesis submission, monitor the process performance, and allocate resources to support Six Sigma identifies areas for improvement.

The proposed research framework is comprehensive and flexible, allowing for customization to the specific needs of each university. The framework is applicable to any university that is facing administrative issues related to thesis submission. It can assist universities to understand the root causes of the problems, develop targeted improvement initiatives, and continuously monitor and evaluate the process performance. By implementing this research framework, universities can improve the administrative process related to thesis submission, which can lead to increased student satisfaction, improved process efficiency, and ultimately better academic outcomes.

The integration of Six Sigma and the Balanced Scorecard involves aligning the objectives and processes of both methodologies to achieve a comprehensive and holistic approach to organizational improvement.

Six Sigma can be used to identify and improve internal processes that support the organization's strategy. The results of Six Sigma projects can be used to measure progress towards the goals and objectives outlined in the internal process perspective of the Balanced Scorecard.

The organization's strategy and goals, as outlined in the Balanced Scorecard, should drive the selection of Six Sigma projects. Projects should be chosen based on their ability to contribute to the overall strategy and achieve the desired results.

The results of Six Sigma projects can be used to update the internal process and financial perspectives of the Balanced Scorecard. This helps to communicate the impact of Six Sigma to stakeholders and demonstrate the value it is delivering to the organization.

The customer perspective of the Balanced Scorecard provides valuable insights into customer needs and expectations. This information can be used to inform Six Sigma projects and ensure that they are focused on delivering value to the customer.

Overall, the proposed research framework that incorporates Six Sigma and Balanced Scorecard methodologies is a valuable tool for addressing the administrative issues related to thesis submission in Indonesian universities. It provides a comprehensive approach to identifying the root causes of the problems, developing, and implementing targeted improvement initiatives, and continuously monitoring and evaluating the process performance.

3. Conclusion

Thesis administrative process in higher education can be conceptually improved by applying the integration of Six Sigma and Balanced Scorecard. Aligning six sigma and balanced scorecard can support organizations achieve strategic objectives, optimize processes, measure performance, and improve customer satisfaction by integrating data-driven improvement methods with a holistic perspective of key stakeholders and goals. By combining Six Sigma with the Balanced Scorecard, organizations can drive continuous improvement and maximize the value they deliver to their stakeholders. Six Sigma provides a structured approach to process improvement, while the Balanced Scorecard provides a framework for aligning business activities with the organization's strategy and goals. Integrating the two approaches can lead to a more effective and efficient use of resources and a better overall performance for the organization. Organizations can ensure that their improvement efforts are aligned with their strategy, deliver value to all stakeholders, and contribute to the long-term success of the organization.

4. Future Research

Empirical studies can be conducted to verify and improve the conceptual framework. Other management principles and practices can also be considered to enhance the conceptual framework as well as applied practically in different types of business process either than within or out of the organization.

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