

A Study on Six Sigma Project Prioritization and Selection in Healthcare Industry Using KEMIRA-M Method

Fatma Pakdil

Department of Management and Marketing
Eastern Connecticut State University
Willimantic, CT, USA
pakdiltf@easternct.edu

Pelin Toktaş and Gülin Feryal Can

Industrial Engineering Department
Başkent University
Ankara, Turkey
ptoktas@baskent.edu.tr, gfcan@baskent.edu.tr

Abstract

Six Sigma project prioritization and selection process is multi-faceted in nature. Prioritizing and selecting appropriate Six Sigma projects and allocating appropriate resources accordingly are the two critical success factors in Define-Measure-Analyze-Improve-Control (DMAIC) process. Implementing a systematic Six Sigma project selection method affects the allocation of limited resources aligned with the strategic direction and competitive advantages of the organization. This study develops a methodology using KEMIRA-M method to prioritize and select alternative Six Sigma projects in healthcare organizations. Decision making processes in healthcare industry are affected by a great variety of stakeholders and market dynamics including caregivers and patient expectations, regulations, compliance with regulatory requirements, and the voice of the operational processes. Similarly, Six Sigma project prioritization and selection process in healthcare industry is impacted by multiple goals and objectives, criteria, factors, and stakeholders. In this study, each potential project was ranked based on their performance values of cost and benefit types of criteria. As the first implementation of KEMIRA-M weighting procedure, the criteria weighting procedure of the KEMIRA-M method was developed using two different weighting methods based on ranking. The study reveals that the Six Sigma project prioritized by KEMIRA-M assign the highest ranks to patient satisfaction, revenue enhancement, and sigma level benefit criteria, while resource utilization and process cycle time receive the lowest rank.

Keywords

Six Sigma, Six Sigma Prioritization and Selection, KEMIRA-M, Multi-Criteria Decision-Making, Quality Improvement.

Biographies

Fatma Pakdil is Professor of Management in the Department of Management and Marketing at Eastern Connecticut State University in Willimantic CT, USA. She earned her BS in Econometrics, MBA and Ph.D. in Management from Uludag University, Turkey. She specializes in organization theory, service quality, statistical quality control, total quality management, lean management, Six Sigma, and continuous quality improvement.

Pelin Toktaş is an Assistant Professor in Industrial Engineering Department of Başkent University. She earned B.S. in Statistics from Middle East Technical University, Turkey, Master of Science degree in Industrial Engineering from

Bilkent University, Turkey and PhD in Statistics from Ankara University, Turkey. She has taught courses in probability, statistics, stochastic process, statistical quality control. She is a member of Turkish Statistics Society.

Gülin Feryal Can is currently an Associate Professor in Industrial Engineering Department of Başkent University. She holds a Bachelor of Science degree in Industrial Engineering from Kocaeli University and a Master of Science degree in Production, Management and Marketing from Kocaeli University and PhD in Industrial Engineering from Kocaeli University. She has taught courses in work study, human factors and ergonomics, lean manufacturing and occupational health and safety.