

Abstract

Research Background: The 21st century in the realm of industry brings forth elevated expectations, competition, turbulence, and an unprecedented pace of change along with pervasive disruptions. All of these factors are observed in the course of an economic transformation based on the principles of Sustainable Development, which has profoundly altered the conventional criteria of market success. These factors exert a pivotal influence on the formulation of strategies by manufacturing enterprises striving to achieve a balance between the pursuit of business objectives and the support of social, economic, and environmental goals. The reduction of greenhouse gas emissions, efficient resource utilization, waste reduction, enhancement of safety and working conditions, positive impact on the local community as well as the implementation of environmentally friendly technologies, have become integral components of strategies embraced by enterprises aspiring to attain remarkable success and outcomes beyond the ordinary. Apart from investments in technology, modern management models also play a significant role in transformation, aiding the attainment of operational excellence across domains of enterprise activity intertwined with the Sustainable Development Goals.

Methods: This dissertation encompassed a literature review with a systematic survey that highlighted research, cognitive, and application gaps in the realm of operational excellence, its relationship with the concept of Sustainable Development, and methods for evaluating its level. To address these gaps, the author conducted surveys and employed the Delphi method to gather expert opinions. The research findings underwent statistical analysis using Statistica and Minitab software.

Results: Through the conducted research, the author addressed the identified cognitive, research, and application gaps by positively verifying hypotheses, developing an operational excellence definition, and formulating a quantitative method for assessing operational excellence levels that support the incorporation of Sustainable Development goals. The outcomes of the conducted surveys and statistical analyses confirmed the research hypotheses, and the conclusions contributed to the development of a quantitative method for evaluating operational excellence levels that support the integration of Sustainable Development goals within a manufacturing company.

Conclusions: The literature review and survey research conducted in this dissertation enabled the author to affirm three auxiliary hypotheses:

- Methodical management positively influences operational excellence.
- Methodical management positively influences the absorption of Sustainable Development goals.
- Operational excellence positively influences the absorption of Sustainable Development goals.

As a result, the main research hypothesis was also positively confirmed. It was established that an increase in operational excellence levels within a manufacturing enterprise leads to an enhanced adoption of Sustainable Development Goals.