



Literature Analysis and Future Research Framework in Improvement and Substitutes Strategies

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Abstract

The aim of this paper is to examine improvement strategy using 4 approaches which categorized as “substitutes for strategy” in operations strategy and to propose a framework for future research. This paper use descriptive approach to examine peer-reviewed articles that selected for analysis purpose. The analysis revealed that the majority of previous studies always used the principle of continuous improvement in 3 operating concepts, namely TQM, Lean, and Six Sigma and the use of the breakthrough improvement strategy in the concept of Business Process Reengineering. Therefore, this study proposes a future research framework that related to operational management concepts but uses the opposite improvement strategy approach. This article provides a future research framework that can be used as a basis for other researchers in the future to examine TQM, Six Sigma, Lean, and BPR from different perspectives of improvement strategy. Professionals who worked in operations field can use the framework provided in this article to view the company's strategy from a different perspective to gain competitive advantage for their organization. Improvement Strategy, Continuous Improvement, Breakthrough Improvement, Total Quality Management, Lean Operations, Six Sigma, Business Process Reengineering.

Keywords: strategic management, Operational management, improvement, substitute, strategy

A. INTRODUCTION

The science of strategic management and operations management is always evolving, either directly or indirectly. Companies operating in various sectors, both manufacturing and services, are increasingly competing to maximize their organizational performance through the company's operating capabilities. In general, companies seek to achieve this through the chief operating officer (COO) who acts as the party responsible for managing the company's operations side. Slack and Lewis said that the company's COOs will use various operating strategies as methods to achieve their goals, although sometimes these executives do not understand the meaning of the operations strategy itself (Slack and Lewis, 2015).

Another reason for implementing operating strategies within the company is the encouragement of two factors, namely technological factors related to the manufacturing approach and technology in the manufacture of a product and market factors related to increasing product capabilities that are useful for attracting consumers (Fiorentino, 2016). From the service industry perspective, Matthias and Brown argue that the purpose of the operations strategy is to expand the concept of value and service delivery of an organization (Matthias and Brown, 2016). This relates to the main objective of the operating strategy, namely to align market requirements and company operational resources.

Theoretically, there is no strategy that is truly a strategy of an organization's operations strategy but operations management approaches that are used as a substitute in achieving operations strategy. These strategies are generally used to provide increased performance to the organization, both radical improvement, and continuous

improvement. By using these approaches, is by the opinion that operating strategy always refers to the policies and plans used by the company to achieve its strategic goals (Kumar et al., 2020). This study aims to review the literature related to the four approaches used as substitutes in the application of operations strategy as well as a framework for further research that can be developed on the improvement strategy of this topic. The 4 (four) approaches that will be reviewed in this article are 1) Total Quality Management, 2) Lean Operations, 3) Business Process Reengineering, and 4) Six Sigma.

B. LITERATURE REVIEW

1. Total Quality Management (TQM)

Total Quality Management was one of the popular approaches in the 1980s-1990s, even though the TQM concept became the basis for improving and managing processes and operations of activity within the company (Slack and Michael, 2015). This is by the opinion of Wurjaningrum who said that until now, the total quality management (TQM) method is considered one of the most compatible tools to help companies compete through the basic concept of continuous improvement (Wurjaningrum and Reynanda, 2012).

The definition of TQM also varies greatly over time, one of which is Tortorella et al. (2019) which argues that TQM is a strategic approach that maximizes organizational performance through a series of socio-cultural factors and technical factors within the organization. Then, other researchers argue that total quality management is related to company planning which contains the company's vision and mission along with its policies and strategies in achieving strategic goals related to the quality produced (Abbas, 2020). Therefore, Slack and Lewis (2015) summarize some of the important elements in Total Quality Management related to the main philosophy of TQM itself, namely:

- (a) TQM must be able to meet the needs and expectations of consumers
- (b) TQM covers all parts of the organization, including parties in the company's supply chain
- (c) TQM emphasizes that every individual associated with the system is expected to be able to provide positive values in doing their work
- (d) Perform holistic calculations related to quality costs, especially related to prevention costs or prevention costs that will reduce other costs such as appraisal costs, internal failure costs, and external failure costs.
- (e) Using the principle of being proactive rather than reactive in designing a product
- (f) Conducting system development related to process improvement.

Previous researchers such as Abbas (2020) explained that there are 6 dimensions contained in total quality management. This dimension is based on The American Malcolm Baldrige National Quality Award (MBNQA) model, namely leadership, strategic planning, customer focus, process management, human resource management, information, and analysis. Meanwhile, the purpose of implementing TQM is to increase customer satisfaction through quality products or services using minimal company resources (Qasrawi et al., 2017).

2. Lean Operations

Lean Operations is a concept that refers to reducing waste or activities that are inefficient and do not provide added value to the resulting product, this concept is a concept that has been developing for decades. The implementation of lean operations can provide continuous improvement in terms of cost, quality, delivery speed, and other

performance measurement indicators. Lean itself is often associated with other operating concepts, as proposed by Ball and Lunt that lean is a series of 4 aspects, namely just-in-time (JIT), total quality management (TQM), total productive maintenance (TPM), and human resources management (HRM) (Ball and Lunt, 2020). Meanwhile, according to Slack and Lewis (2015), lean operations have 5 main elements, namely:

- (1) Lean focuses on timeliness based on consumer demand
- (2) The concept of lean operations emphasizes synchronizing the flow of materials and information along the supply chain
- (3) Like TQM, lean also has a close relationship with individuals who work on the system, employees are expected to have a mindset and behavior that is oriented towards improving performance.
- (4) The most important element in lean operations, namely eliminating wastes which are categorized into Transportation, Inventory, Motion, Waiting, Overproduction, Overprocessing, and Defects
- (5) Lean can mean a decrease in the level of utilization of production capacity.

Lean implementation can not only improve company performance, Balayutham et al. (2017) said that the implementation of lean operations can have an impact on reducing pollution in the production process. Meanwhile, when viewed from the size of companies that implement lean operations, the majority are only large companies that can implement lean because they already can implement it in full, this is in contrast to small and medium enterprises (SMEs) which have limitations to apply the principles lean operations due to limited resources, knowledge, and costs (Shashi et al., 2019).

There are differences of opinion in the definition of lean due to the development of the lean concept over time, considering that lean is a concept that originated from the Toyota Production System (TPS) approach which was discovered after the second world war which at that time focused on the concept of JIT and continuous improvement (Bhattacharya et al. al., 2019). One of the evidence of the development of research related to the lean concept is shown by the existence of many studies examining the relationship of lean with current concepts such as the environment and sustainability as conducted by Piercy and Rich (2015) concluding that there is a relationship between lean operations and sustainable operations.

3. Business Process Reengineering (BPR)

BPR is a concept put forward by Michael Hammer in the 1990s, this concept can be said as a fusion of various existing operations management concepts such as lean, network management, to process flow charts (Slack and Lewis, 2015). There are several explanations regarding the definition and explanation regarding business process reengineering. Nkurunziza et al. (2019) explain differences of opinion about BPR, the first explains that BPR is a concept of innovation in the process and redesign of the process to achieve a performance improvement, while another opinion defines BPR as a radical step by using processes and socio-technical.

Business process reengineering is essentially intended to improve organizational performance through substantial changes to the organization's business processes, besides that BPR is considered to be able to help control and can provide improvements to other aspects that are not related to operating functions such as customer service and marketing (Fasna and Gunatilake, 2007). 2020). This shows that many things can be gained from the implementation of business process reengineering, this is because BPR

analyzes and pays special attention to the workflow and processes that exist in an organization.

Although there are many positive impacts from the implementation of business process reengineering in an organization, in reality, the implementation of BPR can be said to be quite difficult to do. Research conducted by Habib shows that 70% of BPR projects fail to be implemented due to a lack of methodology in their implementation (Fasna and Gunatilake, 2019). This failure can also occur because BPR has quite complex dimensions, especially related to the synchronization of technology with work processes and their workers. The dimensions that exist in business process reengineering such as Process, Technology, People, Communication, and Structure (Grant, 2016). These dimensions can become an obstacle in the implementation of business process reengineering in small and medium industries or Small and Medium Enterprises (SMEs), especially in developing countries where the failure rate is getting higher all the time. Whereas BPR can be the key to success for small and medium industries in developing their business performance.

4. Six Sigma

Six Sigma is an approach that was initiated by one of Motorola's engineers, namely Bill Smith in the 1980s. Six Sigma is a method that focuses on quality to achieve customer satisfaction. Six Sigma is also a strategic approach that can be a competitive advantage in the long term for companies that implement it, so this concept is widely applied to all aspects of the company with an emphasis on eliminating defects in the production process (Hudnurkar et al., 2019).

Six Sigma has 2 main key steps, namely DMAIC (define, measure, analyze, improve, and control) and DFSS (Design for Six Sigma). DMAIC is Six Sigma steps in problem-solving and process improvement, while DFSS refers to the methodology in product design to meet Six Sigma quality standards (Siddiqui et al., 2016).

Like other strategies, the implementation of Six Sigma requires commitment from all levels of management, because many organizations fail to reach their maximum potential in the implementation of Six Sigma due to the ineffectiveness of the Six Sigma adaptation process in the organization (Sunder, 2015). Then it will be a challenge for the implementation of Six Sigma as an effort in improvement strategy, especially in small and medium industries in developing countries where the top management has little knowledge about Six Sigma.

5. Improvement Strategy

Improvement strategy is an improvement and development in the company's operating factors that aim to increase the contribution of the operating strategy to achieve a competitive advantage in the long term. Improvement in the organization can be divided into 2, namely continuous improvement and breakthrough improvement. Continuous improvement is an operational improvement to improve existing processes and resources, while breakthrough improvement is a strategic improvement because it requires innovation in the management of company processes and resources and has a greater risk (Slack and Lewis, 2015). Continuous improvement is often likened to an extension of operations management concepts such as TQM, Lean, and Six Sigma because the three approaches also focus on continuous improvement (Sraun and Singh, 2017).

Both types of improvement are related to the approach the organization uses to its processes and resources. There is an increase resulting from the process of exploitation

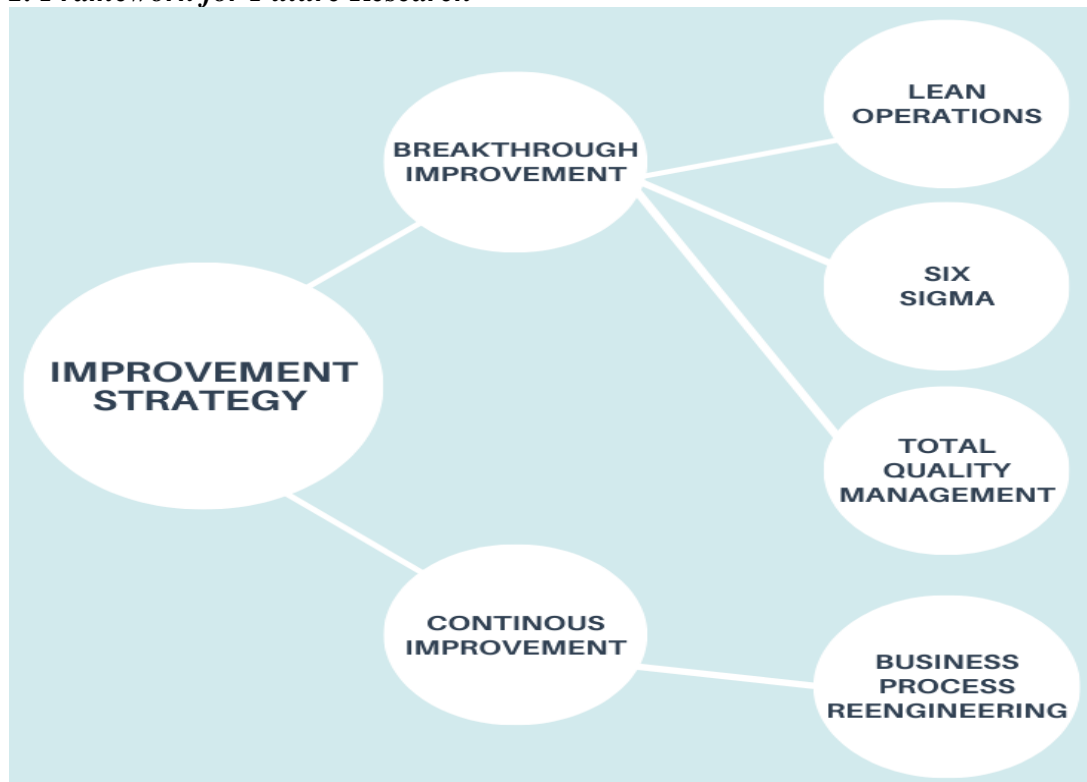
and exploration. Exploitation is an activity to improve processes (and products) that already exist in a company. The focus of exploitation is on creating efficiencies rather than radically changing resources or processes. The emphasis is on tight control of process improvement, standardization process, clear organizational structure, and organizational stability. This is in contrast to the exploration of new possibilities. It's about finding and recognizing new mindsets and ways of doing things. Exploration involves experimentation, taking greater risks, and requires simulation of possible consequences, flexibility, and innovation.

C. RESEARCH METHODS

This article uses a descriptive approach to examine the previous literature sourced from the publishers of scientific articles Emerald and Elsevier as has been done in the previous section. By descriptively reviewing the previous literature related to the topic of this article, namely: Total Quality Management, Lean Operations, Business Process Reengineering, Six Sigma, and Improvement Strategy to find ideas and gaps that are useful for making further research frameworks in the future. The research framework for further research will be made based on the theories of substitution of strategy on operations strategy and its benefits in improving operations in a company or organization.

D. RESULT AND DISCUSSION

1. Framework for Future Research



Gambar 1. *Future Research Framework*

From the literature reviewed, it can be seen that from the 4 existing strategies, 3 strategies, namely Total Quality Management, Lean Operations, and Six Sigma are concepts based on continuous improvement where it is part of an improvement strategy with characteristics of lower risk and is carried out in stages and the measure of success is

measured using quality, speed of cost, to flexibility. Therefore, the proposed further research framework is to further research and analyze the three strategic concepts but use a different approach, namely the breakthrough improvement approach, which is one of the strategies for radical improvement in the operating process of an organization. While the Business Process re-engineering strategy which has radical characteristics is expected to be further investigated for its implementation with the aim of continuous improvement or the opposite of the previous 3 concepts. With further research, it is hoped that there will be a new point of view in looking at existing concepts from the approach side in the improvement strategy.

E. CONCLUSION

Reviewing articles sourced from international journals published in the last 5 years, it can be concluded that most of the previous researchers have always viewed the 3 approaches to operations strategy (TQM, Six Sigma, and Lean Operations) using the basic principle, namely continuous improvement. continuous improvement and the BPR approach uses the breakthrough improvement principle due to the radical characteristics of BPR. Both types of improvement are part of an improvement strategy that has different characteristics from one another. Therefore, this article proposes a research framework using an improvement strategy approach which is the opposite of the principles used by the four operating concepts.

This article provides a future research framework that can be an idea or basis for other researchers in the future to research TQM, Six Sigma, Lean, and BPR from different perspectives according to the research framework that has been proposed, and this article is also expected to be an additional reference. for other academics who are conducting research on similar topics or with different topics.

Operational staff, operational managers to the Chief Operating Officer (COO) can use the framework in this article to see the company's strategy from a different perspective because if the operating concepts can be implemented with different improvement approaches, it will produce a competitive advantage. new to the company.

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