

Identifying Indicators for Implementing Service Operation Management in Small and Medium-Sized Enterprises (SMES): A Systematic Literature Review

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Abstract

Service Operations Management (SOM) is a primary area of concentration within the company's operational management. SOM is a comprehensive operational activity that encompasses all organizational actions from planning to control, with the goal of enhancing the company's performance in attaining customer satisfaction. Service Operation Management is a method that involves controlling several areas of service providers, including process, resource, and technology management. Its main goal is to deliver high-quality services to clients. Implementing Service Operation Management in the operations of a Small and Medium-Sized Enterprises (SMEs) is crucial for ensuring optimal company performance. Hence, the objective of this study is to identify the key performance metrics of implementing SOM in a company, with the intention of applying them to small and medium-sized enterprises (SMEs). This study employed a systematic literature review methodology to analyse 35 publications retrieved from the Scopus database. The purpose was to gather information on indicators related to the application of SOM. The study's findings will include metrics that measure the effectiveness of applying Service Operation Management in small and medium-sized enterprises (SMEs). The indicators and metrics found in this study are innovation, quality, financial, and external factors.

Keywords: Service Operation Management, Small and Medium-Sized Enterprises, Systematic Literature Review

Introduction

Within a corporation, there are multiple factors that impact the overall effectiveness of the organization. Operational activities are a crucial component of any organization. The presence

of operational activities within the corporation facilitates the achievement of company objectives, as these activities are vital in effectively communicating crucial information to all members of the organization. In addition, the presence of operational activities within the organization facilitates the enhancement of communication skills, mitigates employee isolation, and boosts team performance (Černikovaitė & Karazijienė, 2023). Therefore, it is important for a company to implement good operations in order to increase the effectiveness of the management functions of planning, organizing, and controlling operational processes. Effective operational activities will also help the company in handling the unstable external environment (Diegtiar, Bezuhlyi, Tararuyev, Suslova, & Romanchenko, 2021).

Operational approaches differ. We employ SOM, lean manufacturing, TQM, and agile operations. Studying Service Operation Management. Service Operation Management is a multifaceted competitive service strategy. SOM helps the firm. Companies that use SOM improve operations and customer service. SOM improves service quality, increasing customer satisfaction and loyalty. The benefits justify a company prioritising SOM in its operations (Mohara, Abdullah, & Ho, 2016). SOM is used in CRM, SCM, big data analysis, and other business systems.

Using Service Operation Management has many benefits. This application is expected to be used by SMEs and other businesses. Service Operation Management can be used in big data analysis and digitization in SMEs. Big data analysis, such as in supply chain management, improves SME decision-making (Azevedo & Reis, 2019). In addition, SMEs require digital innovation to enhance business success (Łobacz & Roman, 2022). Service operation management research in SMEs is scarce, making this study valuable. Scopus found research that supported this study's proposal.

The literature on Service Operation Management in SMEs is significant but has gaps and conflicting findings. SMEs are expected to gain from SOM, however there is no consensus on the optimum KPIs and measures to assess its efficacy. The research discusses SOM's potential benefits in SMEs, including as enhanced decision-making through massive dataset analysis and digital innovation. However, empirical data on how SOM influences SME innovation, quality, financial outcomes, and external factors is lacking. To fill these gaps, this article investigates the important indicators and metrics that appropriately measure Self-Organizing Maps in SMEs. Data is analysed and combined to better understand how SOM affects SMEs. The end goal is to improve SOM deployment assessment frameworks in this setting.

Furthermore, small and medium-sized enterprises (SMEs) offer a more clearly defined area for additional investigation. The inclusion of SMEs in this study will enhance the research's focus and yield optimal outcomes. The number of small and medium-sized enterprises (SMEs) in Indonesia varies annually. The discovered data reveals that the total count of Small and Medium Enterprises (SMEs) in Indonesia for the year 2021 is at 206,605, and it is projected to exhibit a steady growth in the future (Badan Pusat Statistik, n.d). Given the issues outlined in the preceding section, a problem might be formulated as follows: how can the success of implementing Service Operation Management in a corporation be measured.

Literature Review**A. *Operation Management***

Management is a process of getting things done efficiently and effectively with or through others (Robbins, DeCenzo, & Woods, 2018). Management can also be interpreted as the process of planning, organizing, supervising, and directing the efforts of organizational actors and the use of resources in the organization in order to achieve predetermined organizational goals (Wijayanto, 2012). In a management, there are also several other parts such as marketing, finance, human resources, and operations.

Operational management is one of the important parts of an organization. Operations management is the activity of managing resources that create and deliver services and products. Operational management has an important role in an organization. With a good operational system, it will have a positive impact on the performance of the organization. In an organization, all parts in it are related to company operations, where each part has an operations role and must understand well the principles of operational management (Slack, Brandon-Jones, & Johnston, 2013). Operations management has many parts to it. Some things that are also included in operational management are capacity management, supply chain management, inventory management, risk management, and others.

B. *Service Operations Management*

The focus on Service Operation Management consists of planning, implementing, and controlling the company's operations and other activities related to the delivery of services to customers. According to (Fitzsimmons & Fitzsimmons, 2011), Service Operation Management is an approach used in managing aspects of service providers such as process, resource, and technology management aimed at providing high-quality services to customers. Service Operation Management can also be interpreted as operational activities that include all activities in the organization from planning to control that aims to improve company performance in achieving customer satisfaction (Jabid et al., 2020).

Service Operation Management has various benefits both for the organization, employees, society (customers), and the environment (Johnston, Clark, & Shulver, 2012). A well-executed Service Operations Management (SOM) strategy ensures customer satisfaction and fosters a sense of contentment, hence generating value for customers (Trimble et al., 2019). Furthermore, the SOM element might serve as a criterion for clients when selecting services that align with their individual perspectives. Effective implementation of SOM by the organization will also result in favorable effects on employees. Customers will be more accessible as a result of their satisfaction with the organization's service and experience. When operations are executed effectively and yield desired outcomes, the organization will encounter fewer issues that hinder employee effectiveness in problem-solving. Moreover, organizations can reap several advantages from SOM, such as generating positive word-of-mouth from contented customers, leading to an expansion in customer base (Trimble et al., 2019). Additionally, SOM can help in minimizing operational expenses, boosting revenue or profit, leveraging organizational resources as a competitive edge, enhancing the reputation and brand image of the organization, and fostering the development of essential skills and competencies for future growth (Demeester et al., 2014). Service Operation Management not only affects the individuals directly involved, but it also provides numerous advantages for the national economy. System-on-a-chip

(SOM) has the potential to enhance the country's Gross Domestic Product (GDP) and generate employment opportunities for the local community. Furthermore, SOM holds significance not only for service firms but also becomes highly advantageous for non-service organizations.

C. Small and Medium-sized Enterprises (SMEs)

SMEs are one of the main pillars of economic growth for every developing country including Indonesia. This is because SMEs have made a significant contribution to the development of the country through good resource utilization (Mitariyani, Yasa, Giantari, & Setiawan, 2023). According to the Regulation of the Minister of Cooperatives and Small and Medium Enterprises of the Republic of Indonesia Number 3 of 2021, there are different definitions of small and medium enterprises. Small Business is a productive economic business that stands alone established by individuals or business entities and is not a subsidiary or branch of a company owned, controlled, or become part either directly or indirectly of a medium or large enterprise. Then medium enterprises are productive economic businesses that stand alone established by individuals and business entities and are not subsidiaries or branches of companies owned, controlled, or become part either directly or indirectly with small businesses or large businesses (Kementerian Koperasi dan UKM, 2021). Another concept of SMEs is a business that has a total of less than 500 employees with advanced criteria where small businesses (10-99 employees) and medium enterprises (100-499 employees). In addition, an SME is also determined by several quantitative criteria, namely the number of employees in the business, the amount of annual turnover volume, total assets in the company's balance sheet, and the degree of company independence or ownership of it (SAVLOVSCHI & ROBU, 2011).

D. Systematic Literature Review

Systematic Literature Review (SLR) is a systematic research method that aims to identify, evaluate, and synthesize relevant literature in a particular knowledge domain. One of the differences between systematic literature review and traditional literature review is the identification stage of the research, where SLR is more structured, replicable, and has a transparent process while traditional literature review tends to go through a subjective process (Kraus, Breier, & Dasí-Rodríguez, 2020).

Apart from that, in SLR there are several attributes that are expected from SLR, namely comprehensive, transparent and structured. Comprehensive, namely that the SLR carried out must cover all relevant research items. Transparent, namely making the sample selection process transparent, refers to disclosing the final review sample and the methodological steps taken to arrive at this sample. Lastly, structured is a review that is carried out in an orderly or methodical manner rather than haphazardly. In addition, article searches should also be structured based on clearly defined research (Hiebl, 2023).

Research Methodology

This study will employ the Systematic Literature Review method. Systematic Literature Review is a result of systematically reviewing multiple research studies (Iden & Eikebrokk, 2013). By utilizing systematic literature review, transparent and explicit references will be available where researchers seek and evaluate studies relevant to a specific topic (Tian, Deng, Zhang, & Salmador, 2013). At the *systematic literature review stage*, there are four main

activities, namely *identification, screening, eligibility, and inclusion*.

Research Question

The first stage in SLR is that the researcher must determine *the research question* that will guide the research. *Research questions* are formed based on five components consisting of *Population, Intervention, Comparison, Outcome, and Context* (PICOC). Here is the PICOC of this study:

Table 1
PICOC

Population	Companies engaged in services
Intervention	Implementation of <i>Service Operation Management</i> in the company
Comparison	Implementation of operational management in the company
Outcomes	Indicators of the success of implementing <i>Service Operation Management</i> in the company
Context	<i>Literature review</i>

Based on the data above, it can be concluded that the *research questions* in this study are:

RQ: How is *service operations management* implemented in SMEs and what indicators make the implementation successful?

A. The Search Process

After determining the *research question*, the next stage is to determine the search terms that will be used to find articles related to this research. The following is *the search process* of this study:

- 1) The database to be used is Scopus
- 2) *The search string* of this study are "service" OR "utility" AND "operation" OR "enterprise" OR "performance" OR "procedure" AND "SMEs" AND "implementation" OR "application" OR "employment" OR "utilization"
- 3) Using the *keywords* above, 1,133 results were found on Scopus

B. Selection Criteria

After *searching for* articles based on the *search terms* mentioned, the *next* step is to select the collected articles. Some of the article selection criteria that will be used are as follows. After screening based on the criteria above, 35 suitable articles were obtained. The following is an overview of the article screening process for SLR.

Table 2
Inclusion Criteria

Criterion	Inclusion	Reason
Year	2013-2023	To ensure the articles used are articles that are still relevant to date and the information provided is <i>up-to-date</i>
Language	English	Use a language understood by the author
Publication Phase	Final publication (<i>full text-article</i>)	So that the publications used are more optimal and perfect and provide more complete information
Subject Area	Business, management and accounting	Topics in accordance with the problems to be discussed in the research
Scope of Discussion	Articles that discuss <i>Service Operation Management</i> or that are still related to the topic	So that the results of the article can answer the problem formulation and make a scientific contribution to research

Thus, the final results of the *systematic literature review* will contain indicators related to the application of SOM in the company. these results will be used to form a *framework* that will be used in analyzing the application of SOM in SMEs.

Results and Discussions

Following the completion of a search process in the preceding stage, a total of 35 articles were discovered that met the preset criteria. The following are the identities of the 35 articles utilized. Based on Table 3, the publications examined in this study employ three distinct research methods: quantitative, qualitative, and a combination of both. According to the conducted research, the majority of the papers considered in the study consist of 24 articles that employ quantitative approaches.

According to the Figure 1, there has been an increase in the number of published articles in the past five years, namely from 2018 to 2022. Furthermore, it suggests that there is a growing need for research on this area in the coming years.

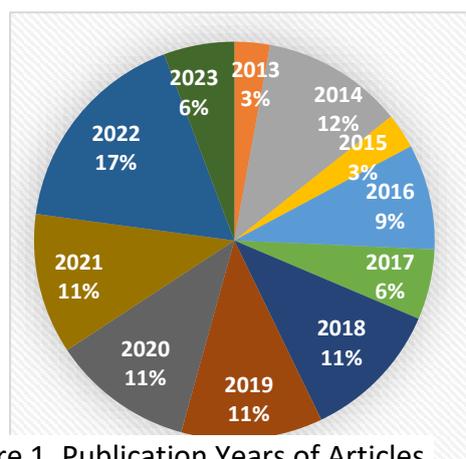


Figure 1. Publication Years of Articles

Following the completion of a descriptive analysis, the subsequent task is to conduct a content analysis. Content analysis entails the collection of data from articles specifically selected to address pre-determined research inquiries, particularly about the indicators of success in the implementation of service operation management. The table below displays

the information gathered from each article that addresses a specific research issue.

The SLR Result shows numerous categories of service operation management success. Innovation is the creation of new ideas, techniques, or technology. (KBBI, 2008). Innovation is divided into technology and service categories. Enterprises introduce new and sophisticated ICT ideas and practices through technological innovation. Additionally, service innovation refers to commercial innovations that improve service quality.

Quality management methods are implemented by the organisation next. Business excellence is monitored and controlled by quality management, which includes services, performance, procedures, and more (Nilhuda, Afriansyah, & Rusdinal, 2019). Next, the organization's business model outlines its business process structure. The last is HR or employee quality, such as debriefing, training, etc.

Third is the organization's financial position, which includes risk management and financial capability. The organization's financial capability includes its ability to invest, access to financial resources, and financial management. Additionally, risk management involves applying a system to the organisation for risk detection and mitigation.

Finally, external factors including stakeholder collaboration, market conditions (competitors), and customer happiness are considered. An organisation relies on external support from many parties to improve performance, therefore stakeholder collaboration is essential. Collaboration with varied stakeholders typically motivates enterprises to develop and expand their networks. Company market conditions also affect service operation management success. Market issues like competition may affect the company directly or indirectly.

Table 3
Article Identity

Journal Name	Method		
	Qualitative	Quantitative	Both
Advances in Science, Technology and Engineering Systems		1	
Argumenta Oeconomica	1		
Australasian Journal of Information Systems	1		
Autex Research Journal		1	
Bottom Line	1		
Business and Economic Horizons		1	
European Journal of Work and Organizational Psychology	1		
Heritage and Sustainable Development		1	
IIMB Management Review		1	
International Journal of Operations and Production Management	1		
International Journal of Process Management and Benchmarking		1	
International Journal of Productivity and Performance Management	1		
International Journal of Quality and Reliability Management		1	
Journal of Asian Finance, Economics and Business	1	1	
Journal of Business Economics and Management		2	
Journal of Business Research		1	
Journal of Competitiveness		1	
Journal of Manufacturing Technology Management	1		1
Journal of Research in Marketing and Entrepreneurship		1	
Journal of Risk and Financial Management		1	
Journal of Small Business Management		1	
Journal of Tourism and Services		1	
Management Decision	1		
Management Science Letters		2	
Operations Research Perspectives		1	
Perspectives in Law, Business and Innovation	1		
Production Engineering Archives		1	
South African Journal of Business Management		1	
Sustainable Futures		1	
TQM Journal		1	
Uncertain Supply Chain Management		1	
TOTAL	10	24	1

Table 4
References of Indicators

Success Indicators	References
1. Innovation (A)	(Venkatachalam, Fieft, Rosemann, & Mathews, 2014); (Aidoo, 2019); (Kumar, Singh, & Shankar, 2015); (LESTARI, LEON, WIDYASTUTI, BRABO, & PUTRA, 2020); (Potluri & Vajjhala, 2018); (DINCĂ, DIMA, & ROZSA, 2019); (Gao & Yu, 2023); (Singh, Kumar, & Singh, 2018); (TIMMER, 2019); (KAPLER, 2021); (Velmurugan, Saravanasankar, Venkumar, Sudhakarapandian, & Bona, 2022)
1.1 Technology Innovation (A1)	(Sukmana, Wardhani, Khairunnisa, Lee, & Wati, 2019); (Eze & Chinedu-Eze, 2018);
1.2 Service Innovation (A2)	(Grudowski, 2016); (Justino, Tengeh, & Twum-Darko, 2022); (Putra, Mendra, & Novitasari, 2023)

Success Indicators	References
	(Nedra, Néjib, Boubaker, & Morched, 2022); (Dorożyński, Kuna-Marszałek, & Urbaniak, 2014); (Weerasinghe, Jayawardane, & Ramlogan, 2014); (Liu, Fang, Park, & Chen, 2021); (Shokri, Oglethorpe, & Nabhani, 2014); (Mikołajczak & Pawlak, 2017); (Metzker, Maroušek, Hlawiczka, Jr., & Khan, 2021); (Yasa, et al., 2020); (Mathu & Tlare, 2017)
2. Quality (B)	(Werner, 2021)
2.1 Quality Management (B1)	(Lepisto, Saunila, & Ukko, 2022); (LESTARI, LEON, WIDYASTUTI, BRABO, & PUTRA, 2020); (Biadacz, 2021)
2.2 SMEs Business Model (B2)	(Phraknoi, Busby, & Stevenson, 2022); (Sanna, Minna, & Hannu, 2016); (Lepisto, Saunila, & Ukko, 2022); (Altinay, Madanoglu, Vita, & Huseyin Arasli, 2016); (Singh, Kumar, & Singh, 2018)
2.3 Human Resource Development (B3)	(Eze & Chinedu-Eze, 2018); (Kumar, Singh, & Shankar, 2015); (Weerasinghe, Jayawardane, & Ramlogan, 2014); (LESTARI, LEON, WIDYASTUTI, BRABO, & PUTRA, 2020); (Adrodegari & Saccani, 2020); (Altinay, Madanoglu, Vita, & Huseyin Arasli, 2016); (Gao & Yu, 2023); (Gandhi, Sachdeva, & Gupta, 2018); (Singh, Kumar, & Singh, 2018); (TIMMER, 2019); (Mathu & Tlare, 2017); (Velmurugan, Saravanasankar, Venkumar, Sudhakarapandian, & Bona, 2022)
3. Financial (C)	(Liu, Fang, Park, & Chen, 2021); (Adrodegari & Saccani, 2020); (Putra, Mendra, & Novitasari, 2023)
3.1 Financial capabilities (C1)	(Aidoo, 2019); (Potluri & Vajjhala, 2018); (Mikołajczak & Pawlak, 2017)
3.2 Risk Management (C2)	(Phraknoi, Busby, & Stevenson, 2022); (Kühl, Boursakis, Aktas, & Skipworth, 2022); (Shokri, Oglethorpe, & Nabhani, 2014)
4. External factors (D)	
4.1 Cooperation with the parties concerned (D1)	(Dorożyński, Kuna-Marszałek, & Urbaniak, 2014); (Weerasinghe, Jayawardane, & Ramlogan, 2014); (Shen, Govindan, Borade, Diabat, & Kannan, 2013); (TIMMER, 2019)
4.2 Market conditions (competitors) (D2)	(Dorożyński, Kuna-Marszałek, & Urbaniak, 2014); (Phraknoi, Busby, & Stevenson, 2022); (Weerasinghe, Jayawardane, & Ramlogan, 2014); (Lepisto, Saunila, & Ukko, 2022); (Mikołajczak & Pawlak, 2017); (Justino, Tengeh, & Twum-Darko, 2022)
4.3 Customer Satisfaction (D3)	(Grudowski, 2016); (Kumar, Singh, & Shankar, 2015); (Phraknoi, Busby, & Stevenson, 2022); (Shen, Govindan, Borade, Diabat, & Kannan, 2013); (Metzker, Maroušek, Hlawiczka, Jr., & Khan,

Success Indicators	References
	2021); (Yasa, et al., 2020); (Singh, Kumar, & Singh, 2018); (Biadacz, 2021); (Putra, Mendra, & Novitasari, 2023)

The key indicators for these references can be assessed by quantifying the frequency and magnitude of technological, service, and process innovations inside the organisation. In addition, the effective execution of quality management, the small and medium-sized enterprises (SMEs) business model, and the growth of human resources can act as reliable indicators. Additionally, significant leading indications are the organization's financial capabilities, risk management techniques, and its collaboration with external entities. Furthermore, the organization's capacity to adeptly traverse market situations, react to rivalry, and uphold elevated levels of client pleasure are vital leading indications to take into account.

Subsequently, the forthcoming explanation will delve into the quantity of document types or publishing types originating from each source in the indications. Table 5 provides information that the primary source of data is derived from academic publications. Furthermore, apart from that, there are also sources derived from books and chapters.

Table 5
Number of Papers Divided by Kind of Publication

Indicators	Document Type		Total
	Journal article	Book and chapter	
1. Innovation (A)	10	1	11
1.1 Technology Innovation (A1)	5		5
1.2 Service Innovation (A2)	9		9
2. Quality (B)	1		1
2.1 Quality Management (B1)	3		3
2.2 SMEs Business Model (B2)	5		5
2.3 Human Resource Development (B3)	11	1	12
3. Financial (C)	3		3
3.1 Financial capabilities (C1)	3		3
3.2 Risk Management (C2)	3		3
4. External factors (D)			
4.1 Cooperation with the parties concerned (D1)	3	1	4
4.2 Market conditions (competitors) (D2)	6		6
4.3 Customer Satisfaction (D3)		9	9

Conclusions

Service Operation Management is a comprehensive strategy for effectively managing service operations in a competitive market. Implementing SOM in the organization will result in a competitive advantage and indirectly enhance operational efficiency and effectiveness, leading to improved customer service. By applying Service Operation Management, several advantages can be acquired. It is anticipated that this approach can be extended to different

business sectors, including Small and Medium Enterprises (SMEs). This study aims to examine the factors that contribute to the success of Self-Organizing Maps (SOM) implementation in Small and Medium Enterprises (SMEs) through the utilization of the literature review methodology. The Scopus database was utilized for this investigation. Following the completion of multiple stages of Systematic Literature Review (SLR), a total of 35 pertinent publications were identified and will undergo further analysis.

SLR research found that innovation, quality, financial, and external variables drive SME service operation management adoption. Technology and commercial services innovation are two types of innovation. Quality includes quality management, SME business strategy, and HR development. Finance includes firm finances and risk management. The third factor is external factors including stakeholder participation, market dynamics, and customer satisfaction. This study's structure allows the next researcher to explore Service Operation Management in depth. The framework can be customised to the research topic for best results.

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