

A Comprehensive Definition for ‘Operational Excellence’

Manori P. Kovilage

Sabaragamuwa University of Sri Lanka, Sri Lanka

Saman T.W.S. Yapa

University of Sri Jayewardenepura, Sri Lanka

Champa Hewagamage

University of Sri Jayewardenepura, Sri Lanka

Abstract

The study's objective was to develop a comprehensive definition for operational excellence (OE) while identifying its attributes, most suitable theoretical lens and dimensions. Attributes of OE were collected by evaluating 32 existing definitions of OE and interviewing 30 OE experts. A focus group interview with 15 OE experts was employed to consensus on the critical attributes and tentative dimensions of OE. Content analysis was employed for data analysis. Continuous improvement of sustainable operational performance, deriving sustainable competitive advantages and implementing the operation strategy consistently and reliably were determined as the critical attributes. Based on the identified critical attributes of OE, the Resource-Based Theory (RBT) was recognized as the most applicable theory for explaining OE. Based on the identified theoretical lens and identified critical attributes, the new definition of OE involves, ‘utilization of valuable, rare, costly to imitate and non-substitutable resources & capabilities to execute the operations strategy consistently and reliably as the organization can achieve: a continuous improvement of the sustainable operational performance and sustainable competitive advantages while upholding the satisfaction of employees, customers, suppliers and other important stakeholders.’ Continuous improvement of sustainable operational performance and sustainable competitive advantages were determined as the possible dimensions of OE.

Keywords: *Operational Excellence; Resource-Based Theory; Construct Definition, Operational Performance, Competitive Advantages*

Corresponding Author:

Manori P. Kovilage, Sabaragamuwa University of Sri Lanka, Sri Lanka. E-mail: manori@mgt.sab.ac.lk

Introduction

Currently, the corporate sector is adopting philosophies like organizational/business excellence for delighting the customers while gaining sustainable competitive advantages. The journey of 'organizational excellence' requires adapting more systematic and structured ways for responding to the dynamics of the corporate environment and customer needs (BTOES Insight, 2019). Being operationally excellent is the crucial requirement for achieving organizational/business excellence. Hence, if an organization could be excellent in all its operations, the destination of organizational excellence is smoothly arrived (Govindsamy, 2014). Generally, operational excellence means the "execution of the business strategy more consistently and reliably than the competition, with lower operational risk, lower operating costs, and increased revenues relative to its competitor" (Seifert & Soto, 2013. p.68).

According to McKinsey & Company (2015), operational excellence is achieved through the application of various philosophies, tools and technique like lean, Total Quality Management, Six -Sigma, Just in Time and Process Re-engineering which mainly focus a change (gradual or radical change) of the existing way of doing the tasks in the organization. Reduction of lead time, optimized inventory turns, enhanced organizational performance, and competitive advantages are the key benefits expected by applying these operational excellence-oriented tools and techniques (McKinsey & Company, 2015). Thus, targeting such returns globally, the corporate sector is more enthusiastic about the operational excellence philosophy. Likewise, achieving operational excellence has become a global level, contemporary business trend. Nevertheless, the level of success of corporate efforts for reaching operational excellence frequently fails, and the level of operational excellence in the corporate sector worldwide does not exist at a satisfactory level. Thus, currently, operational excellence has become a trending research area. Even though the researchers in this field show a more eagerness on empirical papers, tiny consideration has been given to the conceptualization and scale development of the construct operational excellence (Found et al., 2018).

Contemporary literature on operational excellence, reveals that on some occasions, the term operational excellence has been defined in plausible phrases, such as 'being world class', 'being the best globally' or 'excellence in everything we do' which are hard to translate into practical actions. Also, it reveals that the construct, operational excellence, has often been poorly and vaguely defined (Aguilera & Ruiz, 2019; Found et al., 2018). Also, it seems that

operational excellence has received many contradictory interpretations by different scholars and practitioners. For example, Russell and Koch (2009) defined that “operational excellence is about attaining the maximum operational efficiency level through performing things better, faster, and cheaper”. Then according to Russell and Koch (2009), the sole focus of operational excellence is to improve the operational efficiency of an organization. While Aguilera and Ruiz (2019) defined that “operational excellence involves the organizational culture of a company, where employees can identify problems and solve them analytically”. It seems that according to Aguilera and Ruiz (2019), operational excellence targets an improved culture where problem-solving nicely happens. According to Seifert and Soto (2013), operational excellence is the execution of the business strategy more consistently and reliably than the competitors, with lesser operational risk, lesser operating costs, and amplified revenues comparative to its competitor. According to Seifert and Soto (2013), operational excellence is employed to derive competitive advantages too.

On some occasions, the term operational excellence has been defined more similar to organizational excellence. For example, 'operational excellence is the constant and deliberate improvement of organizational performance and the conditions of those who work there to pursue operational excellence by design and not by accident'(Operational Excellence Society, 2020). Also, some researchers and practitioners define operational excellence as a state, while some define it as a process and strategy. For example, (1)‘operational excellence is an organizational status “where each and every employee can see the flow of value to the customer and fix that flow before it breaks down’ (Duggan, 2011); (2)‘operational excellence has also been described as a process where the organization or business focuses on the needs of the customers while consistently and continuously improving the current business activities being conducted in the workplace’ (Martin, 2015); (3) ‘operational excellence is defined as the strategy, organizations use to deliver quality, price, ease of purchase and service in such a manner that no other organization in the industry or sector can match’(Wiersema & Treacy, 1993). The other significant issue is the, lack of identification of theoretical domain of the construct operational excellence (Aguilera & Ruiz, 2019). Thus, most of the existing definitions on operational excellence does not represent the theoretical perspectives.

Concerning above dilemmas, research gaps were concluded as: the term OE is still lacking a comprehensive construct definition, the researchers in OE context are still uncertain on the exact theoretical lens & dimensions of the construct,

and researchers face challenging situations in conceptualizing and operationalizing this construct. Correspondently, the main aim of the current study was to develop a comprehensive construct definition for operational excellence while identifying the most critical attributes and suitable theoretical lens of this construct. Consequently, the objectives of the study were formulated: first to identify the critical attributes of OE construct, second to determine the suitable theoretical lens of the construct OE base on the identified attributes, third to develop the new construct definition for OE base on the identified theoretical lens & attributes, and finally to propose the suitable tentative dimensions of operational excellence.

Literature Review

Distinguishing between 'Operational' and 'Organizational'

Distinguishing between these two terms is critical to distinguish between the operational excellence and organizational excellence. Simply the term “organizational” denotes the business structure, and “operational” denotes how things get done within that structure (LaMarco, 2019). When a business organization operates for achieving its goals, it has to perform a large number of different tasks. Those tasks are not performed by the organization's owner himself/herself or a single person. Organizations possess staff members or employees for performing those different tasks. Then organizations need to organize these tasks among the employees, in accomplishing tasks. Organizing the organizational tasks among staff/employees creates organizational structures and charts (LaMarco, 2019). Also, these structures explain the span of control of the organization. Then those structures create the organizations, and it is called the 'organizational'. Within the particular organizational structure, for achieving the organizational goals, the tasks need to be implemented as per the organizational structure defined or organized, and it is called the operational (Milano, 2021).

Organizational Excellence

As Mann, Mohammad and Agustin (2012) emphasized, organizational excellence is about 'developing and strengthening the management systems, processes and operations of the whole organization to continuously improve organizational superior performance and create a better value for stakeholders. The 'European Foundation for Quality Management (EFQM) Excellence

Model' which is also a protocol to explain the organizational excellence concerns the 'leadership, people, strategy, partnerships, resources, processes, products & services, people result, customer results, society results and business results as the key aspects of operational excellence (EFQM, 2013). Shingo Institute (1988), which offers the Shingo Award on organizational excellence, has introduced ten core principles of organizational excellence: "respect every individual, lead with humility, seek perfection, embrace scientific thinking, focus on process, assure quality at the source, flow & pull value, think systemically, create constancy of purpose and create value for the customer". When analyzing the aspects emphasized by these frameworks/models/awards on organizational excellence, it can be concluded that organizational excellence refers to an attainment which realizes through organization-wide continues superior performance. Thus, the emphasis on organizational/business excellence is much broader than focusing on a single area, function, process or operation of an organization.

Operational Excellence

Generally, operational excellence refers to the "execution of the business strategy more consistently and reliably than the competition, with lower operational risk, lower operating costs, and increased revenues relative to its competitor" (Seifert & Soto, 2013. p.68). Watson (2010) introduced operational excellence as "a critical driver for business success, a key part of the enterprise strategy and the systematic management of the five dimensions: process safety, environment, personal health & safety, reliability and efficiency to achieve world-class performance". Wiersema and Treacy (1993), defined the term operational excellence as a specific strategic approach: to the production and delivery of products & services, which seeks ways to minimize overhead costs, to eliminate intermediate production steps, reduce transaction and other friction costs, and optimize business processes across functional and organizational boundaries to deliver the products or services to customers at competitive prices and with minimal inconvenience. As per this definition (which is a much early definition of operational excellence), operational excellence mainly links with the production & delivery process and primarily focuses only on efficiency in these processes. Nevertheless, modern definitions of operational excellence focus on the continuous improvement of all the operations within an organization, concerning that every operation of the organization is vital to delighting customers and achieving competitive advantages (BTOES Insight, 2019).

Existing Theories on Operational Excellence

The Scientific Management Theory

The Scientific Management Theory was invented by Fredrick Winslow Taylor (1890-1940), and it is often called "Taylorism". The focus of the Scientific Management Theory is to increase the production within an organization by increasing the productivity of the individuals. Taylor always intended one best way to accomplish a task of an organization. Also, Taylor's focus was on repetitive, routine tasks - rather than dynamic, problem-solving activities. Thus, this theory proposes to make specifications for each regular task of the organization. The theory assumed that if the tasks could be standardized, they could be made more efficient. Also, the theory proposed an awarding and punishment mechanism to improve the efficiency of individuals. Employees with improved efficiency are rewarded, and employees who cannot reach the targeted efficiency are punished (Wren & Bedeian, 2009).

The Transformational Leadership Theory

Many researchers who focused on the antecedents of operational excellence have utilized the Transformation Leadership Theory for explaining the link between leadership and operational excellence. The Transformational Leadership Theory emphasizes how leaders make valued and constructive change in their followers. As per the theory, transformational leaders can inspire followers toward action and change. James MacGregor Burns (1978) first introduced the concepts of transformational leadership in his studies on political leaders. Currently, this concept is widely used in organizational studies also. The ideal target of transformational leadership is to create a valuable and positive change in the followers to develop followers into the leaders' level or beyond. Transformational leadership is possible to enhance the motivation, morale and performance of followers through connecting individual followers' self to the mission of the organization; being a role model for followers that inspires them; challenging followers to take greater ownership for their work, and understanding the strengths and weaknesses of followers (Bass, 1998).

The Resource-Based Theory

The Resource-Based Theory (RBT), an extensively accepted theory of competitive advantages and superior firm performance, primarily explains the interaction between a company's internal resources/operational capabilities and competitive advantages (Spanos & Lioukas, 2001). The RBT emerged in the

1980s and 1990s, with the critical contributions of Wernerfelt (1984) (“The Resource-Based View of the Firm”), Prahalad and Hamel (1990) (“The Core Competence of The Corporation”) and Barney, (1991) (“Firm resources and sustained competitive advantage”). The theory grounded on two major assumptions of heterogeneous and immobility of organizational resources. The assumption of heterogeneous means that skills, capabilities and other resources which an organization possesses differ from one organization to another. The second assumption of RBT emphasizes that organizations internal resources are immobile and do not transfer from one organization to another, in short-run. Thus, it assumes that competitors cannot imitate the companies’ resources & strategies in the short run. Barney (1991), argued that heterogeneous and immobile resources alone is not enough to achieve competitive advantage and introduced the VRIN framework (that scrutinizes whether resources are valuable, rare, costly to imitate and non-substitutable), which describes the characteristics that resources should possess in order to enable competitive advantages. According to this model, ‘valuable, rare, imperfectly imitable and non-substitutable resources generate the sustainable competitive advantage.

Methodology

The study followed the qualitative research approach with qualitative research design. Here, as the main data collection methods the researcher employed document reading (research papers, books, web articles), unstructured interviews and focus group interviews. While content analysis and thematic analysis were utilized for data analysis. Then employing moderators, the validity of the new definition was confirmed. Following section explain these research methods with more details.

As the starting point in the definition development process, the researcher required to ascertain the attributes of this construct. The researcher attained this purpose through reading documents like research articles, books and web articles and unstructured interviews. For collecting research articles, online databases like Wiley Online Library, Scopus, EBSCO, Taylor and Francis, Emerald Insight, JSTOR, Web of Science, Science Direct and Directory of Open Access Journals were referred under the key word ‘operational excellence’ and focused time period was from 2005 to 2020. Through document reading, the researcher could collect 32 existing definitions on OE. For unstructured interviews the researcher drew 30 international and national experts on operational excellence, following the purposive sampling technique.

Interviews were conducted online using the 'Zoom' software. The composition of the experts' sample were 10 academics, 7 consultants and 13 top level managers who works for development of operational excellence. Also, out the 30 experts, 13 were from international and 17 were from Sri Lanka. The international experts represented countries: United Kingdom, Australia, Japan, Singapore, Vietnam, USA, India, France, New Zealand, China, Spain, Brazil, Canada.

After the data collection, the researcher employed the content analysis for deriving key themes (through developing open codes and axial codes) of each operational excellence definition. Then, thematic analysis was performed to derive the themes of interview records. Content analysis involves a data analysis method employed to recognize patterns in 'recorded communication' (Saunders et al., 2009). Content analysis can be utilized for any type of written text, no matter of from where the text comes (Sekaran & Bougie, 2010). It means, for conduct the content analysis, data can be collected systematically, using any form of data collection methods (written, oral, or visual): deep interviews, focus group interviews (Golsater et al., 2011), one single written question (Bengtsson et al. 2007), open-ended questionnaire, observations of situations, pictures and films (Krippendorff, 2004) (as cited in Bengtsson, 2016). Content analysis may be in quantitative or qualitative type. In these both types of content analysis, the researcher categorizes or develop codes, themes, and concepts within the text (first identify the codes, then themes and concepts are developed through categorizing/grouping the codes). Thematic analysis is a qualitative data analysis technique that mainly employed for data which collected through interviews and focus group interviews. It identifies the patterns of data sets to derive the themes. Here the researcher's subjective experience plays a crucial role (Saunders et al., 2009)

Subsequently, the researchers conducted a focus group interview for evaluating the identified themes and come into a consensus on the critical attributes of operational excellence. The focus group interview consisted of 15-members (5 academics and 10 practitioners on operational excellence in Sri Lankan context). Members for the focus group discussion were drawn purposively (base on expertise), and it was conducted online using the 'Zoom' software. Afterwards, the researcher determined the key attributes of operational excellence and the theoretical lens/domain of the construct operational excellence based on these attributes. Next, the new definition was developed, being in the identified theoretical domain while integrating the identified critical

attributes. Ultimately the validity of the new definition was ensured, employing the qualitative, validity methods. One of the critical techniques of establishing the validity and reliability of qualitative data comprises selecting a skilled moderator. Primarily, employing a moderator will support overcoming the personal bias of the data analysis. Thus, the researcher employed three moderators who are academic experts in the operational excellence field to evaluate the new definition. Ultimately the definition was revised based on the reviews and recommendations of these moderators.

Results and Discussion

Identification of Attributes in the Construct Operational Excellence

Table 1 concisely exhibits 32 definitions on operational excellence which were collected through referring research papers, books and web articles. Also, it summarizes the key themes emphasized in each of these definitions.

Table 1: Operational Excellence Definitions and Theme Identification

	Definition	Source	Key themes
1	‘Operational excellence is defined as the “constant and deliberate improvement of an organization’s performance and the conditions of those who work there to pursue operational excellence by design and not by accident.”	(Operational Excellence Society, 2020)	1.Continuous improvement of operational performance 2.Maintaining better partnerships
2	“Operational excellence is a mindset, philosophy and lifestyle helping organizations to constantly improve their work processes and performing better each time based on past experience and breakthrough ideas. It is fueled by distinct operational enablers and performance drivers: cost, profitability, efficiency, reliability and safety facilitated through a comprehensive system of processes aimed at making a difference in the core business”.	(Yeo, 2019)	1.Continues improvement in operational performance measures
3	‘Operational excellence involves the “organizational culture of a company, where employees have the ability to	(Aguilera & Ruíz, 2019)	1.Employee satisfaction 2.Customer

A COMPREHENSIVE DEFINITION FOR 'OPERATIONAL EXCELLENCE'

	identify problems and solve them analytically.”		satisfaction
4	“Achieving operational excellence requires the successful implementation of a business execution system that effectively and seamlessly integrates the four building blocks: strategy deployment, performance management, process excellence and high-performance work teams”	(Wurtzel, 2019)	1.Focus on the business strategy 2.Integration of resources 3.Improving operational performance
5	“Operational excellence provides tools and a framework to enable for people in the organization to operationalize the change or transformation”	(Carvalho et. al., 2017)	1.Continuous improvement of operational performance measures
6	“Operational excellence is an approach that managers follow to achieve world-class performance level by integrating their firm’s people, processes and tools”.	(Shehadeh et al., 2016a)	1.Integration of resources 2.Competitive advantages (because it targets the world class performance, to receive world class position, organizations need order winning criteria, through order winning criteria competitive advantages can be realized).
7	Operational excellence is achieved through “supreme control of assets concerning probable effects on environment and measures of safety like: reducing energy and material consumption; balancing assets availability and utilization and empowering people for their maximum performance.”	(Owusu & Sarkodie, 2016)	1.Improving operational performance measures 2. Environmental performance
8	“Operational excellence is the continuously pursuit of better performance and effectiveness in all dimension of the organization”.	(Park, 2016)	1. Improving operational performance measures
9	“Operational excellence spreads	(Schmiedel,	1.Improving

	beyond the organization’s shop-floor, incorporating the whole supply chain, optimizing processes between the organization, suppliers and customers.”	vom Brocke & Uhl, 2016)	operational performance 2. Customer satisfaction 3. Better partnerships/ satisfaction of suppliers (suppliers)
10	“Operational excellence is not for perfection but to achieve the superior performance and profits by using a systematic approach which is focusing on people and implement the changes by involving customers, constantly innovating, operation continuous improvement and moving at optimal speed.”	(Park, 2016)	1.Customer satisfaction 2. Continuous improvement of operational performance 3.Employee satisfaction
11	“Operational excellence is a systematic approach to achieve world-class performance in productivity, quality and delivery of services and/or products with the objective to achieve superior results, lead time and to reduce the waste.”	(Susanti, Dachyar and Yadrifi, 2015)	1. Improving operational performance measures (efficiency and effectiveness) 2.Competitive advantages 3.Customer satisfaction 4. Focus on business strategy
12	“An organization’s operating excellence which linked with organizational efficiency & effectiveness is the state of any business organizations that is achieved through the development of the product and service development and distributions through the inception of continuous improvement methodologies for the satisfaction of customers”	(Ojha, 2015)	1. Improving operational performance measures (efficiency, effectiveness) 2.Customer satisfaction
13	“Operational excellence emphasizes on the performance of internal operations of a company where the excellence will prove quality improvement, flexibility	(Susanti, Dachyar & Yadrifi 2015)	1.Improving operational performance (quality, flexibility, delivery,

A COMPREHENSIVE DEFINITION FOR 'OPERATIONAL EXCELLENCE'

	improvement, delivery improvement, productivity improvement, cost and waste reduction”		cost, waste)
14	“Operational excellence has also been described as a process where the organization or business focuses on the needs of the customers while consistently and continuously improving the current business activities being conducted in the workplace.”	(Martin, 2015)	1.Customer satisfaction 2. Continuous improvement of operational performance
15	“Operational excellence is an organizational management system that: increases the competitive edge of the business, profitability through increased efficiencies, maximizes returns from investment in assets, utilizes best practices, develops a competent and empowered work force (including leaders), strives for continuous improvement and quality & customer focused”.	(Govindsamy, 2014)	1.Competitive advantages 2.Customer satisfaction 3. Continuous improvement of operational performance
16	‘Operational excellence is both managing day to day operations with efficiency and foster continuous improvement	(Fok-Yew, 2014)	1. Improving operational performance measures (Efficiency) 2.Continuous improvement of operational performance measures
17	“Operational excellence is not only to improve quality and cost reduction, but also being smart about how to tackle people and use resources and it requires good leadership, solid change management ability, culture of continuous improvement and employees’ empowerment.”	(Fok-Yew, Ahmad & Baharin 2013)	1.Employee satisfaction 2.Continuous improvement of operational performance measures (cost, quality)
18	“Operational Excellence is the execution of the business strategy more consistently and reliably than the	(Seifert & Soto, 2013)	1. Focus on the business strategy 2.Improving

	competitors, with lower operational risk, lower operating costs, and increased revenues relative to its competitor.”		operational performance measures 3.Competitive advantages
19	Operational excellence composes of conditions: “(1) unity of senior leadership in driving excellence, (2) commitment and engagement of every member of the organization, (3) clear, well defined and communicated organizational strategy (4) ongoing process improvement together with self-assessment and (5) the use of information and data analysis”	(Brown, 2013)	1.Employee satisfaction 2.Focus on the strategy 3.Continuous improvement of operational performance measures 4.Scientific decision making
20	‘Operational excellence strategically focusses on maximizing the value for customers through operations with the support of strong leadership, the power of people, the use of industry best practice and the application of value-added technologies.	(Sutton, 2012)	1.Customer satisfaction
21	Operational excellence is supported by “operational practices that focus on right first time – optimization of production processes, high efficiency – productivity, and effectiveness of processes – and customer and market orientation”	(Lu et al., 2011)	1.Improving operational performance measures 2.Customer satisfaction
22	Operational excellence is an organizational status “where each and every employee can see the flow of value to the customer and fix that flow before it breaks down.”	(Duggan, 2011)	1.Employee satisfaction 2.Customer satisfaction
23	“Operational excellence is a management system which focus to increase its competitiveness through world leading operations performance. This is achieved by integrating people, processes and tools. The gain in competitive advantage is through improved cash flow, return on assets	(Ifeanyichukwu, 2010)	1.Competitive advantage 2.Improving operational performance measures

A COMPREHENSIVE DEFINITION FOR 'OPERATIONAL EXCELLENCE'

	and growth”.		
24	Operational excellence is a critical driver for business success and a key part of the enterprise strategy and is defined as the “systematic management of the five dimensions: process safety, environment, personal safety and health, reliability and efficiency to achieve world-class performance”.	(Watson, 2010)	1. Improving operational performance measures 2. Competitive advantages
25	‘Operational excellence is an approach to achieve “world class performance” in productivity, quality and delivery of products and services and empowers organizations to achieve a “continuous improvement culture, service excellence, customer orientation, customer satisfaction and operational efficiency”.	(Cesarotti & Spada, 2009)	1. Improving operational performance measures 2. Competitive advantages
26	“Operational excellence is about reaching the height of operational efficiency through doing things better, faster, and cheaper”.	(Russell & Koch, 2009)	1. Improving operational performance measures
27	“Operational excellence needs the dynamic capability to realize effective and efficient core processes in the value creation chain utilizing technological, cultural and organizational factors in an integrative way and based on the respective strategy.”	(Gleich & Sauter, 2008)	1. Improving operational performance measures (efficiency and effectiveness)
28	‘Operational excellence is a philosophy of “leadership, teamwork and problem solving” resulting in “continuous improvement” throughout the organization by focusing on the needs of the customer, empowering employees and optimizing existing activities in the process’	(Liker, 2004)	1. Continues improvement of operational performance measures (efficiency and effectiveness) 2. Customer satisfaction 3. Employee satisfaction (empowerment of employees)

29	“Operational excellence strategies support business strategies of overall cost leadership through total cost reduction, efficient and reliable supply, and high levels of basic service”	(Morash, 2001)	1.Improving operational performance measures (cost, efficiency, reliability) 2.Competitive advantages (through cost leadership)
30	‘Operational excellence requires “4 Ps: excellent people, who establish excellent partnerships (with suppliers, customers and society) in order to achieve excellent processes (key business processes and management processes) to produce excellent products, which are able to delight the customers.”	(Dahlgaard & Dahlgaard, 1999)	1.Customer satisfaction 2.Employee satisfaction 3.Improving operational performance measures 4. Maintaining better partnerships
31	“A specific strategic approach to the production and delivery of products and services which seeks ways to minimize overhead costs, to eliminate intermediate production steps, reduce transaction and other friction costs, and to optimize business processes across functional and organizational boundaries with the aim of delivering the products or services to customers at competitive prices and with minimal inconvenience”.	(Wiersema & Treacy, 1993)	1.Improving operational performance measures (Cost, Efficiency) 2.Competitive advantages 3.Customer satisfaction
32	‘Operational excellence is defined as the “strategy organizations use to deliver quality, price, ease of purchase and service in such a manner that no other organization in the industry or sector can match.”	(Wiersema & Treacy, 1993)	1.Competitive advantages 2. Improving operational performance measures (efficiency, effectiveness)

Performing content analysis for 32 definitions and interview records of 30 experts on operational excellence (OE), the researchers identified nine themes that comprised in the construct ‘operational excellence’. Table 2 summarizes these key themes mentioning the relevant

researchers/authors/practitioners/professional organizations and number of interviewees who emphasized the particular theme.

Table 2: Summary of Key Themes of Operational Excellence Definitions

No	Key themes	Authors/researchers/practitioners of the definition and interviewees
1	Continuous improvement of operational performance (measures)	-(Yeo, 2019; Fok-Yew, 2014; Liker, 2004; Carvalho et al., 2017; Brown, 2013; Operational Excellence Society, 2020; Fok-Yew et al., 2013; Govindsamy, 2014; Martin, 2015; Park, 2016) -21 Interviewees out of 30 interviewees
2	Environmental performance	-(Owusu & Sarkodie, 2016) -10 Interviewees out of 30 interviewees
3	Improvement of operational performance	-(Morash, 2001; Wiersema & Treacy, 1993; Ojha, 2015; Russell & Koch, 2009; Fok-Yew, 2014; Cesarotti & Spada, 2009; Park, 2016; Lu et al., 2011; Watson, 2010; Seifert & Soto, 2013; Gleich & Sauter, 2008; Dahlgaard & Dahlgaard, 1999; Susanti et al., 2015; Wiersema & Treacy, 1993; Schmiedel et al., 2016; Susanti et al., 2015; Wurtzel, 2019; Owusu & Sarkodie, 2016) -25 Interviewees
4	Integration of resources/capabilities	-(Shehadeh et al., 2016; Wurtzel, 2019) -14 Interviewees
5	Deriving sustainable competitive advantages	-(Morash, 2001; Wiersema & Treacy, 1993; Shehadeh et al., 2016; Ifeanyichukwu, 2010; Cesarotti & Spada, 2009; Watson, 2010; Seifert & Soto, 2013; Susanti et al., 2015; Wiersema & Treacy, 1993; Govindsamy, 2014) -26 Interviewees
6	Focus on the business strategy	-(Seifert & Soto, 2013; Susanti et al., 2015; Brown, 2013; Wurtzel, 2019) -22 Interviewees
7	Employee satisfaction	-(Liker, 2004; Duggan, 2011.; Aguilera & Ruiz, 2019; Dahlgaard & Dahlgaard, 1999; Brown, 2013; Yew et al., 2013; Park, 2016) -12 Interviewees
8	Customer satisfaction	-(Wiersema & Treacy, 1993; Ojha, 2015; Liker, 2004; Lu et al., 2011; Duggan, 2011.; Sutton, 2011; Aguilera & Ruiz, 2019; Dahlgaard & Dahlgaard, 1999; Schmiedel et al., 2016; 2014; Govindsamy, 2014; Martin, 2015; Park, 2016)

		-21 Interviewees
9	Maintaining better partnerships and relationships with key stakeholders	-(Dahlgaard & Dahlgaard, 1999; Susanti et al., 2015; Operational Excellence Society, 2020; Schmiedel et al., 2016) -12 Interviewees

Base on the consensus of experts in focus group interview, these nine themes were further summarized into three themes as follows.

1. Continuous improvement of sustainable operational performance measures
2. Deriving sustainable competitive advantages
3. Implementation of the operation strategy consistently and reliably ensuring the involvement and satisfaction of employees, suppliers, customers and other stakeholders

Finally, the researchers determined these three themes as the key attributes of the construct of OE.

Most Suitable Theory/Theories to Explain the Construct Operational Excellence

Currently, a well-established theory is not available for explaining operational excellence construct Saeed et al. 2020; Wahab et al. 2019a; Boya & Rao 2019; Ahmad et al. 2018; Boya & Rao, 2018). Refers to existing studies on operational excellence (OE) from 2005 to 2020, the Scientific Management Theory (Urlick, Adams & Smith, 2017), Transformational Leadership Theory (Sriyakul et al., 2019; Ahmad et al., 2018; Fok-Yew & Ahmad, 2014) and Resource Based Theory (Wahab, Ismail & Muhayiddin, 2019a; Fok-Yew & Ahmad, 2014) were identified as the frequently used theories in OE research context.

The focus of Scientific Management Theory is to increase the productivity within an organization by increasing the productivity of the individuals. The theory focuses on repetitive, routine tasks - rather than dynamic, problem-solving activities for improving productivity. Even though other researchers utilized the Scientific Management Theory in the operational excellence context, the researchers concluded that the Scientific Management Theory is not sufficient to explain the construct operational excellence. Because it does not focus on the key themes/attributes of the concept of operational excellence like:

continuous improvement of the operational performance, sustainable competitive advantages and satisfaction of the employees, customers and other stakeholders, but its sole focus is to improve efficiency. Nevertheless, being efficient is only one condition for operational excellence.

The Transformational Leadership Theory has been employed by some researchers in the operational excellence research context. The ideal target of transformational leadership is to create a valuable and positive change in the followers with the ultimate goal of developing followers into leaders. Here, the researchers conclude that Transformational Leadership Theory also not sufficient to explain operational excellence since its primary concern is to make a positive change of the followers for improving the performance. Leadership has been identified as an essential antecedent of operational excellence. Thus, this theory is suitable to explain the antecedents of operational excellence but not the attributes of operational excellence.

The Resource-Based Theory is an extensively accepted theory of competitive advantages and superior firm performance, primarily explaining how the company's internal resources contribute to developing competitive advantages and superior firm performance (Spanos & Lioukas, 2001) while ensuring employees' and customers' satisfaction. The Resource-Based Theory focuses on improving superior performance, achieving competitive advantages while delighting employees and customers. When analyzing the key attributes of operational excellence: continuous improvement of operational performance, competitive advantages and employee & customer satisfaction, the RBT can be identified as the most suitable theory for explaining operational excellence because the aims of the RBT and operational excellence are going in the same direction. According to the key assumptions of the RBT, organizations can achieve competitive advantages only when the resources of that particular organization are rich in the conditions: heterogeneity and immobility (Spanos & Lioukas, 2001). The assumption of heterogeneous means that 'skills, capabilities and other resources which an organization possess differ from one organization to another. Then, the assumption immobility means that resources do not transfer from one organization to another, in short-run. Thus, it assumes that competitors cannot imitate company's resources & strategies in the short run. As per these assumptions, an organization can receive competitive advantages since the heterogeneity is long lasting when the resources immobility is fulfilled (Spanos & Lioukas, 2001).

Then, providing an extension for the RBT, Barney (1991) argued that heterogeneous and immobile resources alone is not enough to achieve competitive advantage and introduced the VRIN framework (that scrutinizes whether resources are valuable, rare, costly to imitate and non-substitutable), which describes the characteristics, resources should possess in order to enable competitive advantages. According to this model, ‘valuable, rare, imperfectly imitable and non-substitutable resources generate the sustainable competitive advantage. The ‘value’ of resources involves the ability of the resource to defuse threats and support the company to internalize opportunities in the business environment, i.e., a resource is valuable if it empowers a company to articulate and implement strategies that improve productivity. The rareness of a resource implies that rivals do not have access to a particular resource or have minimal access. Resources are concerned as inimitable if those particular resources can’t be obtained from competing businesses. If an ideal resource cannot substitute by any other resource, that particular resource is considered as not substitutable. Here, the value and rarity of resources are essential requirements for reaching competitive advantages. However, resources should be inimitable and not substitutable for accomplishing sustainable competitive advantages (Barney, 1991).

The New Definition for the Construct Operational Excellence

Aligning the theoretical principles of RBT and identified attributes the researchers defined the construct operational excellence as follows.

“Achieving the continuous improvement of sustainable operational performance and sustainable competitive advantages through the utilization of resources which are valuable, rare, costly to imitate and non-substitutable in a manner upholding the satisfaction of employees, customers, suppliers and other important stakeholders”.

For ensuring the validity of the new definition, it was presented to three moderators who possessed a sound knowledge of operational excellence. Based on the given comments of the moderators, the above definition was finalized as follows.

“Utilization of valuable, rare, costly to imitate and non-substitutable resources and capabilities to execute the operations strategy consistently and reliably as the organization can achieve: a continuous improvement of the sustainable operational performance and sustainable competitive advantages while

upholding the satisfaction of employees, customers, suppliers and other important stakeholders”.

Interpretation of the New Construct Definition of Operational Excellence and Identification of Key Dimensions of the Construct Operational Excellence

The new definition for operational excellence developed by the researchers focuses on the process perspective. Accordingly, key inputs for operational excellence involve the valuable, rare, costly to imitate and non-substitutable resources and capabilities. Here, the 'value' of a resources/capabilities involves the ability of the resource to defuse threats and support the company to internalize opportunities in the business environment, i.e., a resource is valuable if it empowers a company to articulate and implement strategies that improve the productivity. The rareness of a resource implies that rivals do not have access to a particular resource or have minimal access. As per the theory, valuable resources which are not rare will not generate competitive advantages. For achieving competitive advantages, a resource should be both valuable and rare. Though it does not mean that valuable, but not rare resources are useless to a company. A company will undergo competitive disadvantages in the absence of exploit valuable resources (Barney & Clark, 2007). Resources are concerned as inimitable if those particular resources cannot be obtained from competing businesses. If an ideal resource cannot substitute by any other resource, that particular resource is considered as not substitutable. Here, the value and rarity of resources are essential requirements for reaching competitive advantages. However, resources should be inimitable and not substitutable for accomplishing sustainable competitive advantages (Barney, 1991).

The key outputs involve the continuous improvement of sustainable operational performance and sustainable competitive advantages, here continuous improvement of sustainable operational performance' refers to continuously improving the operational performance, which addresses the triple bottom lines performance: the economic, social and environmental performance. Then sustainable competitive advantages refer, the company should receive the competitive advantages continuously. Whereas, inputs should be converted into outputs, ensuring the satisfaction of employees, customers and other essential stakeholders while aligning with the existing operations strategy of the company consistently and reliably. Executing the operations strategy consistently and reliability' involves that operations strategy should be implemented a defined or intended way continuously. Thus, the organization should improve sustainable

operational performance and sustainable competitive advantages by implementing the defined operations strategy by the strategic/top management. In other words, the company's defined operations strategy works as a constraint for the operational excellence efforts.

Some attributes in the definition like: implementation of operations strategy consistently and continuously and employee, customer and other essential stakeholder satisfaction includes within the dimension operational performance (Filippini et al., 1998). Thus, to represent all these attributes the dimension continuous improvement of operational performance is suggested by the experts in the focus group interview. While sustainable competitive advantages were proposed as the other dimension of the construct operational excellence. Actually, these two dimensions are the output attributes of this new definition.

Operational Excellence vs. Organizational Excellence

Operational excellence is connected with the operations strategy. It is achieved by implementing the operations strategy. Therefore, operations strategy is the crucial point to differentiate operational excellence and organizational excellence. Organizational excellence is achieved through implementing the organizational strategy. Thus, organizational excellence targets at the organizational level, while operational excellence targets at the operational level. The term 'organizational excellence' focuses on attaining excellence in the whole things that an organization does, counting business results, leadership, strategy, customer focus, information management, people and processes (Mann, Mohammad & Agustin, 2012). Meanwhile, as characterized by the European Foundation for Quality Management (EFQM), organizational/business excellence means accomplishing business results through outstanding practices of business management, aligning with eight crucial concepts: "results orientation, customer focus, leadership & consistency of purpose, management by processes & facts, people development & involvement, continuous learning, innovation & improvement, partnership development and public responsibility" (European Foundation for Quality Management - EFQM, 2013). Thus, the emphasis on organizational/business excellence is much broader than focusing on a single area, function, process or operation of an organization. In achieving organizational/business excellence, being operationally excellent is a crucial requirement. If the organization could be excellent in all the operations, the destination of organizational excellence is smoothly arrived (Goswami, 2017).

Comparison of the New Definition with the Existing Definitions of Operational Excellence

According to Wurtzel (2019), accomplishing operational excellence (OE) requires “integrating strategy deployment, performance management, process excellence and elite work teams”. He has emphasized the essence of integration of strategy, process and people for achieving OE. However, this definition lacks the most crucial output attributes of OE: competitive advantages and continuous improvement of sustainable operational performance. Cesarotti & Spada (2009) defined, that OE enables an enterprise and its leadership to continuously improve performance through proper decision-making, ongoing investment, customer services and human resources capabilities. Nevertheless, their definition has given less attention to the attribute ‘sustainable competitive advantages. Yeo (2019) defines OE as a mindset, philosophy, and lifestyle that helps organizations endlessly advance their processes and perform better every time based on experience and breakthrough ideas. However, this definition also has missed the attribute, competitive advantages. According to Yeo (2019), performance measures: cost, profitability, efficiency, reliability and safety are targeted through the OE and inclusive system of processes which creates a difference in the core business are essential for improving these measures. This definition also has given less attention to competitive advantages. In addition, Fok-Yew (2014) has defined operational excellence as an approach to managing day to day operations with efficiency and foster continuous improvement. Though this definition focuses on operational efficiency and continuous operational performance improvement, the importance of competitive advantages has been missed.

Russell & Koch (2009) outlines, OE is about attaining a higher level of operational efficiency through doing things better, faster, and cheaper. Here, the sole focus is given on operational efficiency and attributes: continuous improvement of operational performance and sustainable competitive advantages are lacking. Ojha (2015) defines that OE is a function of organizational efficiency and effectiveness. The weakness of this definition is poor focus on the attributes: competitive advantages and continuous improvement of operational performance. Owusu and Sarkodie (2016) view that organizations can accomplish OE through maximum utilization of assets while concerning on the natural environment and health and safety measures. This definition has concerned environmental and social aspects as critical attribute of OE. But the weakness is poor focus on the essential attributes: competitive

advantages and continuous operational performance improvement. Shehadeh et al. (2016) introduced OE as an approach that is followed to achieve a world-class performance level by integrating the people, processes and tools. However, focus on the attributes: sustainable competitive advantages and continuous improvement of operational performance are lacking in this definition as well.

Govindsamy (2014) perceives operational excellence as an organizational management system that raises the business's competitive edge through increased efficiencies, higher returns on investment in best practices, a capable and empowered workforce, continuous improvement, and focus on quality and customer. Nevertheless, less focus has been given on the importance of implementing operational activities aligning with the operations strategy, which represents the organizational strategy. Meanwhile, as Seifert and Soto (2013) describe, operational excellence means the consistent and reliable execution of the business strategy than the competitors. Here consistently and reliably denotes that the execution of the business strategy should happen on the projected way, continuously. However, this definition has given less attention to the continuous improvement of operational performance and does not mention the way of execution and what type of resources are used to execute the operations strategy.

According to Morash (2001), operational excellence strategies facilitate overall cost leadership through total cost reduction, efficient and reliable supply, and high basic service levels. In this definition, the focus has been given only to cost leadership, which is one of the requirements to achieve operational excellence, and most of the essential attributes of operational excellence are not represented. Wiersema and Treacy (1993) defined, OE as an exact strategic approach to the production and delivery of products and services, to eliminate intermediate production steps, reduce transaction and other friction costs, and optimize business processes across functional and organizational boundaries to deliver the products/services to customers at a competitive price. They have given the priority only to the production & delivery efficiency and competitive prices. Nevertheless, this definition has given a less concern on the effectiveness, continuous improvement, and being consistent with the operations strategy. Park (2016) defined operational excellence as the continuous search for better performance and effectiveness in all organizations' dimensions. As per this definition, the main focus of operational excellence is the continuous improvement of organizational performance. However, this definition has failed

to address the attributes: competitive advantages and strategic consistency. While, Liker (2004) considered operational excellence as a philosophy of leadership, teamwork and problem solving resulting in continuous improvement throughout the organization by focusing on the customer's needs, empowering employees and optimizing existing activities in the process. However, this definition has given a less attention to the competitive advantages and strategic consistency. Lu, Betts, and Croom (2011), defined that operational excellence is supported by operational practices that focus on the right first time, optimization of production processes, high efficiency, productivity & effectiveness of processes and customer & market orientation. As per their definition, operational excellence is achieved through operational practices of the organization, and key outcomes are quality, productivity and customer satisfaction. Nevertheless, this definition has failed to address the most important attributes: competitive advantages, strategic consistency, and continuous operational performance improvement.

According to Duggan (2011), operational excellence is an organizational status where “every employee can see the flow of value to the customer and fix that flow before it breaks down”. Even though this definition is less operationalized, at a glance, this definition means that operational excellence can be achieved mainly through satisfied internal employees. However, for operational excellence, other attributes like focus on continuous improvement of operational performance, aligning with operational strategy and competitive advantages are also important. As per Sutton (2011), operational excellence strategically focuses on maximizing the value for customers through operations with the support of strong leadership, the power of people, the use of industry best practice, and the application of value-add technologies. Here, Sutton mentions that customer satisfactions is the main aim of OE and continuous improvement of operational performance, aligning with operational strategy and competitive advantages are mistreated. Gleich and Sauter (2008) stated that dynamic capabilities and integration of technological, cultural & organizational factors as the key inputs and efficiency & effectiveness as the key output of operational excellence. However, this definition does not focus on the attributes: continuous improvement of the operational performance and competitive advantages. As per Aguilera and Ruiz (2019), operational excellence involves a company's organizational culture, where employees can identify problems and solve them analytically to satisfy the customers. However, this definition has overlooked on the continuous improvement of operational performance and competitive advantages. As defined by Carvalho et al. (2017), operational excellence

provides tools and a framework to enable people to operationalize the change or transformation. As per this definition, the key outcome of operational excellence is change or transformation. This definition is impossible to explain the nature of the transformation that should be happened. Also, the definition lacks most of the attributes: competitive advantages, continuous improvement of operational performance and consistency with the strategy. Dahlgaard and Dahlgaard-Park (1999) explains that OE targets the integration among employees, external partnerships (customers, suppliers, society), processes and products to ultimately satisfy the external customers. Nevertheless, they have overlooked on the competitive advantages and continuous improvement of operational performance.

According to Susanti, Dachyar and Yadrifi (2015), operational excellence is a systematic approach to achieve world-class performance in productivity, quality and delivery of services and products to achieve superior results, lead time and reduce waste. Essentially, as this definition emphasizes, the key outcomes of operational excellence are the productivity, quality and status of distribution. However, the definition shows some repetitive terms because the term productivity included the term quality also. Further, the definition has not focused on competitive advantages and continuous improvement of operational performance. As stated by Brown, (2013), organizational leadership, clear organizational strategy, employee engagement, continuous improvement and scientific decision making are the main conditions of OE. This definition emphasizes the antecedents or conditions that affect operational excellence rather than the outcomes of the operational excellence. As stated by Operational Excellence Society, 2020, operational excellence is the constant and deliberate improvement of an organization's performance and the conditions of those who work there to pursue operational excellence by design and not by accident. This definition has equalized operational excellence with organizational excellence. Providing a broader concern on OE, Schmiedel, Brocke, and Uhl (2016) stated that OE spreads beyond the organization's shop-floor, incorporating the whole supply chain, optimizing processes among the organization, suppliers and customers. Here the short come is poor focus on the output attributes: competitive advantages, continuous improvement of operational performance, employee and customer satisfaction. According to Susanti, Dachyar, & Yadrifi (2015), OE stresses an organization's internal operations in terms of quality, flexibility, delivery, productivity, cost, and waste. As per their explanation, OE has a narrow focus only on the internal operational performance measures and it neglects the competitive advantages and continuous improvement of operational

performance. Martin (2015) explained that OE is a process in which the organization or business focuses on the customers' needs while consistently and continuously improving the current business activities being conducted in the workplace. This definition has neglected the importance of competitive advantages solely focusing on customer satisfaction and the continuous improvement of operational performance. As Park (2016) stated superior performance and profit is the key concerns of the operational excellence and it is achieved through customer involvement, innovations, change management and continuous improvement. Here focus on competitive advantages is not clear because sometimes superior performance means being good compared to the previous period.

Conclusion

The main aim of the current study was to develop a comprehensive construct definition for operational excellence and identify the most suitable dimensions of this construct and determine the most suitable theoretical domain of OE. Continuous improvement of sustainable operational performance measures, deriving sustainable competitive advantages and implementation of the operation strategy consistently and reliably ensuring the involvement and satisfaction of employees, suppliers, customers and other stakeholders were the main themes that were identified through existing operational excellence definitions, expert interviews, and focus group interviews. Thus, the researchers concluded these three themes as the key attributes of the concept of operational excellence. Refers to these attributes, the Resource-Based Theory (RBT) was concluded as the most applicable theory (theoretical lens) for explaining the construct operational excellence. The new construct definition of operational excellence was developed as, "utilization of valuable, rare, costly to imitate and non-substitutable resources & capabilities to execute the operations strategy consistently and reliably as the organization can achieve: a continuous improvement of the sustainable operational performance and sustainable competitive advantages while upholding the satisfaction of employees, customers, suppliers and other important stakeholders". Ultimately, the researchers concluded that continuous improvement of the sustainable operational performance and sustainable competitive advantages as the two main dimensions of the construct operational excellence.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and publication of this article.

References

- Aguilera, J. T., & Ruiz, N. L. T. (2019). Operational excellence: Concept review and meaning restructuration. *Proceedings of the International Conference on Industrial Engineering and Operations Management*, 2019, 678–688.
- Ahmad, H., Alekam, J. M. I., Shaharruddin, S., Marchalina, L., & Fok-Yew, O. (2018). The relationship between the change management and the operational excellence in electrical and electronics manufacturing companies. *International Journal of Supply Chain Management*, 7(5), 511–519.
- Bass, B. M. (1998). *Transformational leadership: Industrial, military, and educational impact*. Mahwah, NJ: Erlbaum.
- BTOES Insight. (2019). The global state of operational excellence: Critical challenges and future trends. <https://insights.btoes.com/research-report-2018/19-the-global-state-of-operational-excellence-critical-challenges-future-trends>
- Brown, A. (2013). Managing challenges in sustaining business excellence. *International Journal of Quality and Reliability Management*, 30(4), 461–475. <https://doi.org/10.1108/02656711311308420>
- Boya, V. R., & Rao, K. S. S. (2019). Operational excellence in pharmaceuticals—a case study on factors influencing operational excellence and their importance. *International Journal of Research and Analytical Reviews (IJRAR)*, 6(1), 909–914. http://ijrar.org/viewfull.php?&p_id=IJRAR19J3026
- Boya, V. R., & Rao, K. S. S. (2018). A study on the role of human resources management in achieving operational excellence in pharmaceuticals. *International Conference on Recent Trends in Engineering, Materials, Management and Sciences (1st ICRTEMMS-2018)*, 418–422. SBIT, Khammam, India.
- Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17(1), 99–120.
- Barney, J. B., & Clark, D. N. (2007). *Resource-based theory: Creating and sustaining competitive advantage*. Oxford, UK: Oxford University Press
- Bengtsson, M. (2016). How to Plan and Perform a Qualitative Study Using Content Analysis. *Nursing Plus Open*, 2, 8-14. <https://doi.org/10.1016/j.npls.2016.01.001>
- Carvalho, A. M., Sampaio, P., Rebentisch, E., & Saraiva, P. (2017). Operational excellence as a means to achieve an enduring capacity to change – revision

- and evolution of a conceptual model. *Procedia Manufacturing*, 13, 1328–1335. <https://doi.org/10.1016/j.promfg.2017.09.109>
- Cesarotti, V., & Spada, C. (2009). A systemic approach to achieve operational excellence in hotel services. *International Journal of Quality and Service Sciences*, 1(1), 51–66. <https://doi.org/10.1108/17566690910945868>
- Dahlgaard, J. J., & Dahlgaard, S. M. P. (1999). Integrating business excellence and innovation management: Developing a culture for innovation, creativity and learning. *Total Quality Management*, 10(4–5), 465–472. <https://doi.org/10.1080/0954412997415>
- Duggan, K. (2011). *Design for Operational Excellence: A Breakthrough Strategy for Business Growth*. McGraw-Hill Education
- European Foundation for Quality Management, (2013). EFQM Excellence Model in 2013, Retrieved December 18, 2019 from <http://www.efqm.org/>.
- Filippini, R., Forza, C. & Vinelli, A. (1998). Trade-off and compatibility between performance: definitions and empirical evidence. *International Journal of Production Research*, 36, 3379–3406.
- Fok-Yew, O. (2014). The Effect of Change Management on Operational Excellence in Electrical and Electronics Industry: Evidence from Malaysia. *British Journal of Economics, Management & Trade*, 4(8), 1285–1305. <https://doi.org/10.9734/bjemt/2014/9201>
- Fok-Yew, O., & Ahmad, H. (2014). The Effect of Change Management on Operational Excellence moderated by Commitment to Change: Evidence from Malaysia. *International Journal of Innovation and Applied Studies*, 9(2), 615–631. <https://doi.org/10.9734/bjemt/2014/9201>
- Fok-Yew, O., Ahmad, H., & Baharin, S. (2013). Operational Excellence and Change Management in Malaysia Context. *Journal of Organizational Management Studies*. <https://doi.org/10.5171/2013.957636>
- Found, P., Lahy, A., Williams, S., Hu, Q., & Mason, R. (2018). Towards a theory of operational excellence. *Total Quality Management and Business Excellence*, 29(9–10), 1012–1024. <https://doi.org/10.1080/14783363.2018.1486544>
- Goswami, P. (2017). Personal-excellence-process-excellence-operational-excellence-business-excellence, Retrieved December 30, 2019 from <https://www.benchmarksixsigma.com/forum/topic/34869-personal-excellence-process-excellence-operational-excellence-business-excellence/>
- Gleich, R. & Sauter, R. (2008) *Operational Excellence: Innovative Ansätze und Best Practices in der produzierenden Industrie (Innovative approaches and Best Practices in the production industry)*. München: Rudolf Haufe Verlag GmbH & Co. KG. URL of amazon books: <https://www.amazon.de/Operational-Excellence-Innovative-Practices-produzierenden/dp/344808820X>
- Govindsamy, N. (2014). Critical review of Operations Excellence programs: A petrochemical company as case study. [Magister Thesis], Development and

- Management Engineering, Potchefstroom Campus of the North-West University
- Ifeanyichukwu, O. C. (2010) Organizational performance improvement in an oil producing facility in Nigeria through operational excellence. North-West University, South Africa.
- LaMarco, N. (2019). Objectives of operational performance. Retrieved March 12, 2021 from <https://smallbusiness.chron.com/objectives-operational-performance-77937.html>
- Liker, J. K. (2004). *The Toyota Way: 14 Management Principles from the World's Greatest Manufacturer*. New York, NY: McGraw-Hill.
- Lu, D., Betts, A., & Croom, S. (2011). Re-investigating business excellence: Values, measures and a framework. *Total Quality Management and Business Excellence*, 22(12), 1263-1276
- Mann, R., Mohammad, M., Ma Theresam A. & Agustin. (2012). *Understanding Business Excellence: An awareness Guidebook for SMEs*. Asian Productivity Organization.
- McKinsey & Company. (2015). The survey report on 'How to beat the transformation odds', Retrieved January 12, 2020 from <https://www.mckinsey.com/business-functions/organization/our-insights/how-to-beat-the-transformation-odds>
- Martin, P. G. (2015). The Essential Evolution to Real-Time Business Operational Excellence. In *Operational Excellence: Journey to Creating Sustainable Value* (pp. 99–112). <https://doi.org/10.1002/9781118990162.ch6>
- Milano, S. (2021). Organizational vs Operational. Retrieved April, 20, 2021 from <https://smallbusiness.chron.com/organizational-vs-operational72509.html>
- Morash, E. A. (2001). Supply chain strategies, capabilities, and performance. *Transportation Journal*, 41(1), 37–54.
- Operational Excellence Society. (2020). *Operational Excellence Program Design and Deployment*. Retrieved December, 31 from <https://opexsociety.org/newsletters/operational-excellence-by-design-newsletter-year-end-2020/>
- Owusu, P. A. & Sarkodie, S.A. (2016) 'A review of renewable energy sources, sustainability issues and climate change mitigation', *Cogent Engineering*. *Cogent*, 3(1), 1–14. doi:10.1080/23311916.2016.1167990.
- Ojha, S. K. (2015). Operational Excellence for Sustainability of Nepalese Industries. *Procedia - Social and Behavioral Sciences*, 189, 458–464. <https://doi.org/10.1016/j.sbspro.2015.03.196>
- Prahalad, C. K., & Hamel, G. (1990). The core competence of the corporation. *Harvard Business Review*, 68(3), 79-91
- Park, M. J. (2016). Redefining Operational Excellence: New Strategies for Maximizing Performance and Profits Across the Organization. *The Journal of Applied Management and Entrepreneurship*, 19(4), 125–126. <https://doi.org/10.9774/gleaf.3709.2014.oc.00013>

- Russell, R. H., & Koch, J. I. (2009). *Operational Excellence: The New Lever for Profitability and Competitive Advantage*. Palladium Group
- Seifert, C., & Soto, F. (2013). *Achieving Operational Excellence While Slashing Costs The 10 Things You Must Get Right*. Wilson Perumal & Company's Vantage Point, 2015 (4), 1-10
- Sutton D. (2011), *Back to basics: A practitioner's guide to operations excellence*. Cincinnati, Ohio, Operations Excellence Services
- Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students* (5th ed.). Prentice Hall
- Spanos, Y. E., & Lioukas. (2001). An examination into the causal logic of rent generation: contrasting the resource-based perspective. *Strategic Management Journal*, 22(10), 907-934.
- Sekaran, U., & Bougie, R. (2010). *Research methods for business: A skill building approach* (5th ed.). United Kingdom: John Wiley & Sons Ltd.
- Schmiedel, T., Vom Brocke, J. and Uhl, A. (2016). Operational excellence', *Digital Enterprise Transformation: A Business-Driven Approach to Leveraging Innovative IT*, pp. 207–230. doi: 10.4324/9781315577166.
- Shehadeh, R. M., Maqableh, M., Al-zoubi, M. O., Akhorshaidh, A. O., & Alsham, M. K. (2016). Review the Operational Excellence Factors of Service Firms: A Literature Review. *European Journal of Business and Management*, 8(3), 1–11. <https://www.researchgate.net/publication/301215194>
- Susanti, Y. S. N., Dachyar, M., & Yadrifi. (2015). Analysis of Factors that Support the Operational Excellence in Telecommunication-Supporting Companies. *International Journal of Applied Engineering Research*, 10(15), 35461–35465.
- Shingo Institute/ Utah State University. (2014). *The Shingo Model*. Retrieved February 10, 2020 from <https://shingo.org/shingo-model/>
- Sriyakul, T., Singa, A., Jutamat, S., Kittisak, J. (2019). Effect of cultural traits, leadership styles and commitment to change on supply chain operational excellence. *Journal of Computational and Theoretical Nanoscience*. American Scientific Publishers, 16(7), 2967–2974. doi: 10.1166/jctn.2019.8203.
- Saeed, B., Tasmin, R., Mehmood, A., & Hafeez, A. (2020). Exploring the impact of transformational leadership and human resource practices on operational excellence mediated by knowledge sharing: A conceptual framework. *International Journal of Scientific and Technology Research*, 9(2), 4458–4468.
- Urlick, M. J., Adams, D. E. & Smith, T. (2017). Taylorism and Operational Excellence Improving on the- One Best Way. *Journal of Leadership and Management*, 9(10), 17–21. Available at: www.leadership.net.pl (Accessed: 30 July 2020).
- Wernerfelt, B., (1984). A Resource based view of the firm. *Strategic Management Journal*, 5(2), 171–180. Available at: <http://www.ncbi.nlm.nih.gov/pubmed/19064477>.

- Wiersema, F., & Treacy, M. (1993). Customer intimacy and other value disciplines. *Harvard Business Review*, 71(1), 84–93.
- Watson, J. (2010). Operational Excellence Management System, Chevron USA INC. http://www.chevron.com/documents/pdf/OEMS_Overview.pdf.
- Wurtzel, M. (2019). An introduction to operational excellence. Retrieved November 11, 2019 from <https://www.bpminstitute.org/resources/articles/introduction-operational-excellence>
- Wahab, M. H. A.A. A., Ismail, M., & Muhayiddin, M. N. (2019 a). The Effect of Internal Environmental Factors on Operational Excellence of Manufacturing Industry: A Pilot Study. *International Journal of Academic Research in Business and Social Sciences*, 9(2). <https://doi.org/10.6007/ijarbss/v9-i2/5666>
- Wahab, M. H. A.-A. A., Ismail, M., & Muhayiddin, M. N. (2016). Factors Influencing the Operational Excellence of Small and Medium Enterprise in Malaysia. *International Journal of Academic Research in Business and Social Sciences*, 6(12). <https://doi.org/10.6007/ijarbss/v6-i12/2496>
- Wren, D.A., Bedeian, A.G. (2009). *The evolution of management thought*. (6th ed.) New York. Wiley
- Yeo, R. K. (2019). From operational excellence to organizational significance: setting the tempo for change. *Strategic HR Review*, 18(4), 142–149. <https://doi.org/10.1108/shr-04-2019-0027>