
Research Areas, Gaps and Future Research Directions of Operational Excellence: A Systematic Literature Review

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Abstract

The current study attempts to examine what exists in the operational excellence body of literature, explore the research gaps, and point out future research directions in the operational excellence context, by conducting a Systematic Literature Review (SLR). A carefully selected sample of 43 papers published within the 2009-2021-time period was analysed to achieve these research objectives. The results of the study were presented under nine different themes; distribution of papers across years, geographical area, industrial sectors, publication venue, research methods, research area, theory application, knowledge contribution, gaps and future research directions. Very little attention on the effect of capabilities (operational and dynamic capabilities) on operational excellence, less application of theoretical base for explaining operational excellence, not researched in some industrial sectors, countries and continents, a very least attention on psychometric scale development, and mixed-method research approach were identified as the existing research gaps in the operational excellence context. The present SLR is beneficial for academics, researchers, practitioners, and policymakers since it explains the current knowledge and gaps in an operational excellent research context.

Keywords: Operational Excellence, Determinants of Operational Excellence, Gaps and Future Research Directions in Operational Excellence

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Introduction

Business firms have arrived into the era of customer delight. Thus, the success or failure of a firm depends on its ability to delight its customer base (BTOES Insight, 2019). The factors such as leadership, strategy alignment, capabilities, innovations, technology adaption, focus on continuous improvement with the fast-paced globalized competitive market, knowledge management, cost, cycle time, and delivery speed within an organizational setting are the salient drivers for delighting customers (BTOES Insight, 2019). As a means for blooming these drivers while maintaining sustainable competitive advantages, the corporate sector is moving towards the philosophies like organizational/business excellence. The journey of 'organizational excellence' requires adapting to the more systematic and structured ways to respond to the dynamics of the corporate environment and customer needs (BTOES Insight, 2019). The term organizational excellence focuses on attaining excellence in an organization's whole things, counting business results, leadership, strategy, customer focus, information management, people, and processes (Mann et al., 2012).

In achieving organizational/business excellence, being operationally excellent is the crucial fundamental requirement. If the organization could be excellent in all its operations, the destination of organizational excellence is smoothly arrived (Govindsamy, 2014). 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). Also, it is viewed as the execution excellence of an organization (BOTES Insight, 2019). Further, operational excellence could be explained as the corporate management system that accelerates the competitive advantages, profitability through amplified efficiencies, returns on investment, employs best and world-class practices, develops capable and empowered employees (including leaders), endeavours for continuous improvement, quality and customer satisfaction (Govindsamy, 2014).

Meanwhile, the existing literature on operational excellence reveals that 'continuous improvement of operational performance' (Yeo et al., 2014), and sustainable competitive advantages (Wiersema & Treacy, 1993; Shehadeh et al., 2016a) are the key aims or output attributes of operational excellence. Continuous improvement of operational performance prioritizes the continuous improvement of efficiency and effectiveness in organizational operations (Yeo, 2019). Then, competitive advantages emphasize delighting customers and improving operational performance over the competitors (BTOES Insights, 2019). According to McKinsey & Company (2015), operational excellence is achieved through the application of various philosophies, tools and techniques like Lean, Total Quality Management, Six -Sigma, just in Time and process. Re-engineering those 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).

It seems that because of these valuable benefits, operational excellence is getting higher popularity and demand in all the industries throughout the world (BTOES Insight, 2019). Even though in the past operational excellence strategies were more popular in the manufacturing sector, currently, the service sector also massively utilizes the operational excellence strategies (Wurtzel, 2019; Fok-Yew & Ahmad, 2014). As a result of the widespread application of operational excellence, the research and academic literature in this field have bloomed (Saeed et al., 2021). Especially in this field, empirical and conceptual papers abound. Nevertheless, review papers that systematically explored what exists in the operational excellence body of literature, the research gaps and prospects of operational excellence context are very few (Saeed et al., 2021). Thus, the current study attempts, first to examine what exists in the operational excellence body of literature, second to explore the research gaps and third to point out future research directions in the operational excellence context. This study is unlike the literature review studies on operational excellence published yet. Because, more specifically, the existing operational excellence literature review studies have focused on the issues like components of operational excellence concept (Muazu & Tasmin, 2019), antecedents of the operational excellence (Muazu & Tasmin, 2019), existing models on operational excellence (Aguilera & Ruiz, 2019), underpinning theories of operational excellence (Found et al., 2018) and factors that affect operational excellence (Shehadeh et al., 2016b).

In order to achieve the research objectives, a sample of 43 papers published during the period 2009-2013 were analysed and the main topics covered were: existing research areas, publication venue, geographical location and industrial sectors where the research studies were conducted, knowledge contribution, specific research methods followed, theory usage, research gaps and future research directions of operational excellence context.

Literature Review

Operational Excellence

Wiersema and Treacy (1993), introduced a business model based on three dimensions called 'Value Disciplines' (Customer Intimacy, Product Leadership, Operational Excellence) and operational excellence is one of these value disciplines. Here, they defined the term operational excellence as 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 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, most contemporary definitions of operational excellence focus on the continuous improvement of all the operations within an organization, concerning that every operation is essential to delighting customers and achieving competitive advantages (BTOES Insight, 2019).

Also, operational excellence is defined as a journey that encompasses the ‘transformation’ from the traditional way of doing to the sustained high-performance level by employing the right tools to the right processes (McKinsey & Company, 2015). If it is clarified more, operational excellence occurs with a significant change makes to the organizational factors such as people, culture, structure, technology and task. None of the organizations can achieve operational excellence overnight, and it is a result of multi-year organizational transformation. In other terms whether operational excellence achieved or failed is determined depending on the success of this organizational transformation process. Every organization in the world may be in a particular place/point in this transformation journey. Some organizations might achieve operational excellence; some may be very close to the destination, while others may start this journey. However, the success of an organizational transformation crucially depends on the resources and capabilities (operational capabilities and dynamic capabilities) of the organization (Barney,1991).

Continuous improvement of operational performance’ (Yeo et al., 2014), and sustainable competitive advantages (Wiersema & Treacy, 1993; Shehadeh et. al., 2016) are the key aims or output attributes of operational excellence. Continues improvement of operational performance prioritizes the continuous improvement of efficiency and effectiveness in organizational operations (Yeo, 2019). Competitive advantages emphasize delighting customers and improving operational performance than the competitors (BTOES Insights, 2019).

Research Methods

A Systematic Literature Review (SLR) was conducted to accomplish the study's objectives since this methodology provides substantial advantages over conventional narrative reviews (Lim et al., 2014). The SLR methodology consisting of the planning stage, conducting stage and reporting/dissemination stage, as clarified by Tranfield et al. (2003), was adopted in the present study.

Planning Stage

The primary work of this stage includes the development of the review protocol. The protocol is a plan that helps protect objectivity by providing explicit descriptions of the steps to be taken. The protocol comprises information on the specific questions addressed in the study, the population and sample of the research studies reviewed, the search strategy for identifying relevant studies, and the criteria for inclusion and exclusion of studies in the review (Davies and Crombie, 1998). The Review Protocol of the current study is explained as follows.

Research Questions

The current study addresses the following research questions aligning with the three main research objectives based on the existing literature gaps.

1. How have the existing studies on operational excellence distributed across years?
2. What are the alternative venues for publishing existing studies on operational excellence?
3. What are the geographical areas covered by existing studies on operational excellence?
4. What are the industries covered by existing studies on operational excellence?
5. What are the specific research methods followed by existing studies on operational excellence?
6. What are the existing research areas within the operational excellence body of knowledge?
7. What are the theories utilized by existing studies on operational excellence?
8. What are the knowledge contributions made by existing studies in operational excellence?
9. What are the existing gaps in the operational excellence research context?
10. What are the future research directions in the operational excellence research context?

Research Objectives

By conducting the current SLR, the researchers aimed to achieve three primary objectives as follows.

1. To explore what exists in the current literature of the operational excellence research context
2. To identify research gaps of operational excellence context
3. To point out future research directions of operational excellence context

Search Strategy

The year 2009 was taken as the beginning year of the current SLR, given that from 2009 onwards, the number of operational excellence research studies have significantly increased (Saeed et al., 2021). The literature search was based on terms such as operational excellence, operational excellence research in Sri Lanka, factors that affect operational excellence, and gaps in operational excellence research. Based on the above keywords, articles published within the last 12-year period (from 2009-2021) in English were found from research databases: Willy Online Library, EBSCO, Taylor and Francis, Emerald Insight, JSTOR, Web of Science and Science Direct. Through these databases total of 405 papers were initially screened. Inclusion and exclusion criteria were articulated (Table 2) to restrict the search of articles relevant to the scope of the study. Based on the inclusion and exclusion criteria, out of 405 papers, 43 papers were selected as the study sample (Table 3).

Table 2: Inclusion and Exclusion Criteria

Inclusion criteria	Exclusion criteria
Articles published between 2009 and 2021 in well-known databases: Willy Online Library, EBSCO, Taylor and Francis, Emerald Insight, JSTOR, Web of Science and Science Direct	Any publication before the year 2009 and after 2021
Articles studying on operational excellence as a variable (independent, dependent, mediator or moderator) and as the key subject area.	Academic books, online sites and gray literature (textbooks, reports, working, papers from research groups, technical reports, etc.)
Papers written in the English language	Papers written in any other language
Papers with excellence scientific writing	Papers with poor scientific writing
Published as full papers	Published only abstract

Summary of the Research Papers in the Sample

Based on the inclusion and exclusion criteria, out of 405 papers, the following 43 papers were selected as the study sample (Table 3).

Table 3: Summary of the Selected Research Papers

No	Title	Author and year	Journal/conference/university
P1	Using block chain technology to drive operational excellence in perishable food supply chains during outbreaks	(Kayikci et al., 2021)	The International Journal of Logistics Management
P2	Development of a multi-item Operational Excellence scale: Exploratory and confirmatory factor analysis	(Saeed et al., 2021)	The TQM journal
P3	Operational excellence in a green supply chain for environmental management: a case study	(Kazancog et al., 2020)	Business Strategy and the Environment
P4	Operational excellence through lean manufacturing: considerations for productivity management in Malaysia's construction industry	(Ibrahim et al., 2020)	Journal of Transnational Management
P5	The mediating effect of Enterprise Risk Management (ERM) implementation on operational excellence in the Malaysian oil and gas sector: a conceptual framework	(Tasmin et al., 2020)	Future Business Journal
P6	Relationship between leadership support and operational excellence in health care sector: a study of Indian health care managers	(Nair & Thomas, 2020)	Journal of Healthcare Quality Research
P7	Exploring the impact of transformational leadership and human resource practices on operational excellence mediated by knowledge sharing: a conceptual framework	(Saeed et al., 2020)	International journal of scientific & technology research
P8	The influence of operational excellence on the culture and agility of organizations: evidence from industry	(Carvalho et al, 2020)	International Journal of Quality & Reliability Management

P9	Operational excellence in pharmaceuticals –a case study on factors influencing operational excellence and their importance	(Boya & Rao, 2019)	International Journal of Research and Analytical Reviews (IJRAR)
P10	From operational excellence to organizational significance: setting the tempo for change	(Yeo, 2019)	Strategic HR Review
P11	Measuring operational excellence: an operational excellence profitability (OEP) approach	(Golcher et al., 2019)	Production Planning & Control
P12	A proposed framework to apply operational excellence as a business strategy.	(Cahyo, 2019)	Journal of engineering and management in industrial system
P13	Operational excellence: concept review and meaning restructuration.	(Aguilera & Ruiz, 2019)	Proceeding of the International Conference on Industrial Engineering and Operations Management Bangkok, Thailand, March 5-7, 2019
P14	Operational excellence review through self-assessment	(Badithela & Al-Haddadi 2019)	Abu Dhabi International Petroleum Exhibition and Conference 2019, ADIP 2019 of Society of Petroleum Engineers
P15	Information culture, competitive advantage and operational excellence as correlate of job performance among British American Tobacco company workers, Ibadan, Oyo state, Nigeria	(Adenekan, 2019)	International Journal of Information, Business and Management
P16	Operational excellence and the implications for health, safety and environmental performance in the oil and gas industry	(Muazu & Tasmin, 2019)	Journal of Technology Management and Business

P17	The effect of internal environmental factors on operational excellence of manufacturing industry: a pilot study	(Wahab, Ismail & Muhayiddin, 2019a)	International Journal of Academic Research in Business and Social Sciences
P18	Effect of cultural traits, leadership styles and commitment to change on supply chain operational excellence	(Sriyakul et al., 2019)	Journal of Computational and Theoretical Nanoscience
P19	Influence of internal and external environmental factors on operational excellence of manufacturing sectors in Malaysia	(Wahab, Ismail & Muhayiddin, 2019b)	International Journal of Academic Research in Business and Social Sciences
P20	Strategic Leadership (SL), operational excellence and Organizational Performance (OP): a lesson from Japanese company in Malaysia	(Rahman et al., 2019)	International Journal of Recent Technology and Engineering (IJRTE)
P21	The relationship between the change management and the operational excellence in electrical and electronics manufacturing companies	(Ahmad et al., 2018)	International Journal of Supply Chain Management
P22	Influence of leadership and environmental excellence in SME towards operational excellence in Bandung district	(Irawan & Ludiya, 2018)	In Presiding International conference on Information Technology and Business (ICITB).
P23	A study on the role of human resources management in achieving operational excellence in pharmaceuticals	(Boya & Rao, 2018)	1st International Conference on Recent Trends in Engineering, Materials, Management and Sciences (ICRTEMMS-2018), SBIT, Khammam, India 25-27 Oct. 2018
P24	Organizational culture and operational excellence of agrochemical firms in Nairobi	(Bwibo, 2018)	University of Nairobi Master thesis: Master: Operational Excellence of Agrochemical Firms

P25	Towards a theory of operational excellence	(Found et al. 2018)	Total Quality Management and Business Excellence
P26	Taylorism and operational excellence improving on the “one best way”	(Urlick, Adams & Smith 2017)	Journal of Leadership and Management
P27	Management response to Laudato Si: an operational excellence perspective	(Urlick, Hisker & Godwin 2017)	Journal of Leadership and Management
P28	Operational excellence as a means to achieve an enduring capacity to change – revision and evolution of a conceptual model	(Carvalho et al., 2017)	Procedia Manufacturing
P29	Factors Influencing the Operational Excellence of Small and Medium Enterprise in Malaysia	(Wahab, Ismail & Muhayiddin, 2016a)	International Journal of Academic Research in Business and Social Sciences
P30	Review the operational excellence factors of service firms: a literature review	(Shehadeh et al. 2016a)	European Journal of Business and Management
P31	Implementation of operational excellence: challenges related to employee perception and organizational culture	(Fontes, 2016)	University of San Diego, School of Leadership and Education Science Doctoral degree
P32	Investigating critical factors affecting the operational excellence of service firms in Jordan	(Shehadeh, et al., 2016b)	Journal of Management Research
P33	The effect of hard and soft factors on operational excellence in small and medium enterprise	(Wahab, Ismail & Muhayiddin, 2016 b)	The 2016 UMK Postgraduate Colloquium Faculty of Entrepreneurship and Business
P34	Toyota operational excellence - management model	(Khalil, 2016)	International Journal of Scientific & Engineering Research

P35	Analysis of factors that support the operational excellence in telecommunication-supporting companies	(Susanti, Dachyar & Yadrifi 2015)	International Journal of Applied Engineering Research
P36	Operational excellence in the pharmaceutical industry – an architecture for emerging markets	(Bellm, 2015)	University of St. Gallen, Business Dissertations
P37	Operational excellence for sustainability of Nepalese industries	(Ojha, 2015)	Procedia - Social and Behavioral Sciences
P38	The effect of change management on operational excellence in electrical and electronics industry: evidence from Malaysia	(Fok-Yew & Ahmad, 2014)	British Journal of Economics, Management & Trade
P39	The effect of change management on operational excellence moderated by commitment to change: evidence from Malaysia	(Fok-Yew & Ahmad, 2014)	International Journal of Innovation and Applied Studies
P40	Operational excellence – a key to world class business performance	(Naftanaila et al., 2013)	Studies in Business & Economics.
P41	Operational excellence and change management in Malaysian context	(Fok-Yew, Ahmad & Baharin, 2013)	Journal of Organizational Management Studies
P42	How effective leadership practices deliver safety performance and operational excellence	(Winter, et al., 2010)	SPE Oil and Gas India Conference and Exhibition held in Mumbai, India, 20–22 January 2010.
P43	A systematic approach to achieve operational excellence in hotel services	(Cesarotti and Spada, 2009)	International Journal of Quality and Service Sciences

Conduct the Review

The information discovered from the papers of the sample such as the title, publication year, journal/conference/university, authors, paper type, geographic research area, industry, research gaps, application of theories and critical knowledge contribution of the study, research methodology deployed, and critical contributions were extracted in an excel spreadsheet (Tranfield et al., 2003). Afterwards, a comprehensive analysis was conducted by evaluating the records of the excel spreadsheet.

Reporting and Dissemination

Based on the excel spreadsheet developed in Stage II, a clear picture of what exists in the operational excellence body of literature from 2009-2021 was provided and critically presented. Furthermore, the research gaps and future research directions were analytically presented and discussed.

Results

This section presents the results of the analysis under nine different themes; distribution of papers across years, geographical area, industrial sectors, publication venue, research methods, research area, theory application, knowledge contribution, gaps and future research directions.

Distribution of Studies across Years

Figure 1 demonstrates the distribution of the research papers across years, from 2009 to 2021. Accordingly, most of the sample studies (28 per cent) were published in 2019. While in the years 2009 and 2010, a smaller number of papers (2 per cent) have been published. However, the sample of 43 papers reviewed does not include any paper for 2011 and 2012.

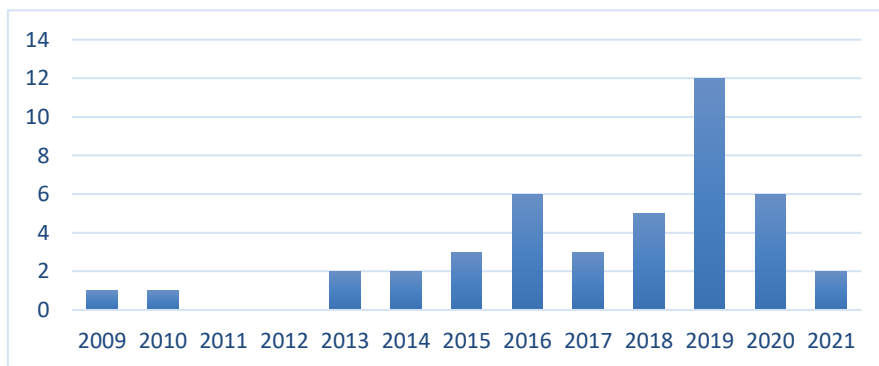


Figure 1: Distribution of Studies across Years

Distribution of Studies across Geographical Areas

As figure 2 demonstrates the companies in the sample of 43 research papers operate in 13 countries on four continents. Asia, Africa, North America and Europe represent these four continents. While India, Indonesia, Saudi Arabia, Turkey, Malaysia, United States America, Mexico, Kenya, Nigeria, Africa, Nepal, Jordan and Japan are those countries in which operational excellence research context has been explored during 2009-2021. The majority of these countries belong to the Asia continent (61 per cent). The countries with the highest operational excellence studies are Malaysia (10 studies) and Indonesia (4 studies).

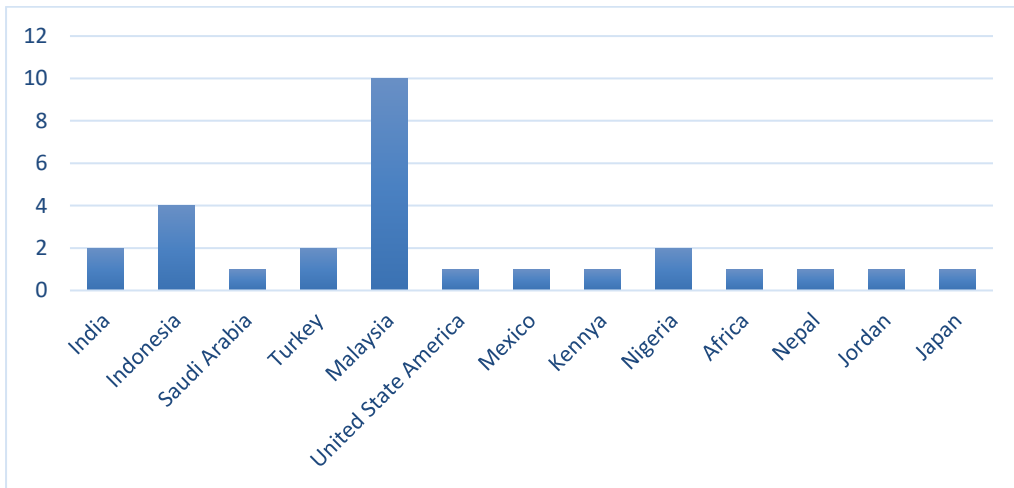


Figure 2: Distribution of Studies across Geographical Areas

Industrial Sectors Covered by Existing Studied on Operational Excellence

As figure 3 exhibits, the sample of 43 studies represents the industries: Pharmaceuticals, Telecommunication, Galvanizing, Electricals & Electronics, Construction, Petroleum, Agrochemical, Tobacco, Health Care, Energy, Automobile and Hotel. Out of these industries, Electricals & Electronic (4 studies), Energy (4 studies) and Pharmaceuticals (3 studies) are the mainly examined industries. As a whole, both manufacturing and service sectors have been addressed under this research area. Also, these researches have been conducted in Small and Medium Scale Enterprises and Multinational companies.

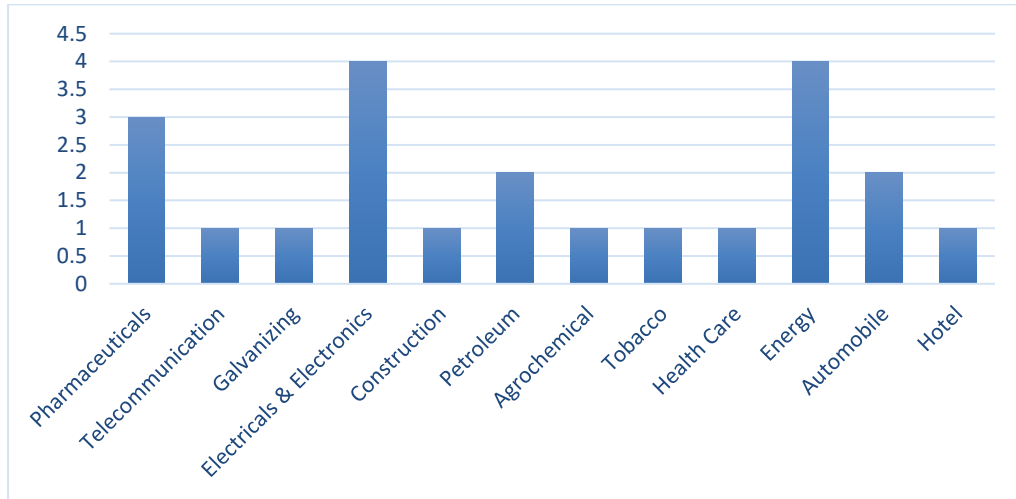


Figure 3: Industrial Sectors Covered by Existing Studied on Operational Excellence

Alternative Venues of Publishing of Existing Studied on Operational Excellence?

Journals (32 pieces of research), conference proceedings (8 pieces of research) and thesis (3) of universities were the main venues of publishing the sample of 43 research papers. The sample's most significant portion (75 per cent) represented journal articles. The distribution of research papers across journals are as follows (Table 4). Table 5 and 6 exhibit the distribution of researches across conference proceedings and universities.

Table 4: Distribution of Papers across Journals

Journal	Author and year	Number of papers
The International Journal of Logistics Management	(Kayikci et al., 2021)	1
The TQM journal	(Saeed et al., 2021)	1
Business Strategy and the Environment	(Kazancog et al., 2020)	1
Journal of Transnational Management	(Ibrahim et al., 2020)	1
Future Business Journal	(Tasmin et al., 2020)	1
Journal of Healthcare Quality Research	(Nair & Thomas, 2020)	1
International journal of scientific & technology research	(Saeed et al., 2020)	1
International Journal of Quality & Reliability Management	(Carvalho et al, 2020)	1

International Journal of Research and Analytical Reviews (IJRAR)	(Boya & Rao, 2019)	1
Strategic HR Review	(Yeo, 2019)	1
Production Planning & Control	(Golcher et al., 2019)	1
Journal of engineering and management in industrial system	(Cahyo, 2019)	1
International Journal of Information, Business and Management	(Adenekan, 2019)	1
Journal of Technology Management and Business	(Muazu & Tasmin, 2019)	1
International Journal of Academic Research in Business and Social Sciences	(Wahab, Ismail & Muhayiddin, 2019a; Wahab, Ismail & Muhayiddin, 2019b; Wahab, Ismail & Muhayiddin, 2016a)	3
Journal of Computational and Theoretical Nanoscience	(Sriyakul et al., 2019)	1
International Journal of Recent Technology and Engineering (IJRTE)	(Wahab, Ismail & Muhayiddin, 2019b)	1
International Journal of Supply Chain Management	(Rahman et al., 2019)	1
Total Quality Management and Business Excellence	(Found et al. 2018)	1
Journal of Leadership and Management	(Urlick, Adams & Smith 2017; Urlick, Hisker & Godwin 2017)	2
European Journal of Business and Management	(Shehadeh et al. 2016a)	1
Journal of Management Research	(Shehadeh, et al., 2016b)	1
International Journal of Scientific & Engineering Research	(Khalil, 2016)	1
International Journal of Applied Engineering Research	(Susanti, Dachyar & Yadrifi, 2015)	1
British Journal of Economics, Management & Trade	(Fok-Yew & Ahmad, 2014a)	1
International Journal of Innovation and Applied Studies	(Fok-Yew & Ahmad, 2014b)	1
Studies in Business & Economics.	(Naftanaila et al., 2013)	1
Journal of Organizational Management Studies	(Fok-Yew, Ahmad & Baharin, 2013)	1
International Journal of Quality and Service Sciences	(Cesarotti and Spada, 2009)	1

Table 5: Distribution of Papers across Conferences

Conference proceeding	Author and year	Number of researches
Proceeding of the International Conference on Industrial Engineering and Operations Management Bangkok, Thailand, March 5-7, 2019	(Aguilera & Ruiz, 2019)	1
Abu Dhabi International Petroleum Exhibition and Conference 2019, ADIP 2019 of Society of Petroleum Engineers	(Badithela & Al-Haddadi 2019)	1
In Presiding International conference on Information Technology and Business (ICITB).	(Irawan & Ludiya, 2018)	1
1st International Conference on Recent Trends in Engineering, Materials, Management and Sciences (ICRTEMMS-2018), SBIT, Khammam, India 25-27 Oct. 2018	(Boya &Rao, 2018)	1
Procedia Manufacturing	(Carvalho et al., 2017)	1
The 2016 UMK Postgraduate Colloquium Faculty of Entrepreneurship and Business	(Wahab, Ismail & Muhayiddin, 2016 b)	1
Procedia - Social and Behavioral Sciences	(Ojha, 2015)	1
SPE Oil and Gas India Conference and Exhibition held in Mumbai, India, 20–22 January 2010.	Winter, et al., 2010	1

Table 6: Distribution of Papers across Universities

University	Author and year	Number thesis
University of Nairobi-Master thesis: Master: Operational Excellence of Agrochemical Firms	(Bwibo, 2018)	1
University of San Diego, School of Leadership and Education Science-Doctoral degree	(Fontes, 2016)	1
University of St. Gallen, Business Dissertations	(Bellm, 2015)	1

Specific Research Methods Followed by Existing Studied on Operational Excellence

Figure 4 exhibits the sample of 43 studies comprised of 28 (65 per cent) empirical papers, 10 (23 per cent) theoretical papers and 5 (12 per cent) review studies. Accordingly, most of the publications in the sample of studies are empirical. Further, (figure 5) the sample consisted of 24 (56 per cent) qualitative studies, 17 (39 per cent) quantitative studies and 2 (5 per cent) mixed-method studies. Thus, most studies in this context have followed the qualitative research approach, and mixed-method approaches have seldom been adopted. Questionnaire surveys, interviews, document surveys, focus group interviews, observations and literature review have been utilized as the data collection methods. As figure 6 exhibits, most studies have followed the questionnaire surveys and interviews. At the same time, observations have been utilized very rarely.

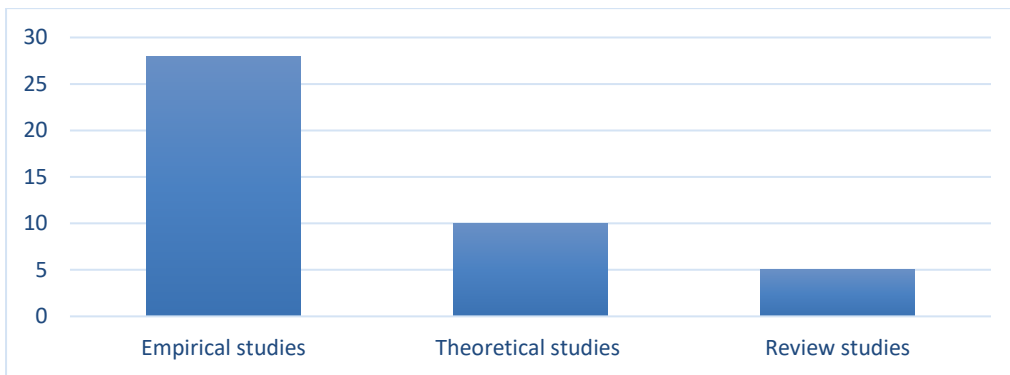


Figure 4: Type of Studies

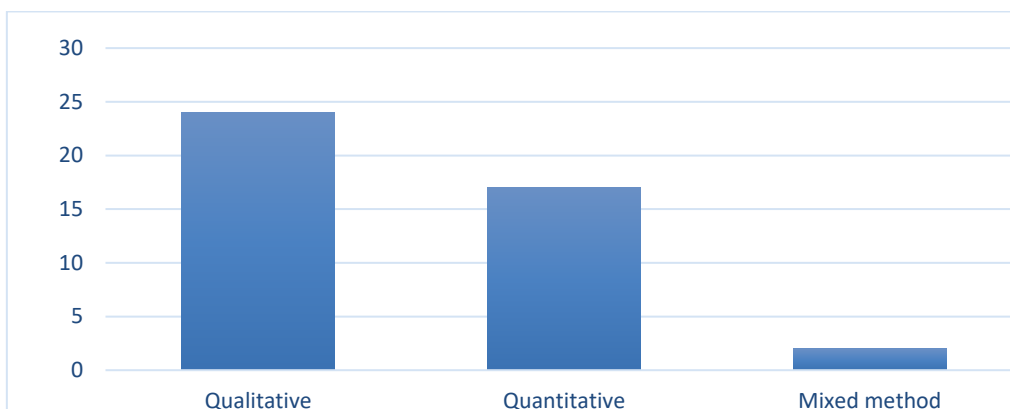


Figure 5: Research Approaches Followed

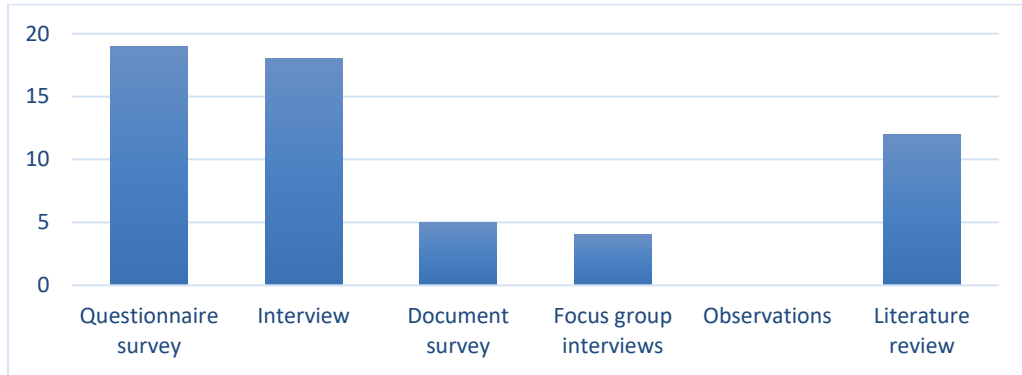


Figure 6: Data Collection Methods

Research Areas in Operational Excellence Body of Knowledge

When analyzing these existing studies, the researchers could identify (1)exploring the factors that affect operational excellence, (2)importance/opportunities of operational excellence, (3)challenges for implementation of operational excellence, (4)comparison and contrast of operational excellence concept with other theories and frameworks (5)introducing approaches for measuring the payback or success of operational excellence strategies, (6)proposing frameworks/models to operational excellence conceptualization and implementation (7)reviewing existing studies on operational excellence, (8)studying success stories of operational excellence and (9) development of psychometric scales to measure the operational excellence construct were identified as the critical research areas/themes in the operational excellence research context. Figure 7 demonstrates the distribution of the research papers (from 2009-2021) across each area.

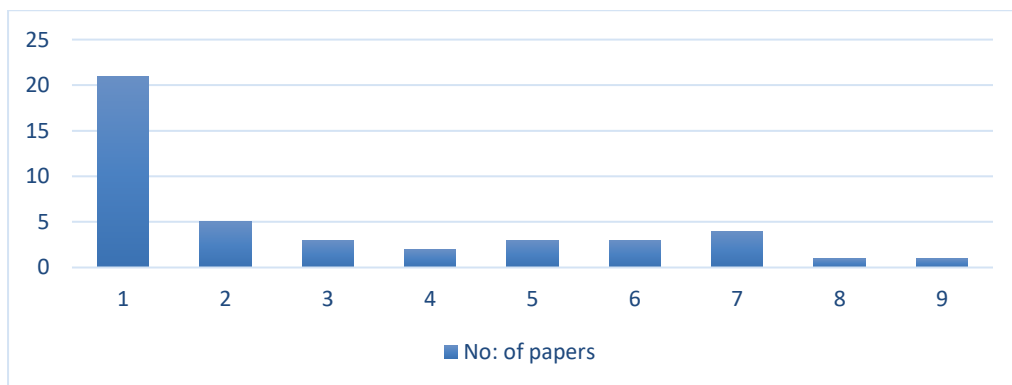


Figure 7: Number of Papers per each Research Area

Figure 7 demonstrates the highest number of publications were available in the research area (1) factors that affect operational excellence. The research areas, (2) importance/opportunities of

operational excellence implementation and (7) reviewing existing studies on operational excellence also showed many publications. In addition, all of the other research areas showed a smaller number of publications.

Theories Applied in Operational Excellence Research Context

Out of 43 papers, only 7 (16 per cent) papers have concerned the theoretical base for conducting the research, and all 36 (84 per cent) papers have not paid any attention to the theoretical base. Scientific management theory, Human relations approach, Transformational leadership style, Cultural Traits Theory, Resource Base Theory, Transformational Leadership Style, Involvement Culture and Competing Value Framework were identified as the frequently used theories in this research context. Out of these theories, the Resource-Based Theory was prominent since it was utilized by most operational excellence researchers (3 papers out of 43).

Knowledge Contributions Made by Existing Studies in Operational Excellence

Table 7 summarizes the knowledge contribution of existing studies on operational excellence.

Table 7: Knowledge Contribution of Existing Studies on Operational Excellence

Paper ID	Contribution of the Study
P1	This paper explored the potential of blockchain technology (BT) to improve the operational excellence in perishable food supply chain (PFSC), (by conducting a case analysis), while generating prescriptive knowledge for better Managerial decision-making across the PFSC during outbreaks.
P2	This study developed a scale for measuring operational excellence in an organization. Additionally, reliability and validity of the developed scale were measured by examining the relationship between Human Resource Practices (HRP) and Operational Excellence (OE).
P3	It explored the possibility to improve the Green Supply Chain Management performance through green operational excellence practices.
P4	It explored the effect of lean implementation on operational excellence of the Malaysian construction industry and found a positive effect of lean on operational excellence.
P5	It developed a conceptual framework to evaluate the mediating effect of Enterprise Risk Management determinants on operational excellence.
P6	It examined the relationship between leadership support and operational excellence in the health care sector and this relationship was confirmed
P7	It proposed a conceptual framework after a systematic review of literature on the term operational excellence

- P8 It explored and confirmed the importance of operational excellence in developing organizational agility capabilities while reinforcing an excellence-oriented culture.
- P9 It explored the factors that affect operational excellence in pharmaceutical industry and confirmed that leadership, strategic planning, communication, financial management, marketing, human resources management and time management affect for operational excellence.
- P10 It explored the transformation of a multinational organization, through the deployment of an operational excellence system. Also, it explained how organizations can move organizational significance through operational excellence.
- P11 It proposed indicators to distinctly identify the payback of operational excellence strategies and initiatives
- P12 It proposed a framework of operational excellence, to facilitate the implementation of operational excellence as a business strategy.
- P13 It identified key components of operational excellence conducting a systematic literature review
- P14 Engaged in a self-assessment on operational excellence implementation in one organization and provided a guidance for operational excellence self-assessment.
- P15 It found a positive correlation of information culture, competitive advantage, and operational excellence on job performance.
- P16 This research identified antecedents and problems and root causes of operational excellence researches through reviewing existing literature.
- P17 It found a positive effect of the internal environmental factors: leadership, organization structure, process management, organizational culture and human resources management on the operational excellence of manufacturing sector in Malaysia.
- P18 It found that cultural traits, leadership styles and commitment to change affect expediate supply chain operational excellence.
- P19 It conceptualized that internal and external environmental factors affect the operational excellence in the Malaysian manufacturing sector.
- P20 To found the effect of strategic leadership on organizational performance and confirmed the positive relationship between operational excellence and organizational performance.
- P21 It found that change management positively relates on operational excellence in the manufacturing companies
- P22 It found that leadership and environmental excellence positively influence on operational excellence.
- P23 It confirmed the positive influence of Human Resources Management for achieving Operational Excellence in Pharmaceutical Industry

- P24 It confirmed the positive relationship between organizational culture and operational excellence of Agrochemical Firms in Nairobi
- P25 It clarified the meaning of operational excellent and identified the Resource Based Theory as a underpinning theory of operational excellence.
- P26 It compared and contrasted the Scientific Management approach with operational excellence.
- P27 It compared Pope Francis' major concerns with operational excellence implications for businesses and organizational managers.
- P28 It developed a conceptual model to explore the relationship between operational excellence, organizational culture and organizational agility
- P29 It developed a conceptual model to investigate the factors that influence the operational excellence of SMEs sectors.
- P30 This research reviewed the literature related to operational excellence in service firms. Moreover, it investigated the factors that affect the operational excellence of service sector.
- P31 It explored challenges related to employee perception and organizational culture to implement operational excellence.
- P32 It investigated critical factors that affect operational excellence of service firms in Jordan.
- P33 It conceptualized the hard and soft factors that influencing operational excellence of SMEs in Malaysia.
- P34 It examined the Toyota Operational Excellence journey, and its success at entering the global marketplace.
- P35 It qualitatively explored the factors that influence on operational excellence
- P36 It explored an approach how domestic pharmaceutical manufacturers in emerging markets can design their individual OE programmes that fits to their specific internal and external requirements.
- P37 It explored how the organizations have perceived operational excellence in Nepal (challenges, opportunities, drivers, perception)
- P38 It found the positive relationship between change management and operational excellence.
- P39 It explored the positive effect of change management on operational excellence moderated by commitment to change
- P40 It highlighted the importance of operational excellence and developed a model on operational excellence implementation.
- P41 It provided a conceptual understanding on the effect of managing organizational change and affective commitment to change on operational excellence.

- P42 To found how effective leadership practices deliver safety performance and operational excellence.
- P43 It proposed a framework to introduce an industrial culture of operational excellence within the service organizations.
-

Gaps and Future Research Directions in Operational Excellence Research Context

The following section explains existing gaps identified by the researchers through reviewing the sample of 43 studies on operational excellence, and they are presented under the following themes.

1. *A significantly less attention on the effect of operational and dynamic capabilities on operational excellence*

Capabilities (capabilities are two-fold as operational and dynamic capabilities) are critical factors that affect operational excellence (BTOES Insight, 2019; Fok-Yew, 2014). Nevertheless, current researchers in operational excellence have given very little attention to the effect of operational and dynamic capabilities on operational excellence. Thus, future researchers can focus on exploring the effect of organizational capabilities on operational excellence.

2. *Theory usage for explaining operational excellence is significantly less*

The application of theoretical perspectives in conducting operational excellence research is significantly less. The Resource-Based Theory received the prominent place since it was utilized by most of the operational excellence researchers (3 papers out of 43). However, the criticism of the RBT is that it is more suitable for a stable business environment instead of a dynamic environment (Teece, 2007), because RBT has given very little attention to environmental dynamism and organizational change. Further, the RBT has given the primary concern for the organization's internal resources and capabilities (ordinary/operational/first-order capabilities), arguing that operational capabilities are the primary for achieving operational excellence (Teece, 2007). Nevertheless, as operational excellence practitioners pointed out, dynamic capabilities are also a critical factor affecting operational excellence (BTOES Insight, 2019; Fok-Yew, 2014). Thus, the Dynamic Capabilities Theory (DCT), which is used as the most popular and effective theory for explaining the dynamic capabilities and sustainable competitive advantages in the organizational setting, also can be concerned as a complementary theory with Resource-Based Theory for explaining the operational excellence.

3. *Operational excellence researchers have not covered some industrial sectors*

Pharmaceuticals, Telecommunication, Galvanizing, Electricals & Electronics, Construction, Petroleum, Agrochemical, Tobacco, Health Care, Energy, Automobile, Food and Hotel are the

industrial sectors addressed by existing studies on operational excellence. Textile and Apparel, Aviation and Airport, Education, Agriculture, Mining, Shipping, Banking and Media are the several industries where operational excellence is essential with environmental pressure. Thus, future researchers on operational excellence can also concern these industries in their research efforts.

4. *Existing operational excellence researches does not cover all the countries and continents*

Asia, Africa, North America and Europe represent these four continents where operational excellence researchers conducted their studies frequently. Nevertheless, operational excellence studies were rarely available in South America, Antarctica, and Australian continents. Thus, future researchers on operational excellence can conduct their researches in these continents also.

5. *Research studies have paid the very least attention to psychometric scale development on operational excellence*

Operational excellence researchers have given very little attention to developing a proper psychometric scale to measure operational excellence. Thus, future research on operational excellence can focus on developing such scales to measure the operational excellence construct more objectively.

6. *Mixed method research approach has been rarely used*

Most of the existing studies in the operational excellence field have adopted quantitative and qualitative approaches. However, only very few studies have adopted the mixed-method approach. Thus, future researchers on operational excellence can conduct their research following the mixed method approach to reveal more insights into this context.

Discussion

The existing studies in the operational excellence context have focused on the areas like: components of operational excellence concept (Muazu & Tasmin, 2019), antecedents of operational excellence (Muazu & Tasmin, 2019), existing models on operational excellence (Aguilera & Ruiz, 2019), underpinning theories of operational excellence (Found et al. 2018) and factors that affect operational excellence (Shehadeh et al. 2016a). Nevertheless, analyzing the profile of the existing studies on operational excellence (in terms of publication years, industrial sectors, geographical areas, and research methods), identifying gaps of operational excellence research contest and pointing out future research directions have not been addressed enough by existing operational excellence studies.

The sample of 43 research papers has been conducted in 13 countries on four continents. Out of the 13 countries, operational excellence researches are more prevalent in the Malaysian context. Also, more operational excellence studies have been conducted in the Asian continent. Electricals & Electronics, Energy and Pharmaceuticals are the most examined industries by operational excellence researchers. As a whole, the operational excellence researchers have addressed both manufacturing and service sectors. Also, these researches have been conducted in small, medium and large-scale multinational companies. Most of the publications in the reviewed sample of studies are empirical studies.

Further, operational excellence researchers have been motivated to conduct qualitative and quantitative approaches over the mixed-method approach. In comparison, most studies have followed the questionnaire surveys and interviews as the data collection methods. At the same time, observations have been utilized very rarely. Journals, conference proceedings and thesis of universities were identified as the main venues of publishing in operational excellence research studies. The research motivation for the operational excellence has increased from 2016 while reporting highest number of papers in 2019.

When analyzing these existing studies, the researchers could identify : (1)exploring the factors that affect operational excellence, (2)importance/opportunities of operational excellence, (3)challenges for the implementation of operational excellence, (4)comparison and contrast of operational excellence concept with other theories and frameworks (5)introducing approaches for measuring the payback or success of operational excellence strategies, (6)proposing frameworks/models to operational excellence conceptualization and implementation (7)reviewing existing studies on operational excellence, (8)studying success stories of operational excellence and (9) development of psychometric scales to measure the operational excellence construct were identified as the vital research areas/themes in the operational excellence research context. Out of these research areas (1), exploring the factors that affect operational excellence has become the most popular research area. Along with these research areas, identification of challenges for operational excellence implementation and existence, identification of best theories to explain operational excellence, introduction of models and frameworks on operational excellence, proposing assessment methods for measuring operational excellence and deciding key determinants of operational excellence can be recognized as the key knowledge contributions of existing operational excellence research studies.

Scientific management theory, Human relations approach, Transformational leadership style, Cultural Traits Theory, Resource Base Theory, Transformational Leadership Style, Involvement Culture and Competing Value Framework were identified as the frequently used theories/frameworks in this research context. Out of these theories, the Resource-Based Theory has been identified as an underpinning theory for operational excellence by Found et al., (2018) through a literature review study.

Identification of research gaps in the operational excellence research context is an uncovered area by review studies on operational excellence. Thus, the researchers identified and grouped those gaps in to themes as, very little attention on the effect of capabilities (operational and dynamic capabilities) on operational excellence, less application of theoretical base for explaining operational excellence, not researched in some industrial sectors, countries and continents, a very least attention on psychometric scale development, and mixed-method research approach.

Conclusion

In the operational excellence field, empirical and conceptual papers abound. However, review papers that systematically explored what exists in the operational excellence body of literature, its research gaps and future research directions are very few (Saeed et al., 2021). Thus, the current study attempted first to examine what exists in the operational excellence body of literature, second to explore the research gaps, and thirdly to identify future research directions in the operational excellence context. For achieving these research objectives, the study systematically reviewed 43 studies on operational excellence from 2009 to 2021. Aligning the research objectives, firstly, the researcher analyzed the profile of the current studies in terms of publication years, industrial sectors, geographical areas, theory usage and research methods. Subsequently, with the support of these profile analysis results and further in-depth analysis, six research gaps in operational excellence studies were found. The present SLR is beneficial for academics, researchers, practitioners, and policymakers since it explains the current knowledge and gaps in operational excellence research. Significantly, based on the analytically presented research gaps and future research directions, they can develop studies of high originality.

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