Operational Excellence: Concept Review and Meaning Restructuration.

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Abstract

Operational Excellence is highly essential for the growth of the organizations and all sizes industries, due to its characteristics of search of quality, efficiency and effectiveness of enterprises. In this article, it has been developed a work of revision of Operational Excellence (OE) concept. Since there is not a clear and precise definition of this term, the main objective of this research is to perform an analysis of the current literature of OE model, for the formulation of a formal concept through a consistent interpretation. This will help is us to improve the implementation of OE in different companies. The used concepts by the main authors were analyzed in a compendium of 122 documents covered from the year 1993 – 2018. The articles were selected using the keyword Operational Excellence in the databases that appears in *Scopus*, *ScienceDirect* and *Web of Science*. Subsequently, 54 of the 122 articles were worked to do a population study and this was the result. In these articles, it was searched the comparison of theoretical proposals and the gaps confrontations that are identified for redefining the concept already mentioned.
Keywords: *Operational Excellence*, Quality, Effectiveness, Efficiency and Productivity

1. Introduction

Operational Excellence is the enablers development to generate competitive benefits in a dynamic environment based in an organizational resources (adaptability). The composition and expansion of enablers in the basis for continuous improvement, change and optimization of commercial processes. Therefore, "OE is 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 R, Sauter 2008). "Excellence in operations is about how the operations side of the business supports business growth as a strategic part of business." (Duggan KJ, 2011). According to Dalluege, an organization only route towards excellence is to use stakeholder needs as input for the development and assessment of a strategy and its respective guidelines. Furthermore, organizations should strive to continuously fulfil stakeholder expectations, (Dalluege C. Exzellenz 2012). Today's competitive and globalized market conditions force organizations not only to react reactively to survive prevailing challenges, but also to seek long-term success, (Jovane et al., 2008), by achieving excellence in their business. If operational excellence is practiced, firms aim to have lean and mean processes. The result delivers value to customers at low prices and convenience. Firms applying customer intimacy focus on knowing their customers and building close relationships with them (Langerak et al., 2003). One way to gain operational excellence is to reduce the waste both in the value chain activities as well as in the linkages among them. Research indicates that wasted time compromises about 60 percent of total operational time in most businesses (Farhad & Deba 2005). The research focuses on publications generated from 1993 to 2018. The search process is an iterative process carried out by placing the keywords "operational excellence", "performance excellence", "operations excellence", "business excellence", "enterprise excellence ". The sequence of the research follows the following parameters: with an agglomeration of 122 articles, a population study is carried out with a result of 54 articles, which in turn were ordered from highest to lowest according to their impact factor, an analysis of the collected information was made, the most relevant information was concentrated in 4 tables with key words and their respective number of occurrences, this with the objective of identifying the characteristics, tools, methodologies and measurable most significantly. Finally define overall Operational Excellence. The scope of our research is to be able to clearly and precisely define the concept of Operational Excellence for a better understanding of the term.

2. Research Methodology

Since there are several factors that may obstruct the study of a total population, as a first step, it proceeds to select a representative sample with which provides very close results to those that would be obtained in a study of the total population. The necessary data to perform the sample can be found in table 1. Figure 1 Normal distribution.

According to the formula:

$$n = \frac{NZ^2pq}{l^2(N-1) + Z^2pq}$$

Where:
n = sample size
N = segmented total population
Z = trust level
p = probability that something happens
q = (1-p) = probability that is doesn't happen
l = max error allowed

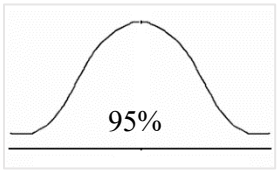

Figure. 1 Normal distribution

Table 1. Data to obtain a population sample for a statistical confidence of 95%

N	122
n	54
Z	1.96
P	50%
Q	50%
l	10%

As a second step, since the result of the sample (54 articles) was obtained, information was recorded, such as: journal name, number of articles per journal, impact factor of said journal, and the database where it was obtained from. The information is ordered according to its impact factor, as shown in Table 2.

Table 2. Article characteristics for this work

Name of the Journal	Article	Impact factor	Data base
Academy of Management Journal	1	8.548	Web of Science
Journal of Operations Management	1	5.739	Science Direct
International Journal of Research in Marketing	1	2.528	Science Direct
International Journal of Production Economics	4	2.401	Science Direct
Sloan Management Review	1	1.822	GA
Journal of Manufacturing Systems	1	1.548	Science Direct
International Journal of project management	1	1.463	Science Direct

International Journal of Production Research	1	1.432	EBSChost
Human Resource Management	1	1.313	GA
European Management Journal	1	1.257	Science Direct
Business Horizons	1	1.24	Science Direct
Journal of Marketing Theory and Practice	1	1.056	EBSChost
International Journal of Advanced M.T.	1	0.994	EBSChost
Multinational Business Review	1	0.913	ProQuest Central
Public Relations Review.	1	0.809	Science Direct
Journal of Loss Prevention in the Process Industries	1	0.808	Scopus
Quality Engineering	1	0.804	EBSChost
International Journal of Lean Six Sigma	4	0.802	ProQuest Central
Learned Publishing	1	0.702	EBSChost
Procedia CIRP	4	0.668	Science Direct
Total Quality Management & Business Excellence	2	0.634	EBSChost
Total Quality Management & Business	1	0.634	EBSChost
Procedia Economics and Finance	3	0.400	Science Direct
Operations Management Research	1	0.350	Springer link
Computer-Aided Design & Applications	1	0.316	EBSChost
Harvard business review OnePoint	1	0.305	GA
Harvard Business Review	3	0.305	GA
Procedia Engineering	1	0.282	Science Direct
IFAC Proceedings Volumes	1	0.260	Science Direct
IFAC-Papers On Line	1	0.260	Science Direct
Quality Progress	3	0.213	EBSChost
Procedia Manufacturing	1	0.201	Science Direct
Amfiteatru Economic	1	0.18	EBSChost

Revista Latinoamericana de Administración	1	0.178	GA
Procedia- Social and Behavioral Sciences	4	0.158	Science Direct

With the information gathered up until the second step, we can see that the impact factor is given in a range of 0.158 to 8.548, so the third step will be to compare the total number of journals collected with the total of the journals that are in *Incites Journal Citation Reports* with the same impact factor range, as shown in figure 2. In parallel, the percentage of journals found in *Incites Journal Citation Reports* was analyzed with an impact factor of 0.158-8.548 compared to the total of journals with an impact factor different from our range, as shown in figure 3.

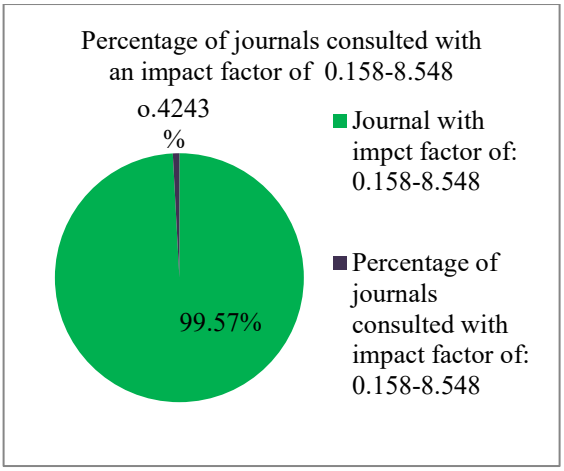

Figure 2. Journals with impact factor of 0.158-8.548

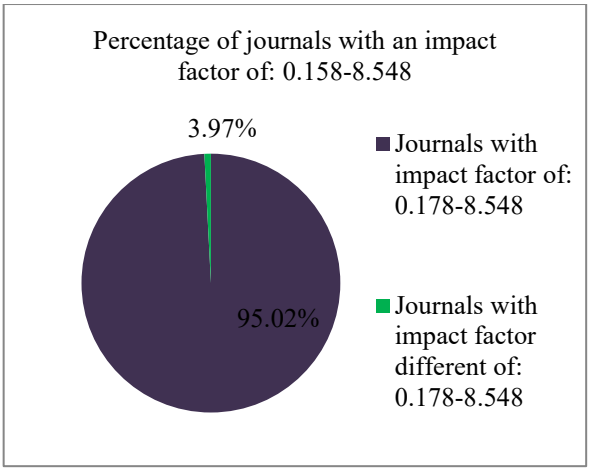

Figure3. JCR journals with IF of 0.158-8.548

3. Literature Review

From the summary of 54 articles, we proceeded to the information analysis, first identifying what the postulate of each author is, and then a filtering was performed with the most significant words and their number of occurrences, which were concentrated in 4 tables respectively, as shown below:

Table 3. Improvement process

Word	Number of occurrences	Word	Number of occurrences
Improve and control the operations	2	Flows to implementation	1
Finding the organizational needs	2	Assessing the effectiveness of the works for bringing improvement	1
Making a process lean	2	Each employee can see the flow of value to the customer	1
Optimize business processes	1	Fix that flow before it breaks down	1
Prioritizing processes	1	Diagnostic	1
Creating process models	1	Design and implementation	1
Performing root cause analysis	1	Fast and timely operations or services	1
Assembling a process improvement team	1	Reliable products or service	1

Addressing and re-measuring	1	Manageable bargains	1
Knowing the operation	1	Cultural enablers	1
Emphasis on training	1	Continuous process improvement	1
Realizing that people are most important assets	1	Enterprise alignments and results	1
Fulfilling orders of the customers timely	1	Everyone within the organization knows the 'why' behind the how and the what	1
Improving customer service	1	Low cost and fast response to customer demand	1
Removing barriers to success	1	A long-term focus on innovation in products	1
Reviewing process	1	Processes and business models	1
Analyze	1	Management systems	1
Searching alternative ways	1	Strategic flexibility	1
Defining a model and practicing it	1	Communicate requirements	1
Assess requirements	1		

Table 4. Quality Initiatives

Quality initiative	Number of occurrences	Quality initiative	Number of occurrences
Efficiency	5	Information technologies	1
Organizational culture	4	To realize effective and efficient core processes in the value creation chain	1
Respect for people	4	Lean management	1
Elimination of non-value-added activities	3	Effectiveness of processes	1
Product quality	2	Strategic planning	1
Reliability	2	Organizations strategic fit	1
Customer intimacy	2	Bifocal leadership	1
strategic performance	1	Innovation	1
Benchmarking	1	Organizational fitness	1
Speedy delivery	1	Lean processes	1
Participation of suppliers, customers and internal constituents	1	Lean production	1
Internal environmental strength	1	Heterogeneous resources	1
Safe operation	1	Sustainable competitive advantage	1
Enterprise alignment	1	Process improvements	1

Table 5. Improvement tools

Improvement tool	Number of occurrences	Improvement tool	Number of occurrences

Lean manufacturing	8	DMAIC	1
Six Sigma	5	Performance management	1
Lean Six Sigma	5	SMED	1
Leadership	3	Flow and pull	1
TQM	3	Management at a strategic level	1
E-Business	1	Technology management	1
TPS	1	Management systems	1
Continuous improvement	1		

Table 6. Quality measurement

Quality measurement	Number of occurrences
Data envelopment analysis	1
Efficiency metric	1
Measuring how operations can and should constantly adapt into the new and challenging environment	1

Based on the extract from lecture in tables 3,4,5 and 6, its been analyzed the information to get the key points for the model in figure 4, this is related with the objective to evolve 4 lines to fundamentals for the operational excellence. As a result, from our investigation we conclude our figure 3 where principals components from operational excellence for a better understanding of the concept.

Figure 4. Components of operational excellence

In order to have a full understanding of the meaning of Operational Excellence, the information that encompasses the term, its approach and its effects was concentrated, with the aim of being more detailed to facilitate understanding and open the panorama.

Table 7. Operational Excellence Program

Operational Excellence Program	
Theory	High business strategy, aimed at improving the efficiency and effectiveness of our processes, with a punctual approach to the culture of the people
Application guidelines	1. Optimize business process 2. Control the operations 3. Making a process lean 4. Strategic flexibility 5. Process improvement teams 6. Everyone knows the why behind the how and the what 7. Fast response to customer demand 8. Reliable products or service
Focus	Complete results as whole organization in every level, focus at process, focus at client
Assumptions	Using different tools from quality management, like: Lean manufacturing, six sigma, leadership; organization will operate with the highest levels, where, employees could see the client-flow and getting to know the process from "why" and "how"
Primary effect	Optimization and control process
Secondary effects	1. Effective and efficient processes 2. Organizational culture 3. Customer intimacy 4. Elimination of non-value-added activities 5. Lean processes 6. Strategic Planning
Criticisms	The model tends to be little accessible for small organizations, sometimes in a general way it is applied incorrectly

4. Conclusion

From the review of these articles we can conclude that Operational Excellence is not just another theoretical concept; It is a philosophy that aims to achieve a better performance and end in commercial success. Operational excellence may seem a theoretical concept, new and relatively sophisticated, however, when working with the documents we reaffirm that it exceeds the common techniques of Lean M, Six Sigma because it integrates concepts that are not used by these techniques mentioned above. Operational excellence involves the organizational culture of the company, where employees have the ability to identify problems and solve them analytically.

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