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THE RELATIONS BETWEEN SUSTAINABILITY AND QUALITY IN AN ORGANIZATIONAL CONTEXT

Postgraduate Program in Sustainability

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SCHEDULE

- » INTRODUCTION
- » LITERATURE REVIEW
- » COMPARATIVE ANALYSIS
- » CONCLUSIONS

INTRODUCTION



- » Importance and benefits of synergy between areas in an organizational contexto.
- » Study proposal:

“Analyze the relationship of the three dimensions of sustainability with the occurrence of nonconformities.”

LITERATURE REVIEW

1. SUSTAINABILITY

- » Silent Spring - Rachel Carson's (1907-1964);
- » “Sustainable Development” (1979)- Brundtland Report;
- » Triple Bottom Line (TBL) – (2001) John Elkington;
- » “Sustainable Business”: the business that is guided by the triple bottom line.

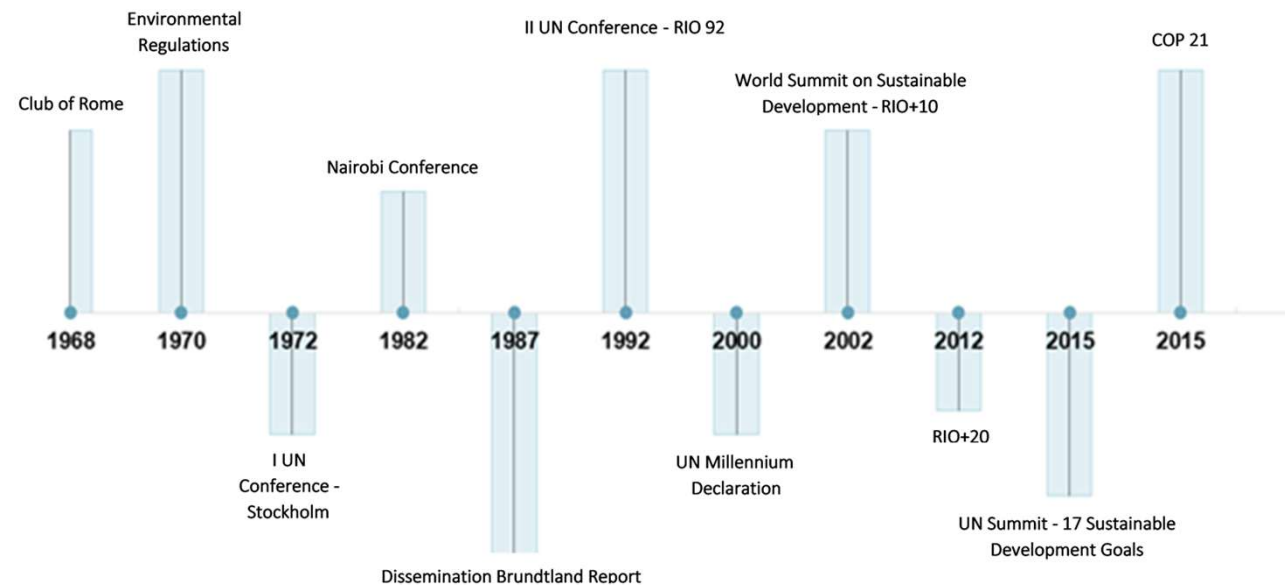


Figure 1- Timeline: milestones of discussions about sustainability

Source: Prepared by the authors (2021)

LITERATURE REVIEW

1. SUSTAINABILITY

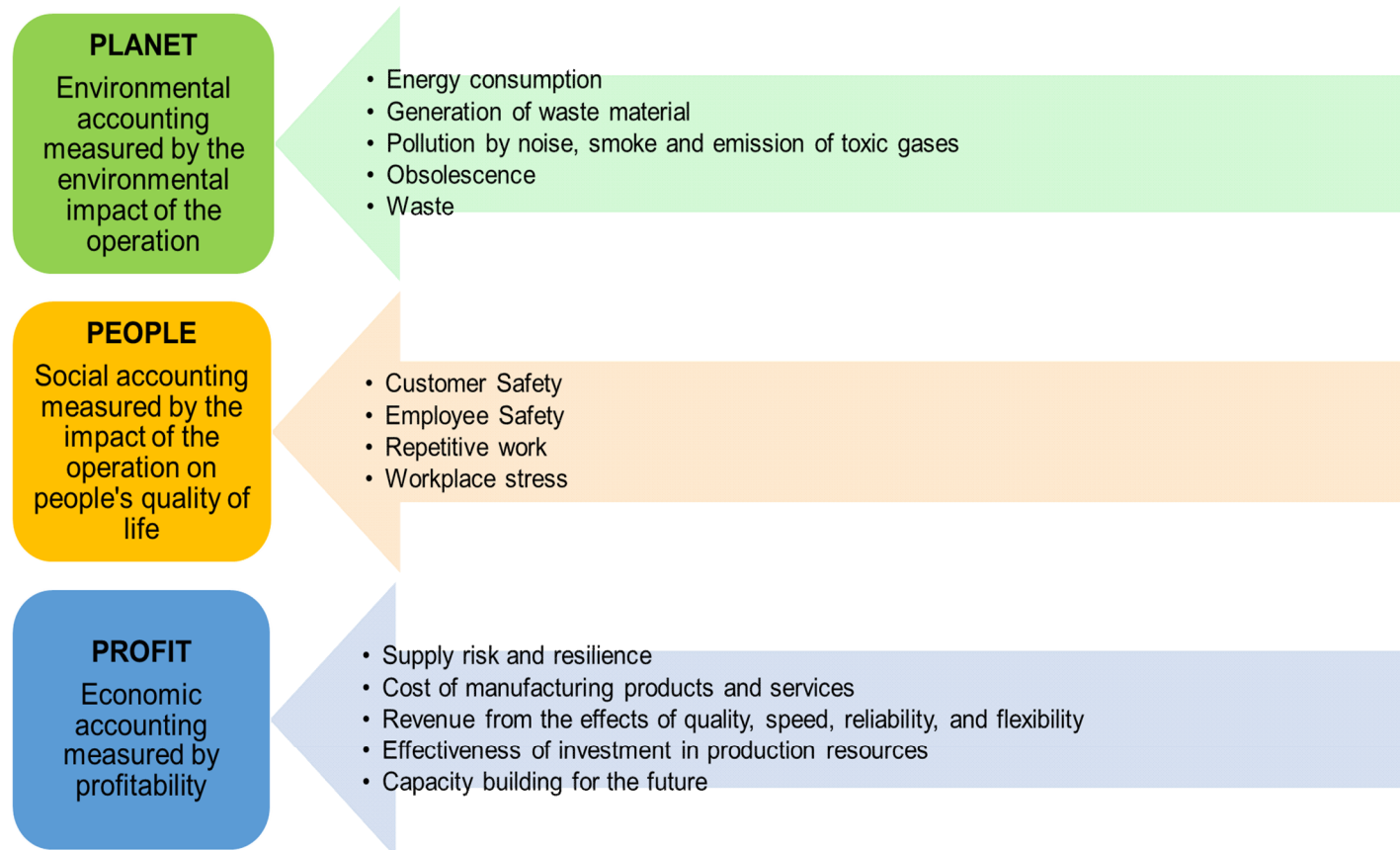


Figure 2 - Ways in which production can impact each element of the triple bottom line

Source: Adapted from Slack, Jones, and Johnston (2016, p. 39)

LITERATURE REVIEW



2. QUALITY

Table 1- Quality Dimensions

NUMBER	DIMENSION	MEANING
1	Performance	Basic operational characteristics
2	Features	Secondary operational characteristics, additional functions
3	Time	Standby time, cycle time, time to complete a service
4	Reliability	Period of operation without failure
5	Durability	Extent of use before replacement is preferable to repair
6	Uniformity	Low variability among the results of a process
7	Consistency	Agreement in documentation, predictions, or standards
8	Maintenance	Problem solving and complaints
9	Aesthetics	Related to sense perception. Such as color, fragrance and fit
10	Personal Interface	Punctuality, courtesy and professionalism
11	Flexibility	Willingness to adapt, customize, or accommodate change
12	Innocuousness	Relative to health, safety, or the environment
13	Perceived quality	Inferences about other dimensions; reputation
14	Usability	Relative to logical and natural use; ergonomics

Source: Langley et al. (2011, p. 263)

- » Definition of Quality: ***"conformity consistent with customer expectations"***.
- » "Quality Requirements";
- » "Quality Management";
- » "Productivity" as a measure to indicate the success of an operation.

LITERATURE REVIEW

2. QUALITY

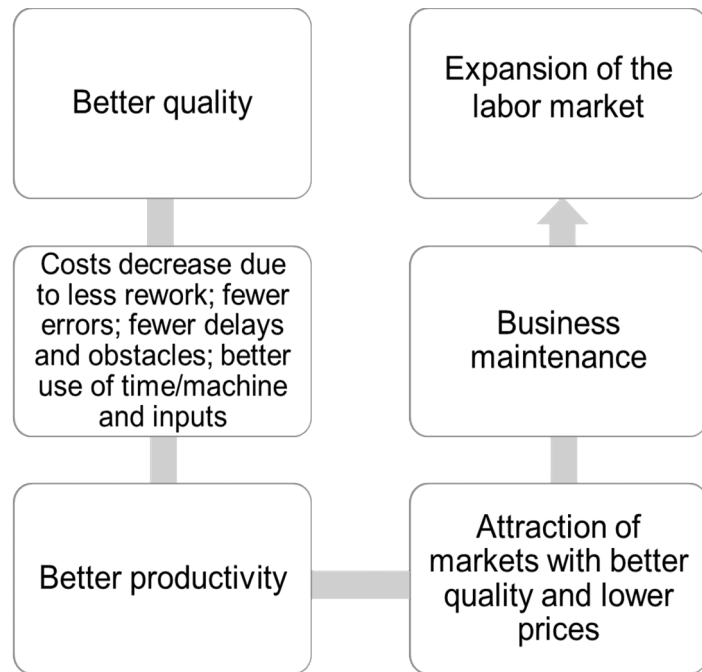


Figure 4- Relation between quality x productivity: chain reaction

Source: Adapted from Deming (1990)

Table 2 - Aspects of the presence or absence of quality

POSITIVE ASPECTS QUALITY ASSURED	NEGATIVE ASPECTS LACK OF QUALITY
Internal and external customer satisfaction	Complaints
Increase in productivity	Waste, rework and scrap
Cost preservation	Strong impact on costs
Business maintenance	Unstable demand and perception of poor quality
Increased reliability	Product returns and defective products
Protection of human safety and the environment	Unsafe product and potential harm to the environment
Expansion of the labor market	Loss of customers

Source: Adapted from Deming (1990) and Slack, Jones, and Johnston (2016)

COMPARATIVE ANALYSIS

Table 3 – Example of Nonconformities x parameters matrix classification

TBL Dimension	Sustainability parameters	Example of Non-conformities sensitized
ENVIRONMENTAL	Energy consumption	System operating outside specification
	Generation of waste material	Scrap material
	Pollution by noise, smoke and emission of toxic gases	Absence of maintenance and calibration of machinery
	Obsolescence	Purchase and storage of surplus raw material
	Waste	Leaking product
SOCIAL	Customer safety	Recall - defective products or services by the supplier.
	Employee safety	Personal protective equipment not used or incorrectly used
	Repetitive work	Work instructions with insufficient guidance
	Workplace stress	Non-functional organizational policies
ECONOMIC	Supply risk and resiliency	Risk management not practiced in supply chain management
	Cost of manufacturing products and services	Unplanned labor and material costs for performing rework due to detected non-conformities
	Revenue from the effects of quality, speed, reliability, and flexibility	Occurrence of nonconformities impacts revenue due to delivery delays and quality issues
	Effectiveness of investment in production resources	The occurrence of non-conformities implies additional costs for not having produced correctly the first time. Costs that could be directed towards investment in production resources, such as human capital, technology, research and development, equipment.
	Capacity building for the future	The time taken to deal with non-compliances could be directed towards training and development of technical competences and professional skills.


Source: Adapted from Slack, Jones, and Johnston (2016)

CONCLUSIONS

- » **Productivity** of the organization is affected by each occurrence of nonconformity.
- » It is observed that in most organizations, the **economic aspect predominates** in decision-making in the face of numerous issues.
- » The three dimensions of sustainability (TBL) as a **criterium for dealing with nonconformities** also reflects the opportunity to disseminate the environmental and social aspects.
- » Promoting **interdisciplinarity** between two areas: the synergy between the two areas can bring significant gains.
- » The importance of **preventive actions** in order to anticipate the occurrence of non-conformities and, above all, the importance of **quality-oriented planning**.

Thank you!

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