



The Continuous Improvement Practices in the Puerto Rican Service Industry Formed Through Mixed Methods

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INTRODUCTION

The Service Industry is increasing in Puerto Rico based on the Government data. Therefore, this research has the purpose of identifying how the companies in this industry are applying Continuous Improvement (CI). As additional information, it was researched which laws are positively and negatively affecting this industry. The **methodology** applied for this investigation was Mixed Methods with a Qualitative Phase and then a Quantitative Phase.

OBJECTIVES

Document the following topics:

- CI Methodologies applied
- Identify CI Tools applied
- Benefits for companies
- Barriers faced during the implementation
- Laws benefiting and affecting negatively to their development

BACKGROUND

Puerto Rico has a historic problem with the administration of its government which has led to a massive public debt.

Employment in the Service Industry in PR is expected to increase by **12.73%** from 2012-2022 based on the projections of the Department of Labor of PR (Soto Pérez et.al, 2014).

Benefits of CI practices includes (Bedgood, 2017):

- Increased Income
- Reduced Expenses
- Higher Employee Morale
- Increase Productivity

The barriers faced when implementing CI practices are (Redman et al., 1995):

- Additional Bureaucratic Processes
- Resistance to Change by employees and managers from multiple levels
- Lack of Funds for necessary Investment

QUALITATIVE PHASE

The main goal of this phase was to perform interviews regarding the application of CI in companies within the service industry and about the Economy of PR with economists.

Five interviews to companies were conducted with the main information gathering being the following:

Small Business (1-24 employees) - Large business (25 or more)

Classification	Small Business	Large Business
CI Application	- No CI Culture - Vague Process Reengineering	- ISO 9001 Certificated - Process Reengineering - Lean - Six Sigma - Vague Kaizen Implementation
Tools	- Verbal Voice of the Customer - No Official 5s Implementation - Focal Groups	- No Official 5s Implementation - Statistical Tools - Waste Analysis - Employee's version of Kanban - Root Cause Analysis - Lean Tools
Benefits	- Process Simplification - Task Time Reduction - Customer Loyalty	- Documentation Improvement - Task Time Reduction - Minimizing Accidents inside the workplace - Reduction of Waste Activities
Barriers	- No structured business plan - Funds for Investment - Time to dedicate to Improvement Projects	- Employee Resistance to Change - Communication - Employees doesn't recognize CI terminologies

Two well-known Puerto Rican economists were interviewed regarding the Island's economy. His conclusions were:

- Puerto Rico has a historic problem with its government administration leading it into amassing a debt based on credit for operational costs.
- Emigration is a barrier but also an opportunity to export products and services out of the island's market.
- The Private Sector is key to stimulate Puerto Rico's economy.

Laws that benefit

- Act 20 of 2012
- Act 22 of 2012
- Act 73 of 2008
- Act 46 of 2016

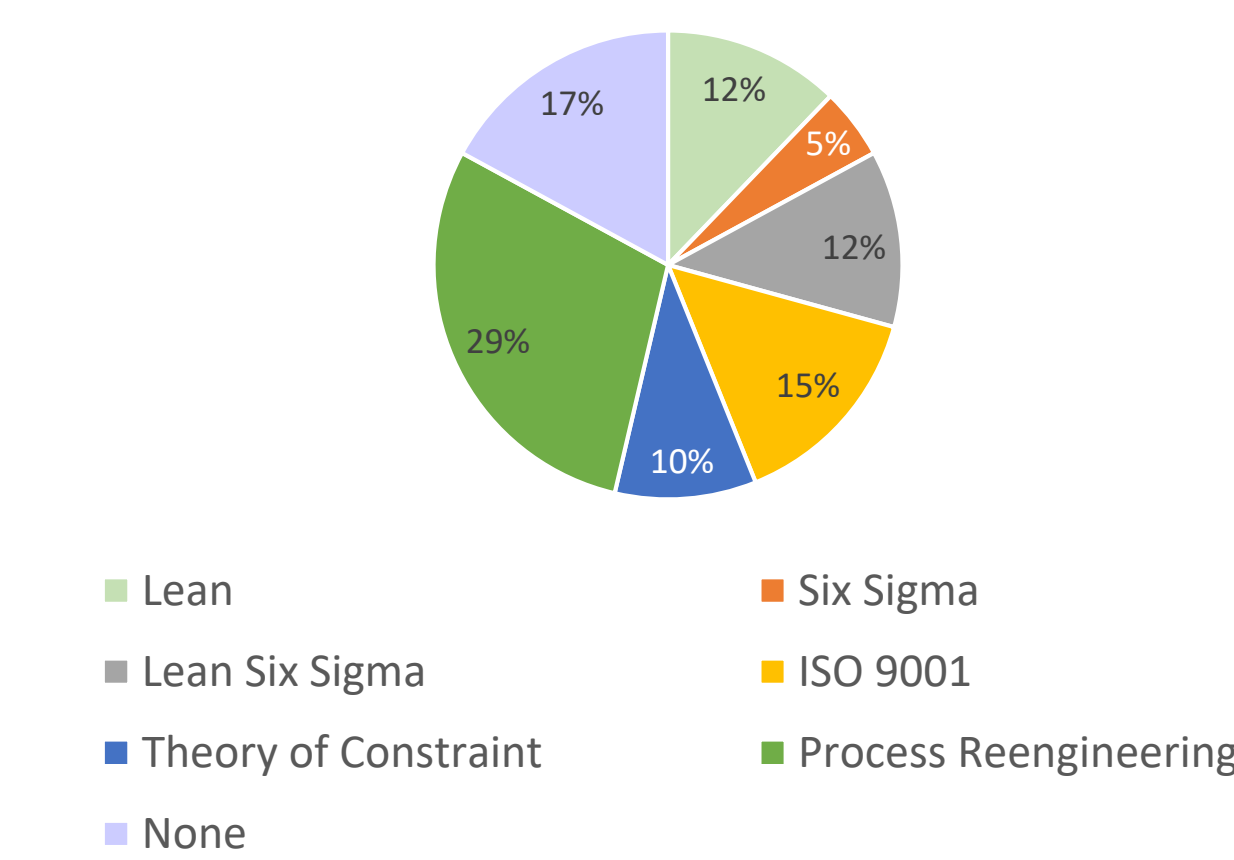
Laws that negatively affect

- Municipal taxes on Inventory
- Sales Tax
- Federal Contribute Labor Reform

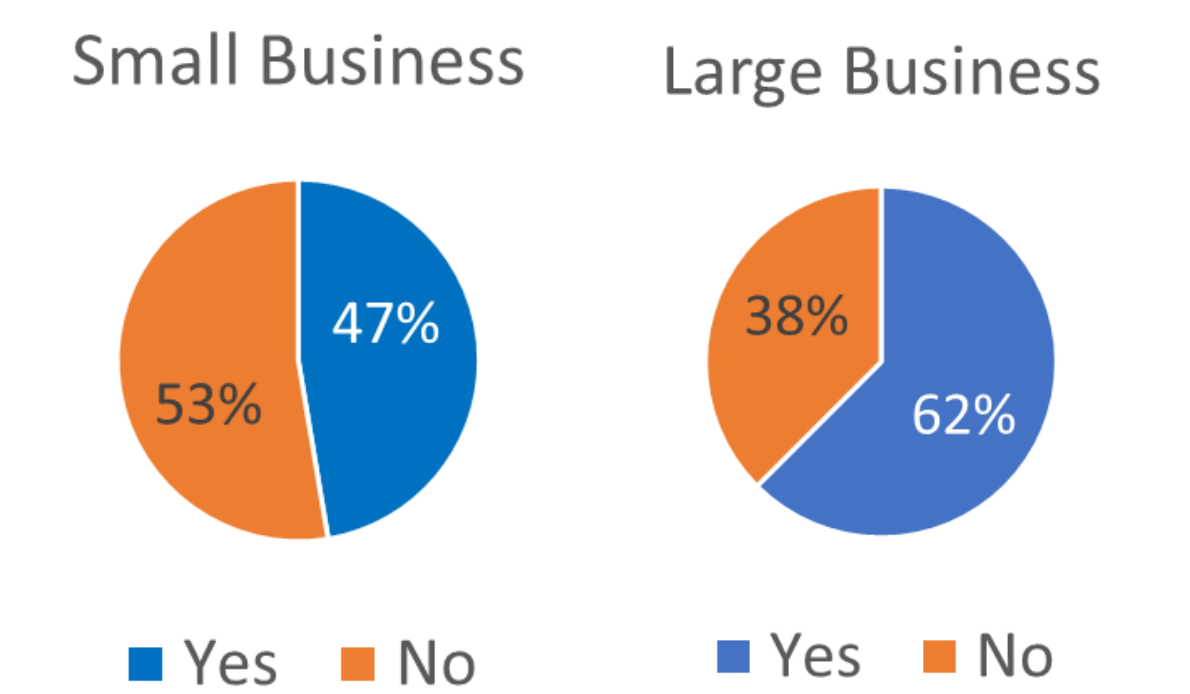
QUANTITATIVE PHASE

Response Rate: 17.22% Sample: 27

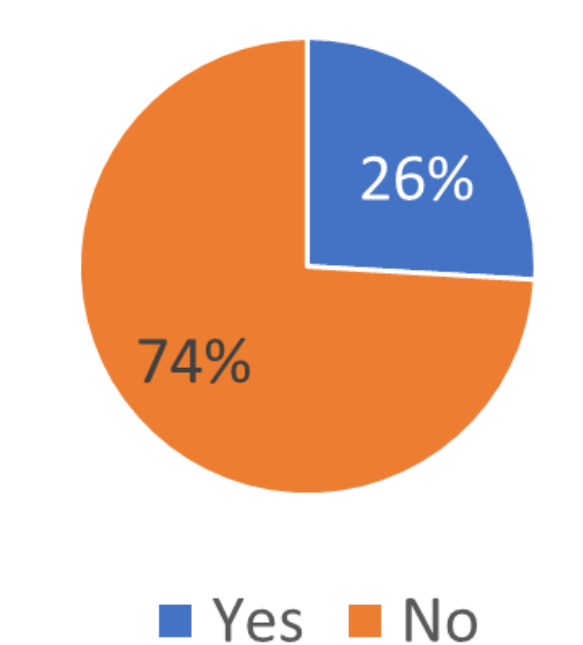
Methodologies Applied by the Sample



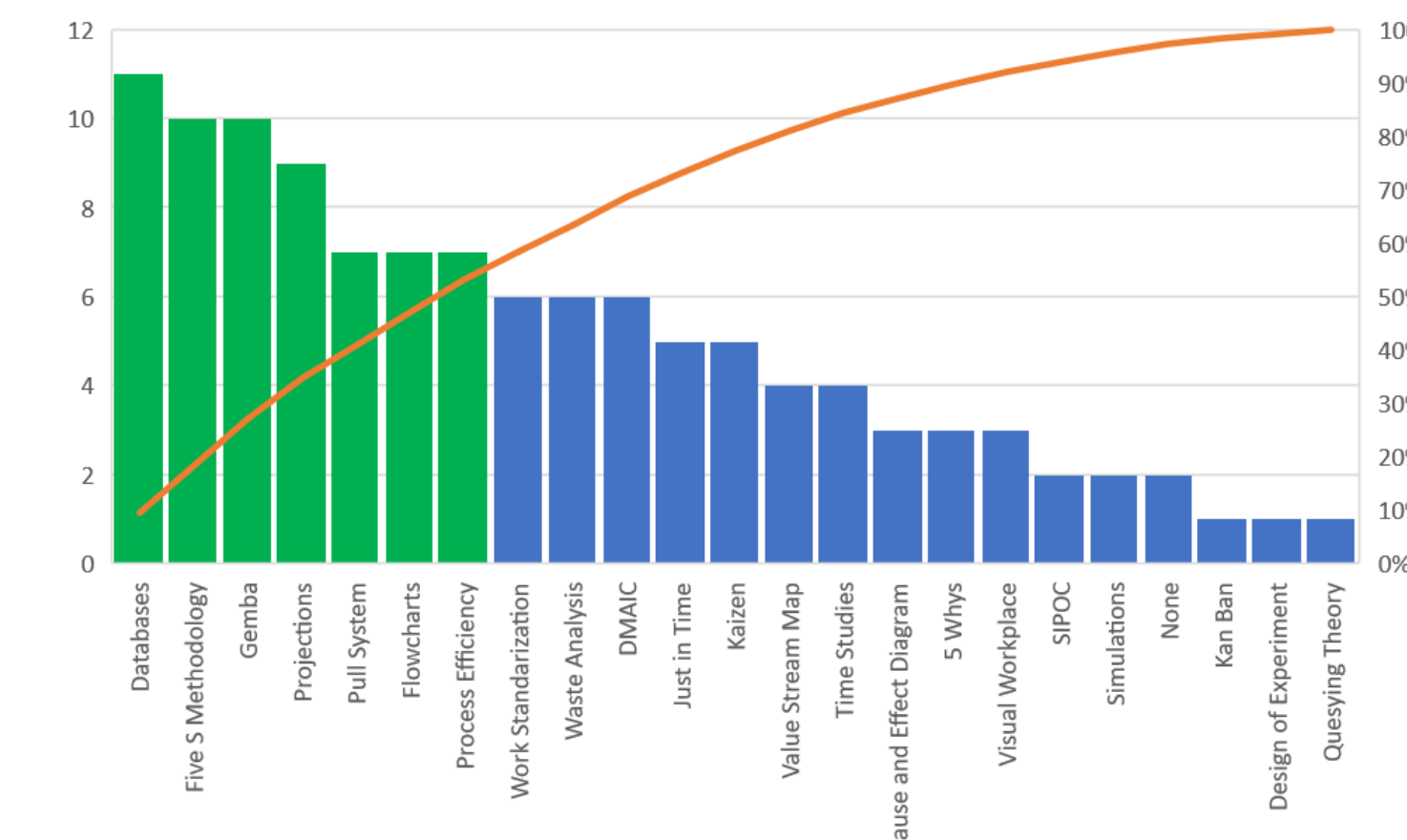
Knowledge of Continuous Improvement from the sample



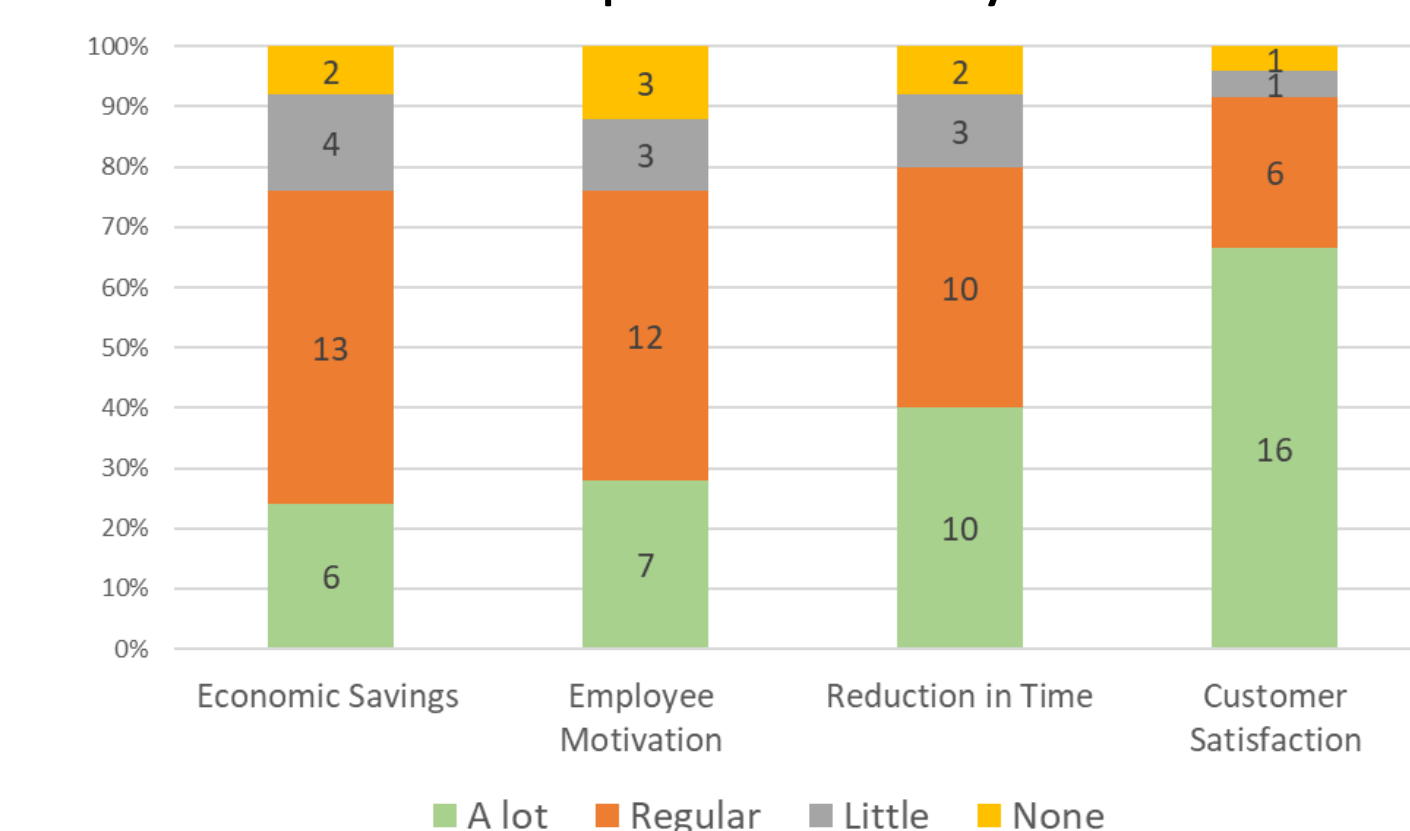
Incentives to employees for contribution in the improvement



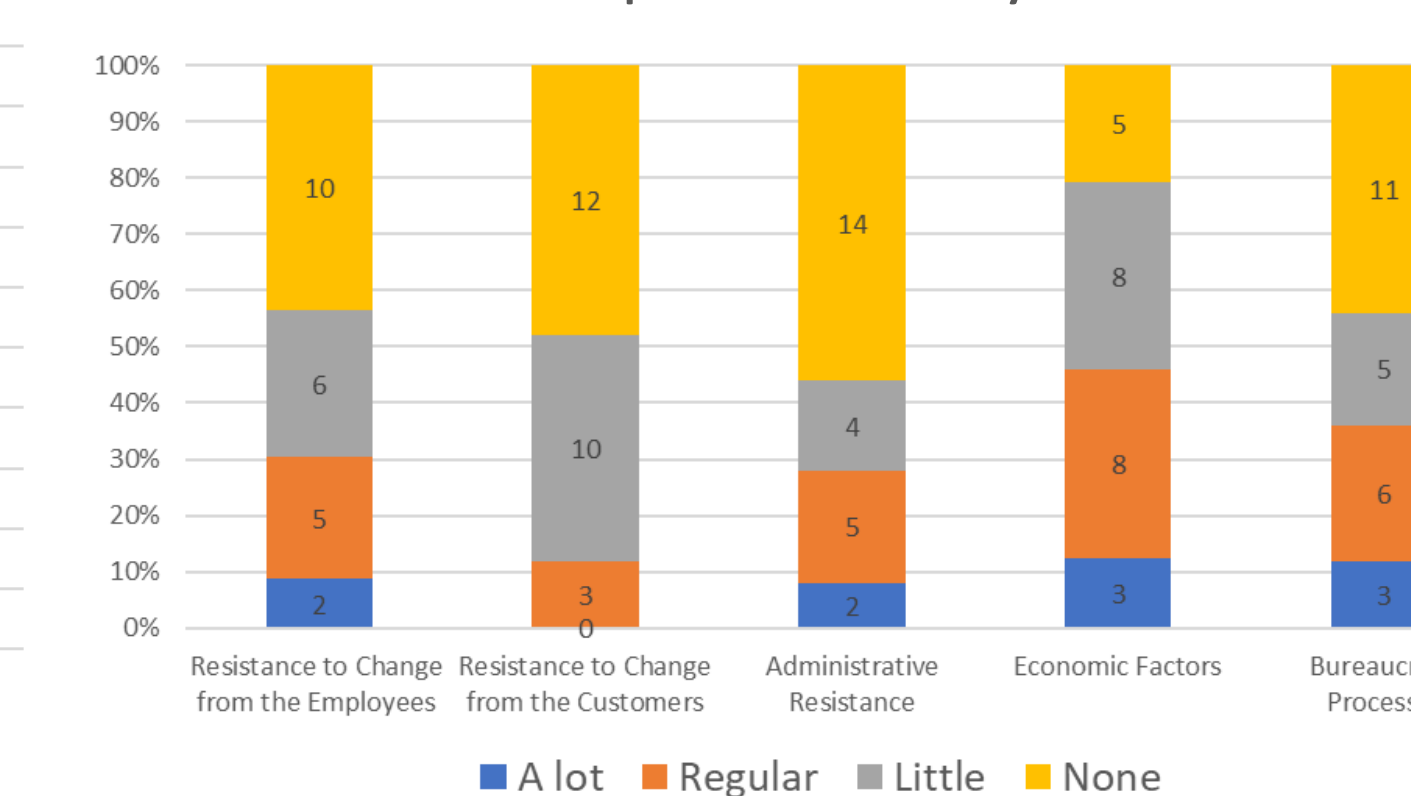
Pareto of the Tools applied in the Sample



Classifications of the Benefits in the companies surveyed



Classification of the Barriers in the companies surveyed



Laws (Affects)	
Positively	Negatively
Act 135	Sales Tax (IVU)
Equal Employment Opportunity Act	Municipal Tax on Inventory

The laws mentioned before are the ones with more impact

CONCLUSION

Based on the sample obtained the 53% of the small business sampled have no knowledge about what is Continuous Improvement Culture. However, the large ones have more knowledge in Continuous Improvement Culture (62%) and the quality tools that are used. According to the survey results and the interviews the application of these tools not necessarily were appropriate.

Finally, we note that Puerto Rico has a great opportunity to educate the service business sector in continuous process improvement culture and their tools. With that application is expect a higher level of services, reduce operating costs, employees more motivated and customer more satisfied.