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The Study on Total Quality Management in Sri Balaji Casting Pvt. Ltd

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ABSTRACT

Total Quality Management (TQM) has emerged as a crucial framework for enhancing efficiency, productivity, and quality across various industries. In the casting sector, where precision, consistency, and reliability are paramount, TQM principles offer a systematic approach to optimize processes and meet customer expectations. This abstract explores the application of TQM in casting, focusing on its principles, methodologies, and benefits. Through a comprehensive review of literature and case studies, it delves into how TQM practices such as continuous improvement, customer focus, employee empowerment, and process optimization can revolutionize casting operations, leading to higher product quality, reduced defects, and increased competitiveness in the global market. Additionally, the abstract highlights challenges and potential areas for future research to further enhance TQM implementation in casting industries.

KEY WORD: Quality Management, customer satisfied, quality sector

INTRODUCTION OF STUDY:

In the dynamic landscape of manufacturing, the pursuit of excellence in quality and efficiency is a constant endeavor. For companies engaged in producing Original Equipment Manufacturer (OEM) parts for esteemed brands like Royal Enfield and Ashok Leyland, ensuring precision, reliability, and customer satisfaction is paramount. Total Quality Management (TQM) emerges as a strategic imperative, offering a comprehensive framework to streamline operations, optimize processes, and uphold the highest standards of quality.

This introduction sets the stage for exploring the application of TQM in a manufacturing context, focusing specifically on companies involved in producing OEM parts for renowned automotive brands such as Royal Enfield and Ashok Leyland. These companies operate within a competitive ecosystem where adherence to stringent quality standards is not just a prerequisite but a competitive advantage. By embracing TQM principles, they can systematically enhance their production processes, minimize defects, and exceed customer expectations.

OBJECTIVE OF STUDY:

- To identify strengths and weaknesses in the company's quality control processes.
- To understand the factors influencing customer satisfaction and perceptions of product quality.
- To evaluate employee engagement and involvement in quality improvement efforts.
- To analyse the effectiveness of supplier quality management strategies in ensuring product quality.

SCOPE OF STUDY:

- Examination of current quality management practices within the aluminium casting company.
- Analysis of the effectiveness of existing quality control measures and processes.
- Exploration of quality management tools and techniques used in the aluminium casting industry.

NEED OF STUDY:

- Ensuring high-quality products is crucial for customer satisfaction and retention. By studying TQM, the company can identify areas for improvement in its processes to enhance product quality.

- TQM principles often lead to decreased waste, rework, and defects, resulting in cost savings for the company. Understanding and implementing TQM can help the company optimize its resources and reduce expenses.
- Quality products lead to satisfied customers who are more likely to repeat purchases and recommend the company to others. By focusing on TQM, the company can meet or exceed customer expectations, leading to higher levels of satisfaction and loyalty.
- TQM emphasizes continuous improvement and innovation. Studying TQM principles enables the company to foster a culture of continuous learning and development, driving ongoing improvement in processes and products.

REVIEW OF LITERATURE;

(Ashley, 2008) Quality from this producer-oriented perspective was defined as features of a service or good corresponding to certain predetermined description of service or good to be produced. In this sense, quality was considered an objective concept as the quality was judged divisions, which from the worker's perspective is the third-party assessment. It was also a static view in which technical conformance was emphasized (Ashley, 2008)

According to Ali (2008), TQM is an integrated set of practices and management philosophy that emphasizes meeting customers' requirements, long-range thinking, continuous improvement, reducing work, improving employees' involvement, process design, teamwork, and competitive benchmarking (Osman, and Ali, 2009)

Kurt and Zahir (2015) investigated the relationship between TQM, cost leadership strategy, and financial performance. Their results suggest that there is a relationship between TQM practices and financial performance. Other studies (e.g., Soltani et al., 2010; Bayati, 2007; Salaheddin, 2009) investigated the effect of incompatibility of orientation of middle and senior managers on TQM practices.

Akgün, et al. (2013) investigated the relationship between TQM and financial performance in Turkish firms with business innovativeness and organizational learning capability mediating the relationship between the two constructs. Their results suggest that the relationship between TQM and financial performance is mediated by business innovativeness and organizational learning capability

Akgün, et al. (2013) investigated the relationship between TQM and financial performance in Turkish firms with business innovativeness and organizational learning capability mediating the relationship between the two constructs. Their results suggest that the relationship between TQM and financial performance is mediated by business innovativeness and organizational learning capability.

(Kohan Low, 2008) In the literature, the TQM and company-wide-quality-control are described as being synonymous. There are important differences even though the emphasis and approach are similar.

RESEARCH DESIGN:

Descriptive research aims to describe a population, situation or phenomenon accurately and systematically. It can answer what, where, when and how questions, but not why questions. A descriptive research design can use a wide variety of research methods to investigate one or more variables.

SOURCES OF DATA:

Primary Data – Questionnaire given to 150 respondents

Secondary Data - Websites and, Published reports &Review of literature from published articles.

HYPOTHESIS:

HYPOTHESIS1:

H0: there is no significant difference between frequently the organization have the meeting of quality circle and organization going for quality audit

H1: there is significant difference between frequently the organization have the meeting of quality circle and organization going for quality audit

HYPOTHESIS 2;

H0: There is no significant difference between age and year of experience

H1: There is a significant difference between age and year of experience

PERCENTAGE ANALYSIS:

Research questions are always answered with a descriptive statistic generally either percentage mean. Percentage is appropriate when it is important to know how many of the participants gave a particular answer. Generally, percentage is reported when the responses have discrete categories.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-25	5	3.3	3.3	3.3
	26-35	66	44.0	44.0	47.3
	36-45	47	31.3	31.3	78.7
	above45	32	21.3	21.3	100.0
	Total	150	100.0	100.0	

INTERPRETATION:

Frome the above table and bar chart, it is inferred from that 3.3% of the respondents are age between 18-25,44.0%of respondents are the age of 26-35, 31.3% of respondents are the age between 36-45 and 21.3%of the respondents are age between above 45.

ANOVA TEST

Are the organization going for the quality audit?

	Sum of Squares	df	Mean Square	F
Between Groups	54.697	2	27.349	42.770
Within Groups	93.996	147	.639	
Total	148.693	149		

Conclusion: The significant value is 0.000 which is less than level of significance 0.05, so we reject null hypothesis (Ho) and we conclude that there is an association between frequently the organization have the meeting of quality circle and organization going for quality audit

CHI SQUARE TEST:

Age * Year of experience do you have in this field Crosstabulation

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	76.626[a]	9	.000
Likelihood Ratio	44.545	9	.000
N of Valid Cases	150		

a.10 cells (62.5%) have expected count less than 5. The minimum expected count is .10.

INTERPRETATION:

Since p value (0.000) is less than 0.05, so we reject the null hypothesis and we conclude that there is an association between age and year of experience.

FINDINGS:

1)44.0%of respondents are the age of 25-35.

2)68.7% of the respondents are from semi urban areas.

3) 55.3%of the respondents are finished diploma.

4) 100.0% of the respondents are said that organization providing quality assurance system operation.

5) 66.7% of above 15 people involved in quality sector.

6)74% of the respondents are Said that the organization have the meeting of quality circle weekly.

7) 54.7% of the respondents are said may be the organization going for quality audit.

8) 100% of the respondents are said that organization have the certificate of ISO9000.

9) 64.7% of the respondents are said yes for the regular update of the information system.

10)53.3% of the respondents are said yes for practicing the six Sigma for the error control.

11.)54% of the respondents are said pouring for most of quality problems occur.

12) 79.3% of the respondents are 10 - 15 years of experience in this field.

13)50.7% of the respondents are said the company have 249-500 employees.

14)68.7% of the respondents are said Yes for comfortable with the rules and policies of the organization.

15) 58.7% of the respondents are said Good for the type of relation having with the superior, peers and subordinates.

16) 18. 58% of the respondents are said Yes for getting rewards on good performance.

17) 48% of the respondents are said May be for proper measurement of the performance in the organization.

18) 20. 73.3% of the respondents are said Yes for existing of formal career planning process in the organization.

19) 56.7% of the respondents are said (JIT) Management for most effective TQM principle for reducing waste and improving efficiency in automobile manufacturing.

20) 35.3% of the respondents are said all of the above for consistency ensuring in product quality across different manufacturing facilities.

21)56% of the respondents are said document and analyze for root cause for company handling of defects and quality issues identified during the manufacturing process.

22) 99.3% of the respondents are said customer surveys and feedback for measuring of customer satisfaction with automobile quality.

23)21% of worker are rated the comfort of the work in the company.

SUGGESTION:

In SBC aluminum casting, consider the following improvements suggestion:

- Encourage a culture of continuous improvement throughout the organization, focusing on processes such as Lean Six Sigma to identify and eliminate waste and defects.
- Invest in training programs to empower employees with the necessary skills and knowledge to contribute to quality improvement efforts. Ensure their engagement and involvement in decision-making processes.
- Leverage technology such as automation, data analytics, and artificial intelligence to streamline processes, reduce errors, and improve quality control measures.

CONCLUSION:

The implementation of Total Quality Management (TQM) principles in the aluminum industry presents significant opportunities for enhancing product quality, reducing costs, and gaining a competitive edge in the market. By fostering a culture of continuous improvement, investing in employee training and engagement, strengthening supplier relationships, and leveraging technology, companies can achieve sustainable growth and ensure regulatory compliance. TQM not only improves customer satisfaction and loyalty but also drives operational efficiency and profitability. Therefore, embracing TQM is imperative for aluminum industry players seeking to thrive in today's dynamic business environment and deliver value to stakeholders.

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