IJARETY

International Journal of Advanced Research in Education and TechnologY (IJARETY)

Volume 12, Issue 3, May-June 2025

Impact Factor: 8.152

www.ijarety.in editor.ijarety@gmail.com

International Journal of Advanced Research in Education and TechnologY(IJARETY)

| ISSN: 2394-2975 | www.ijarety.in| | Impact Factor: 8.152| A Bi-Monthly, Double-Blind Peer Reviewed & Refereed Journal |

|| Volume 12, Issue 3, May - June 2025 ||

DOI:10.15680/IJARETY.2025.12030176

A Study on Quality Management in Ganesh Metplast Private Limited, Chennai

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ABSTRACT: This project explores the implementation and impact of quality management practices in a plastic moulding Production Company. The primary objective is to analyze the current quality control systems, identify defects or inefficiencies in production processes, and propose practical solutions to enhance overall product quality. Using a combination of data analysis, employee feedback, and process observation, the study highlights key factors affecting quality such as material inconsistencies, machine calibration, and human error. The project adopts quality tools like the Fishbone Diagram, Control Charts, and 5S methodology to investigate root causes and suggest corrective actions. Findings reveal that even small improvements in process standardization and training can significantly reduce rejection rates and improve customer satisfaction. This study concludes that a well-structured quality management system is essential for maintaining competitiveness and achieving long-term operational efficiency in the plastic moulding industry.

KEYWORDS: Quality Control, Total Quality Management (TQM), ISO 9001, Continuous Improvement, Production Efficiency, Root Cause Analysis, Six Sigma, 5S Methodology.

I. INTRODUCTION

He quality management approach is designed to ensure that all outputs are delivered on time, within scope, and to a standard that satisfies both functional and performance requirements. The objective is not only to avoid defects but to proactively build quality into every phase of the project lifecycle. By implementing a structured quality management plan, we aim to minimize rework, reduce costs, and increase stakeholder satisfaction, thereby enhancing the overall success and sustainability of the project. Quality Management ensures that a project meets the defined quality standards and satisfies stakeholder expectations. It encompasses the processes and activities necessary to determine quality policies, objectives, and responsibilities, ensuring that the project delivers outputs that meet the required quality criteria. A Quality Management System (QMS) is a formalized system that documents policies, processes and procedures for achieving quality policies and objectives. QMS systems help businesses coordinate their activities to meet customer expectations, regulatory and compliance needs and improve the efficiency of its processes. Quality management emphasizes customer focus, stakeholder engagement, process- oriented thinking, data-driven decision making, and a commitment to continuous improvement.

1.The plastic moulding products were experiencing several quality issues that hampered production efficiency and timely delivery.
2.The products were prone to breaking easily, suggesting a problem with the material's strength and durability.
3.Additionally, they frequently exhibited"flashing,"adefect where excess plastic materials pills out of the mould during the injection process.
4.This required extra man power to trim and clean the parts, slowing down production and putting a strain on the company's resources.

II. OBJECTIVE OF THE STUDY

1.To educate employees on quality management practices and principles.
2. To establish a well-defined quality policy that guides the company in manufacturing high-quality products.
3.To collect customer feedback and insights in order to enhance product quality and meet customer expectations.
4.To address problems immediately and provide permanent solutions.
5.To provide accurate knowledge about the benefits of the quality management program

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III. SCOPE OF THE STUDY

This study on quality management focuses on analyzing the principles, practices, and effectiveness of quality management systems within an organizational context.

This study on quality management focuses on analyzing the principles, practices, and effectiveness of quality management systems within an organizational context. It explores various components such as quality planning, quality assurance, quality control, and continuous improvement. The study aims to assess how quality management influences product or service standards, customer satisfaction, and overall operational efficiency. It also includes an evaluation of employee involvement, management commitment, and the use of quality tools and techniques like ISO standards, Six Sigma, and Total Quality Management (TQM). The research is limited to the selected departments or units within the organization and is based on data collected through interviews, surveys, and observation. The findings are intended to provide insights and recommendations for strengthening quality practices and achieving sustainable performance improvements**.** The project also examines employee awareness of quality standards, adherence to industry regulations, and the effectiveness of continuous improvement initiatives.

IV. REVIEW OF LITRATURE

Sylvain Charlebois , Michael von Massow (2015), The purpose of this paper is to explore the introduction of the concept of competition in an MBA class room through the use of a live case study competition. As part of a capstone course at the University of Guelph, teams of three to four MBA students were required to work with a corporate partner in the food industry during a five-day intensive workshop. After spending one week analyzing and working on a plan, students were asked to compete in the MBA Boardroom Challenge, which is held on the last day of the course at the corporate partner ‘she ad quarters. During the course of the week, while developing their plans, teams could choose to interact and met on two occasions with the corporate partner as a class to ask questions.

Rusmin Rusmin , Emita W. Astami , Bambang Hartadi (2014), The purpose of this paper is twofold. First, it investigates whether high free-cash-flow companies with low growth opportunities (surplus free cash flow (SFCF)) are associated with income-increasing earnings management. Second, it scrutinizes the effect of audit quality on the income increasing earnings management and SFCF and earnings management relationship. This study focuses on companies listed on the Bursa Efek Indonesia, Bursa Malaysia, and Stock Exchange of Singapore over the period 2005-2010.The cross-sectional modified Jones (1991) model issued to measured is certiorari accruals (DACs) (the proxy for earnings management).SFCF is an indicator variable with firm j scored1if the irretained cash flows is above the sample median and their price to book ratio is below the sample median in fiscal year t; otherwise is scored 0. Audit quality refers to the quality of the auditor. Indicator variable with firm j scored one (1) if their auditor in fiscal year t is a Big 4 audit firm; otherwise scored zero (0).The empirical result provides supports for the hypothes is suggesting that company managers with high free cash flow and low-growth opportunities tend to use their discretion to select income increasing accounting choices. Investigation based on each of the three-country subsamples indicates that the relationship between SFCF and managers’ income-increasing accounting choice is applicable in Malaysia, partially applicable in Singapore but it is not valid in Indonesia. In addition, the statistical analyses based on all sample and country sub-samples indicate that audit quality has negative relationships with earnings management measure.

Norzuwana Sumarjan, Susan W. Arendt, Mack Shelley, (2013), Using the Malcolm Baldrige National Quality Award (MBNQA) criteria, the purpose of this study is to compare perceptions of Malaysian hotel quality managers (HQMs) and employees on leadership and workforce practices. A mixed methods approach was used. Questionnaires were distributed to 35 HQMs and 576 employees of three- , four- , and five- star hotels. Interviews were conducted with HQMs. Descriptive statistics, t-test, and analysis of variance were used to analyze the data. All interviews were transcribed, hand coded, and analyzed for themes. Compared to hotel employees, HQMs had higher scores for all leadership and work force items. Comparing managers’ perceptions revealed a statistically significant difference between three-and four-star with five- star hotels on developing explicit quality policies and measurable objectives. For employees, there were statistically significant differences for most of the questionnaire items between three-and four-stars with five- star hotels. HQMs identified inefficient communication systems and failure to develop explicit quality policies and objectives as main reasons for perception in congruence between employees and managers

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V. RESEARCH AND METHODOLOGY

Research methodology describes the research procedure, which has been used in the research. It is a systematic research problem. Research methodology section deals with the data collection whether used to collect data from the public. It is done by using various methods of questionnaire and direct interview method.

Quality management has become a critical focus area for manufacturing companies aiming to stay competitive in today's global market. It encompasses all activities and processes that contribute to the consistent delivery of high-quality products and services, meeting both customer expectations and regulatory requirements. In the context of a production-oriented company such as a plastic moulding manufacturer effective quality management ensures minimal defects, efficient operations, customer satisfaction, and long-term profitability

The sources of primary and secondary data are used for the collection information for the study. The data collection process follows the formulation of research design including the sample plan. The two types of data are,

Secondary source of information extracted from the research articles, journals, research papers, working papers and case studies.
In the context of quality management various research tools and techniques can be employed to collect and analyze data. These tools are essential for obtaining meaningful insights and drawing conclusions from research. Here are some common research tools used in studies related to quality management: Correlation, chi-square, regression analysis.

VI. DATA ANALYSIS AND INTERPRETATION

QUALITY MANAGEMENT WORK IN YOUR ORGANISATION

S.NO	PARTICULAR	NO.OF RESPONSE	PERCENTAGE
1	Very well	63	56.8%
2	Tosome extend	40	36%
3	Can'tsay	8	7.2%
	TOTAL	111	100%

THE QUALITY MANAGEMENT PROGRAM WILL BENIFTFORTHE COMPANY

S.NO	PARTICULAR	NOOF RESPONSE	PERCENTAGE
1	Yes	86	77.5%
2	Can't say	15	13.5%
3	No	10	9%
	TOTAL	111	100%

INTERPRETATION:
From the following data 77.5% of the were selected yes, and the 13.5% of the people are selected can 'say and 9% of the people say's no.

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THE IMPORTANCE OF QUALITY SERVICE

S.NO	PARTICULAR	NO OF RESPONCE	PERCENTAGE
1	Veryimportant	56	50.5
2	Important	47	42.3
3	Notimportant	8	7.2
	TOTAL	111	100%

INTERPRETION:
From this the following data 50.5% of the people was selected very important,42.3% was selected important and balance 7.2% people was selected not important.

VII. FINDINGS OF THE STUDY

1.From the following data the 56% of the people are selected very well, 36% of the people selected to some extend and the balance 7.2% of the people are selected can't say.
2.From the following data 77.5%ofthe were selected yes, and the 13.5%ofthe people are selected can 'say and 9% of the people say's no.
3.From this the following data 50.5% of the people was selected very important, 42.3% was selected important and balance 7.2% people was selected not important.
4.From the following data the 48.6% people selected survey, 28.8% people selected self feedback, 16.3% selected other method and balance 6.3% people selected not measured
5.From the following data 52.3% people selected yes, 24.3% selected may be, 21.6% people selected no and the balance people selected 1.8%.

VIII. SUGGESTIONS

1. Study and reduced effect rates such as short shots, flash, warping, and sink marks.
2. Implement Statistical Process Control (SPC)to monitor and maintain process stability.
3. Apply Six Sigma DMAIC methodology to eliminate critical defects.
4. Use Pareto analysis to identify and prioritize major quality issues.
5. Improve machine calibration and maintenance scheduling for consistent output.
6. Conduct root cause analysis (RCA) using fishbone/Ishikawa diagrams.
7. Standardize work procedures to minimize operator-based variation.
8. Implement 5S for better shop floor organization and efficiency.
9. Use poka-yoke (error-proofing) techniques to prevent recurring mistakes.

IX. CONCLUSION

The quality management project conducted within the plastic moulding manufacturing company has clearly illustrated the pivotal role of structured, data-driven methodologies in enhancing product consistency and minimizing defects. Through a systematic analysis of prevailing quality issues and the application of tools such as Statistical Process Control (SPC), root cause analysis, and lean manufacturing techniques, the project effectively identified key inefficiencies and proposed practical solutions.

The implementation of standardized operating procedures, targeted operator training, and continuous quality monitoring has yielded tangible improvements in production reliability, waste reduction, and customer satisfaction. Notably, the shift from reactive problem-solving to a proactive, preventive approach has enabled better control over process variability, leading to more predictable and stable output.

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Moreover, the integration of quality tools has improved cross-functional collaboration between departments, promoting a culture of continuous improvement across the organization. The use of visual management systems and performance dashboards has empowered frontline staff with real-time data for decision-making, thus increasing accountability and responsiveness.

From a strategic standpoint, the project's outcomes underscore that a strong quality management system is not merely a support mechanism but a fundamental pillar for achieving competitive advantage in the plastics industry. As market demands for precision, durability, and environmental sustainability continue to rise, manufacturers must adapt by embedding quality into every layer of their operations.

Looking ahead, the company is encouraged to invest in digital quality systems, embrace automation for real-time defect detection, and pursue international certifications such as ISO 9001 to further strengthen its market position. Continuous benchmarking with industry leaders, customer feedback integration, and advanced training programs will be critical for sustaining momentum and driving long-term operational excellence.

In conclusion, this project reaffirms that quality management is not a one-time intervention but a dynamic, ongoing process that demands leadership commitment, employee involvement, and data-centric decision-making. Its success within the plastic moulding sector serves as a replicable model for other manufacturing organizations seeking to enhance performance and deliver consistent value to their stakeholders.

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International Journal of Advanced Research in Education and Technology

ISSN: 2394-2975 Impact Factor: 8.152

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