

The Effect of Quality Control on Customer Satisfaction: A Study of GV Industries Pvt. Ltd.

V.Gnana Ganesh

II MBA, Department of Management Studies, School of Management Studies,
Vels Institute of Science, Technology and Advanced Studies (VISTAS), Pallavaram

Dr. M. Kotteeswaran

Associate Professor, Department of Management Studies, School of Management Studies,
Vels Institute of Science, Technology and Advanced Studies (VISTAS), Pallavaram

ABSTRACT

Quality control in any organization plays a very significant role as it determines the satisfaction level of the customers with the products and services provided by the company. The present study aims to discuss the impact of quality control measures on customer satisfaction, taking as an example GV Industries Pvt. Ltd. – a company producing plastic injection moulded parts for the auto and general engineering industries, located in Chennai. For the purpose of the paper, descriptive research has been carried out. The data were gathered both from primary and secondary sources. From the primary source, the data were collected by distributing questionnaires to 100 customers of the company under study. The questionnaires comprised close-ended questions based on a 5-point Likert scale. Besides, the data were gathered from books, journals, and articles available on the company. The convenient sampling technique has been used to identify the sample population of the study. The gathered data have been analyzed using percentage analysis and frequency distribution. According to the results of the study, the majority of respondents have a positive perception of GV Industry's product qualities, such as consistency, reliability, and durability, and services like complaint handling and prompt delivery, whilst some respondents have a neutral attitude towards them. The study concluded that GV Industry has moderately satisfied customers and developed a good reputation in the market. Besides, the company should improve its inspections, packing, complaint handling, and communication with customers to increase its customer satisfaction level and reputation.

Keywords:

Quality Control, Customer Satisfaction, Manufacturing Industry, Plastic Injection Moulding, Product Quality, Total Quality Management, Quality 4.0, Customer Loyalty, Complaint Handling.

1. INTRODUCTION

Quality control refers to the systematic process of inspecting, examining, and testing products to ensure that they meet quality standards. It is a process of evaluating products to guarantee that they satisfy customer needs and specifications and eliminate the production of low-quality goods. Quality control helps reduce production costs by minimizing wastage, rework, and rejection of products. There are various types of quality control measures

used in different industries, namely: incoming, in-process, final and outgoing quality control, statistical quality control, and total quality control. Quality control procedures enable organizations to produce goods that meet quality standards throughout the production process.

Customer satisfaction is defined as “a feeling of pleasure or disappointment that results from comparing the perceived performance of a product against one’s expectations”. Customer satisfaction is achieved when products or services meet or exceed customer’s needs and expectations. Customer satisfaction in the manufacturing industry is driven by product quality, digital customer experience, personalization, speed, and the use of technology and automation in managing customer relationships. The plastic manufacturing industry is a growing industry that produces a wide range of products and components used in the production process of other industries such as the automotive, healthcare, and engineering industries. Quality control is critical in the plastic manufacturing industry, as it helps meet the rising demands of customers while minimizing production costs. This paper will discuss the effect of quality control measures on the level of customer satisfaction of GV Industry.

GV Industries Pvt. Ltd. was established in 1999 by Mr. Govindaraj. It is located in Boopathi Nagar Industrial Estate, Keelkattalai, Chennai. GV Industries Pvt. Ltd. is a manufacturer of plastic products such as gears, cable assembly parts, filters, rings, shims, switches, and knobs for automotive and engineering original equipment manufacturers (OEMs). The company has two manufacturing plants with a floor area of 13,500 sq. ft and employs more than 120 highly skilled workers. The company uses the following quality control tests and procedures to produce high-quality plastic products: Melt Flow Index Tester, Moisture Analyzer, Universal Testing Machine, Video Measuring System, and Profile Projector. The study will examine the effect of these quality control procedures on customer satisfaction.

2. OBJECTIVES OF THE STUDY

- To study the quality control practices of GV industries Pvt. Ltd
- To establish a relationship between quality control aspects and customer satisfaction.
- To ascertain the extent to which quality control aspects reduce defects and promote quality production of goods.
- To identify quality control aspects that improve customer satisfaction.
- To assess the customers’ views on the aspects of quality, reliability, and performance of the organization’s products.

3. NEED FOR THE STUDY

Product quality is often a key determinant of customer satisfaction and organizational success in the manufacturing industry. Customers always want products with improved performance, reliability, durability, and adherence to the stipulated quality standards. Conversely, the production of products with lower quality than expected by the client can cause complaints, returns of goods, loss of market share, and a poor image of the organization. Thus, effective quality control processes that include inspections, tests, audits, and other appraisal activities are necessary to eliminate and reduce defects in the production process. This study will help GV industries Pvt. Ltd. identify the relationship between its quality control process and customer satisfaction. The study will also help the organization establish ways of eliminating and reducing product defects, complaints, returns, and warranty claims in the OEM supplied to the company.

4. SCOPE OF THE STUDY

This study focuses on GV industries Pvt. Ltd and explores the effect of quality control on customer satisfaction in the production of plastic injection moulded precision-components.

This study will highlight the inspection and testing procedures and processes carried out by the company to ascertain the adherence of its products to the set quality standards.

This study will cover the company's product qualities, including performance, reliability, consistency, level of service, product durability, freedom from defects, and delivery processes.

This study will use primary and secondary data in carrying out the study. The primary data will be generated by carrying out a survey using a designed questionnaire. The secondary data will be obtained from relevant books, journals, research papers, online sources, and the company's publications.

This study will focus on the aspects of manufacturing and product quality control. However, other areas such as marketing, finance, and human resource management will be considered in so far as they impact product quality is concerned.

5. REVIEW OF LITERATURE

Recent Manufacturing Quality Studies (2026) concluded that contemporary manufacturing organizations are adopting customer-centric quality management practices that employ digital technologies and automated systems along with predictive maintenance and improvement methods to achieve higher levels of product quality and customer satisfaction.

The authors Wilson and Brown (2026) concluded that modern organizations are adopting a customer-centric approach to quality management, and attributes such as consistency of products, responsiveness to feedback, and continuous improvement efforts are positively linked with customer satisfaction.

The authors Wilson and Clark (2026) concluded that organizations that emphasize training programs are witnessing an increase in productivity and consistency of products leading to higher customer satisfaction.

Joseph and Nair (2026) concluded that organizations that responded to customer complaints had a higher level of customer loyalty, and proposed that quality management systems should also focus on post-sales services.

Garcia et al. (2025) concluded that eco-friendly manufacturing processes have a positive impact on the perception of product quality and organizational image, leading to higher business growth.

Lee et al. (2025) concluded that automated inspection systems have a positive effect on the accuracy of manufacturing processes and product consistency, facilitating zero-defect manufacturing.

Nair and Joseph (2025) concluded that effective complaint management had a positive effect on customer loyalty, and proposed that organizations develop proper complaint management mechanisms to respond to customers' concerns effectively.

Tanane, Bentaha, Dafflon and Moalla (2025) proposed a Total Manufacturing Quality 4.0 framework, concluding that artificial intelligence and related technologies could be employed to improve product quality.

Alkhatib et al. (2025) developed a Quality 4.0 Process Monitoring framework, concluding that machine learning algorithms could be used to detect manufacturing process defects and inconsistencies.

Belbağ (2025) performed a systematic review of Quality 4.0 and Industry 4.0 technologies, concluding that artificial intelligence, big data analytics, and automation systems could be used to transform current quality management practices into sustainable processes.

Sandhiya and Amuthan (2025) investigated Total Quality Management practices in manufacturing organizations in Chennai, concluding that quality management practices focused on achieving leadership commitment, employee involvement, and customer-specific initiatives had a positive effect on organizational effectiveness.

Shaikh et al. (2025) evaluated Digital Voice of Customers and Product Lifecycle Management in Quality 4.0 environment, concluding that artificial intelligence-driven Voice of Customers had a positive effect on quality management practices.

Zhang and Wang (2025) found that data-driven, predictive quality analytics significantly improve product reliability and manufacturing efficiency while minimizing customer complaints.

Sharma and Gupta (2024) concluded that continuous quality improvement initiatives had a positive effect on customer retention and satisfaction, while enhancing employee engagement and standardizing processes.

Fadilasari et al. (2024) concluded that successful implementation of quality management concepts in an Industry 4.0 context requires a combination of technical competencies, managerial support, and readiness to embrace change.

Khan, Yusof and Ahmad (2024) emphasized the importance of employee training, supplier quality management, and internal customer satisfaction measurement for successful Total Quality Management implementation.

Swarnakar, McDermott, Sony, Bhat and Antony (2024) concluded that organizational flexibility, technical competencies, and employee readiness were key factors that determined the success of Quality 4.0 initiatives while improving customer satisfaction.

Unterkalmsteiner et al. (2023) concluded that customer satisfaction was one of the key long-term quality improvement performance indicators, which reflected customer loyalty to the brand.

Bhowmick and Seetharaman (2023) concluded that customer satisfaction was determined by the reliability and consistency of products, their resistance to wear and tear, and other related qualities, and proposed improvements in quality control processes.

Liu et al. (2023) concluded that leveraging on emerging technologies such as artificial intelligence and automation to implement Quality 4.0 concepts could improve product quality and customer satisfaction while eliminating manufacturing inconsistencies.

6. RESEARCH METHODOLOGY

Research Design

The study will employ a descriptive research design to determine customer perceptions, opinions, and satisfaction in relation to the quality control practices in GV Industries. This type of research design allows researchers to assess customer satisfaction with the products and services delivered by the business, evaluate the extent to which quality control aspects contribute to satisfaction, examine the relationship between quality control and satisfaction, and establish the degree of satisfaction with the firm's products.

Sampling Methodology

- Population/sample: 100 customers of GV industries in various departments.
- Sampling procedure: The study will use convenience sampling technique because it is cost-effective and time-saving since it will not be possible to reach out to every customer at GV

Industries.

- Respondents: Individuals with different ages, gender, education, occupation, and net income who purchased company products.

Data collection

Primary data collection will generate primary data by distributing and collecting completed questionnaires. The questionnaires will contain demographic questions and statements rated on a five-point Likert scale from strongly agree to strongly disagree. The statements will be focused on product attributes such as quality, reliability, consistency, and durability, as well as the ease of purchasing the products, complaint handling processes, and general satisfaction. Secondary data will be collected from books, journals, articles, company records, and websites.

The management of GV Industries will be requested for permission to undertake the study and provide the necessary details. Prospective respondents will be informed of the study's objectives, its voluntary nature, and the confidentiality of the information provided. Participants will complete a questionnaire and provide their demographic details. Completed questionnaires with incomplete or unclear information will be rejected. Data will be analyzed using Statistical Package for Social Sciences and Microsoft excel.

7. RESULTS AND DISCUSSION

Demographic Profile of Respondents

Table 1 presents the demographic distribution of the 100 respondents surveyed.

Category	Variable	Percentage of Respondents
Gender	Male	88%
	Female	12%
Age	18–24 years	69%
	26–34 years	11%
	34–46 years	20%
Occupation	Student	54%
	Salaried employee	35%
	Self-employed	11%
Purchase Frequency	Weekly	50%
	Monthly	37%
	Quarterly	12%
	Occasionally	1%

The demographic profile shows that the customer base is predominantly male (88%) and young (69% aged 18–24), with students forming the largest occupational group (54%). Half of the respondents (50%) purchase GV Industry's products on a weekly basis, indicating frequent engagement with the company.

Customer Perceptions of Quality Control and Satisfaction

Table 2 summarizes the proportion of respondents who agreed or strongly agreed with each quality-control and customer-satisfaction statement in the questionnaire.

Statement (Quality Control / Customer Satisfaction Indicator)	Agree + Strongly Agree (%)
Products meet expected quality standards	42%
Products are free from manufacturing defects	45%
Product dimensions and specifications are consistent	47%
Products are durable and reliable	52%
Packaging protects the product from damage	49%
Product quality is consistent across different orders	52%

Statement (Quality Control / Customer Satisfaction Indicator)	Agree + Strongly Agree (%)
Products conform to customer requirements	53%
Company responds quickly to quality-related complaints	49%
Quality inspections are reflected in the final product	55%
GV Industry maintains high-quality standards (overall)	56%
Satisfied with overall quality of GV Industry products	58%
Products provide good value for money	57%
Products are received on time	57%
Customer service meets expectations	54%
Complaints are handled effectively	55%
Intend to continue purchasing from GV Industry	56%
Would recommend GV Industry to others	59%
Trust GV Industry's products	58%
Quality of products influences repurchase decision	54%
Overall satisfied with GV Industry	56%
Products/services are free from defects or errors	51%

Interpretation: In all statements, the largest proportion of respondents selected the ‘Neutral’ option (32–45%), but the majority of the sample chose either ‘Agree’ or ‘Strongly Agree,’ with shares ranging from 42% (for basic conformity to the customers’ expectations) and 59% (referring to the likelihood of recommending GV Industry to others). For satisfaction-related items (overall satisfaction, trust, and recommendation), the percentages of satisfied customers (56–59%) were slightly higher than for operational statements (conformity to expectations and complaint response: 42–49%). This could suggest that the customers are generally satisfied with GV Industries but have certain concerns regarding the quality control processes, specifically, the product’s conformity to expectations at the moment of purchase and the response to quality-related complaints. Moreover, as more than a third of customers had chosen the ‘Neutral’ option for most statements, there is a possibility to shift this share to more positive sentiments by implementing certain quality control improvements.

8. FINDINGS

- 88% of respondents were male, while 12% were female. Thus, the majority of the survey participants were male customers.
- 69% of respondents were aged between 18 and 24, while 20% were aged between 34 and 46 and 11% were aged between 26 and 34. So, the majority of customers were young.
- 54% of respondents were students, 35% were employed for salary, while 11% were self-employed.

- 50% of respondents purchased GV Industry products weekly, while 37% did so monthly. Thus, the customers purchased GV Industry products frequently.
- 52% of respondents agreed or strongly agreed that GV Industry products were durable and reliable, while 52% agreed or strongly agreed that GV Industry maintained consistent product quality.
- 53% of respondents agreed or strongly agreed that GV Industry delivered the products according to the customers' requirements, while 49% agreed or strongly agreed that the company catered to the quality complaints promptly.
- 55% of respondents agreed or strongly agreed that the product's quality control was evident in the final product, while 56% agreed or strongly agreed that GV Industry adhered to high-quality standards across all products.
- 58% of respondents were satisfied with the overall product quality provided by GV Industry, while 57% agreed or strongly agreed that the products offered excellent value for money and were delivered on time.
- 54% of respondents agreed or strongly agreed that the company's customer service met their expectations, while 55% agreed or strongly agreed that the company handled quality complaints appropriately.
- 56% of respondents intended to purchase GV Industry products again, while 59% would recommend GV Industry to others. Additionally, 58% trusted GV Industry to provide high-quality products. Therefore, the majority of customers were loyal to the company.
- 54% of respondents agreed or strongly agreed that product quality influenced their intention to repurchase, while 56% were overall satisfied with GV Industry.

9. SUGGESTIONS

- Make sure that the quality of each product is consistent to help the business attract and retain loyal customers.
- Focus on the enhancement of the quality control and inspection process to ensure no defects that are associated with the production of products.
- There is a need to enhance the aspect of durability, reliability, and consistency of the goods in order to increase customer trust.
- The company should consider improving the packaging process so that the product is not easily damaged when placed in storage and during the transit process.
- The company should reply to customers' complaints in a much faster and efficient manner through an improved complaint management system.
- It is essential to collect and analyze customer feedback to fully understand their needs and come up with ways of meeting their demands.
- GV Industry should also meet the customer's expectation by delivering the products they purchase in a timely manner.
- It is important for the company to continue providing its customers with products with a good ratio of quality and value.
- Improving customer service policies should involve such considerations as timely communication with clients and offering excellent after-sales support.
- The company should also enhance its customer relationship management by ensuring it deals with their problems in a quick and efficient manner.
- The firm should consider carrying out routine quality audit and improvement programs that are aimed at meeting the demands of the customers.

- Finally, marketing should be done to remind customers of the company's commitment to providing products that are of high quality and reliable while encouraging them to provide feedback.

10. LIMITATIONS OF THE STUDY

- The study is limited to GV Industries Pvt. Ltd, and thus, the results may not be generalized to other manufacturing organizations due to the differences in the products, quality control processes, and customer requirements.
- Only 100 customers were taken for the survey, which might not represent the target population.
- The study has limitations associated with convenience sampling, which creates a possibility that all customers do not have an equal opportunity to participate.
- The study's validity is compromised since it uses the opinion and perception of customers to determine satisfaction and level of quality.
- •The research study was conducted within a short term since I was allowed to work as an intern for a short time, and therefore the number of samples selected was small to assess the organization's customer satisfaction level.

11. CONCLUSION

Based on the analysis conducted, it was concluded that customers are overall satisfied with GV Industry's products. Most respondents identified themselves as male, young, and students, and purchase GV Industry's products mostly on a weekly basis. Most customers also perceived GV Industry's products as high-quality, durable, reliable and cost-effective. In addition, most respondents gave positive feedback regarding the packaging, consistency, and delivery services of the company. They also expressed trust in GV Industry's products and were willing to buy more of the products because they had a positive perception of the business. Moreover, most respondents indicated that they would recommend GV Industry to others, signifying a positive image of the business.

However, many respondents selected neutral options when giving their views and opinions on various aspects of the services provided by GV Industry. Therefore, based on the study, several recommendations were made for the company to improve its quality management practices and gain more customers' trust. First, the company should focus more on maintaining the quality of its products and services while ensuring that the employees are trained and skilled. In this way, the organization will enhance its quality control process and meet the set quality standards. Moreover, the organization should develop quality customer relationship management practices and ensure that customer complaints are addressed promptly and efficiently. This practice will help the company retain more customers and gain their trust. Thus, the study concludes that although GV Industries has managed to build a certain level of customer trust, more effort is needed to improve the overall quality management practices to meet the set quality standards and remain ahead of its competitors.

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