

**A STUDY ON PRODUCTION PROCESS AND QUALITY CONTROL IN
SUN INDUSTRIAL AUTOMATION & SOLUTIONS**

SUBMITTED IN PARTIAL FULLFILMENT OF THE REQUIREMENTS

FOR THE AWARD OF

MASTER OF BUSINESS ADMINISTRATION

BY

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42410196



DEPARTMENT OF BUSINESS ADMINISTRATION

SCHOOL OF MANAGEMENT STUDIES

**SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)**

**Accredited with Grade “A++” by NAAC | 12B Status by UGC | CATEGORY – 1
UNIVERSITY BY UGC | Approved by AICTE**

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SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)
CATEGORY - 1 UNIVERSITY BY UGC

SCHOOL OF MANAGEMENT STUDIES

BONAFIDE CERTIFICATE

This is to certify that this Project Report is the bona-fide work of **M.SELVAPRIYAN (42410196)** who has done the Project work entitled “**A STUDY ON PRODUCTION PROCESS AND QUALITY CONTROL IN SUN INDUSTRIAL AUTOMATION & SOLUTIONS** ” under my Supervision from October 2023 to December 2023.

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Submitted for Viva voice Examination held on -----.

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CERTIFICATE OF COMPLETION



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To whom So Ever It may Concern

This is to certify that Mr. M.Selvapriyan (Reg no 42410196) student pursuing second year MBA Operation in (Sathyabama Institute of Science & Technology) has done Internship training with a project title A Study on Production process & quality Control (10-09-2023 to 09-10-2023) in our organization. We wish him all the best for his future endeavors

For Sun Industrial Automation & Solutions Pvt Ltd



Authorized Signatory

DECLARATION

I am **M.SELVAPRIYAN (42410196)** hereby declare that the project entitled “ **A STUDY ON PRODUCTION PROCESS AND QUALITY CONTROL IN SUN INDUSTRIAL AUTOMATION & SOLUTIONS** “ done by me under the guidance of **Dr.M.Deepa** Fulfilment of the requirements award of MASTER OF BUSINESS ADMINISTRATION.

DATE: 12- 01- 2024

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SIGNATURE OF THE CANDIDATE

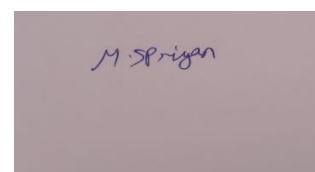
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M.SELVAPRIYAN

ABSTRACT

This study delves into the intricacies of production processes and quality control, aiming to provide a comprehensive understanding and analysis. The primary objectives include the examination of goods and services production with a focus on achieving optimal quality. The study also emphasizes the perception of quality and improvements in quality control and safety and regulatory in the production process. Furthermore, the research underscores the role of an effective production process coupled with robust quality control mechanisms in early defect identification and elimination, subsequently reducing rework, waste, and overall production costs. It underscores the pivotal role of quality control in the electronics industry, ensuring the functionality and reliability of electronic components and devices. Through a comprehensive examination of production processes and quality control measures.

TABLE OF CONTENT

CHAPTER NO	PARTICULAR	PAGE NO
	ABSTRACT	V
	LIST OF TABLES	Viii
	LIST OF CHARTS	X
	INTRODUCTION	
1	1.1 INTRODUCTION	1
	1.2 COMPANY PROFILE	2
	1.3 INDUSTRY PROFILE	3
	1.4 OBJECTIVE OF THE STUDY	4
	1.5 NEED OF THE STUDY	4
	1.6 SCOPE OF THE STUDY	4
2	REVIEW OF LITERATURE	
	2.1 INTRODUCTION	5
	2.2 LIST OF REVIEW	5- 27
3	RESEARCH METHODOLOGY	
	3.1 RESEARCH DESIGN	28
	3.2 SAMPLE DESIGN	28
	3.3 PERIOD OF STUDY	28
	3.4 SAMPLE SIZE	28
	3.5 DATA COLLECTION	28
	3.6 QUESTIONNAIRE	29
	3.7 TOOLS USED FOR ANALYSIS	29
	3.8 GRAPICAL REPRESENTATION OF DATA	29
4	DATA ANALYSIS AND INTERPRETATION	
	4.1 PERCENTAGE ANALYSIS	30- 49
	4.2 CORRELATION	50
	4.3 CHI- SQUARE	51- 52
	FINDING , SUGGESTIONS & CONCLUSION	
	5.1 FINDING OF THE STUDY	53 -54

5	5.2 SGGESTIONS	54- 55
	5.3 LIMITATION OF THE STUDY	55
	5.4 CONCLUSION	55
	REFERENCE	56- 61
	APPENDIX (QUESTIONNAIRE)	61- 63

LIST OF TABLES

TABLE NO:	PARTICULAR	PAGE NO
4.1	Age of the respondent	30
4.2	Gender of the RESPONDENT	31
4.3	Marital status	32
4.4	What is your position in your company	33
4.5	How much experience do you have	34
4.6	How many hours do you work in your company	35
4.7	Do you collect data to measure the performance of the operation process	36
4.8	What is your organization perception quality	37
4.9	Do you think quality management will work in your organization	38
4.10	Do you have a system for gathering suggestions	39
4.11	How would you rate the importance of product/ service quality ?	40
4.12	How well defined are the quality control procedures in our organization	41
4.13	How important are strong supplier relationship to the success of your production	42
4.14	How dose your organization ensure safety and regulatory compliance in the production process	43
4.15	How adaptable is your production process to change in product demand or design specification ?	44
4.16	How effectively different departments communicate and collaborate in the production process ?	45
4.17	Dose your organization provide training programs to enhance the skills and knowledge of employees involved in production process	46

4.18	How could you rate the importance of customer satisfaction ?	47
4.19	Dose your organization have a process for continuous improvements in quality control ?	48
4.20	On a scale of 1-10 how satisfied are you with the current production process in your organization?	49

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4.10	Do you have a system for gathering suggestions	39
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CHAPTER 1

1.1. INTRODUCTION

PRODUCTION PROCESS

A production process is a method of using economic input or resources, like labour, capital equipment or land, to provide goods and services to consumers. Production is the process of combining various inputs, both material (such as metal, wood, glass, or plastics) and immaterial (such as plans, or knowledge) in order to create output. Ideally this output will be a good or service which has value and contributes to the utility of individuals. The production function is a mathematical function stating the relationship between the inputs and the outputs of the goods in production by a firm. Entrepreneurship, labour, land, and capital are major factors of input that can determine the maximum output for a certain price.

IMPORTANCE OF PRODUCTION PROCESS

Production is one of the most important processes within manufacturing, and is a core part of what it means to be a manufacturer. Without this activity, no finished goods would be created, and there would be nothing to sell to customers. The production process definition refers to changing inputs into outputs. The main types are Mass production, Batch production, job production, just-In-Time production, and flexible manufacturing system.

QUALITY

Quality control refers to a company's methods for assessing product quality and, if necessary, improving it. There are various ways to perform quality control, including benchmarking, examining manufacturing procedures, and testing products. All of this is done to keep track of significant product differences.

What are Quality Standards?

Quality standards refer to sets of guidelines, systems, methods, requirements, and specifications followed by an organization to ensure consistent process and product quality.

In other words, quality is the level of perfection of a process, service, or product delivered by your company in such a way that meets the requirements defined by ISO and of course, by your customers

IMPORTANCE OF QUALITY CONTROL

Better products equal happier customers and higher revenue. Customers who buy products from your company will be expecting the same standard of quality each time they buy. Without a proper quality management system, your customers could find themselves buying the same product, but with various standards of quality.

FACTORS DETERMINING PRODUCTION PROCESS AND QUALITY CONTROL

Ineffective communication and collaboration between departments and teams are critical to maintaining consistency in production and quality control. The effectiveness of quality control measures, including testing and inspection procedures, directly influences the identification and prevention of defects.

1.2. COMPANY PROFILE

Sun industrial automation & solutions Pvt. Ltd.(SIASPL) is a well known Industrial automation company having an established presence in verticals like Water, Power , Telecom and a growing presence in the renewable energy segment. The company also forays into manufacturing EV charging stations aligning with government policies as well as supplying smart light poles for smart city projects. SIASPL has a strong engineering and professional project management team to handle turnkey projects involving Electrical, instrumentation, automation, telecom and telemetry for big municipal water supply projects. The company is managed by professionals having

wide experience in the above verticals. The company was founded in the year 2000 and it has grown to become a leading solution provider in the above domains

HISTORY

SUN Industrial Automation & Solutions Private Limited (SIASPL) is a well established organization with a long history of delivering quality products & solutions to various customers. The company is managed by professionals having wide experience in the above verticals. The company was founded in the year 2000 and it has grown to become a leading solution provider in the above domains.

1.3. INDUSTRY PROFILE

SIASPL has been posting robust growth working with leading OEMs, EPCs , Infrastructure and utility companies across India. SIASPL offering includes its own products and well-established engineering practices to realize the solutions in both cost effective and timely manner.

SIASPL has a strong embedded systems development team which has already developed numerous products for industrial and power electronic applications. The team with its expertise in implementing popular industrial communication protocols have developed communication gateways for centralised data acquisition as well as IOT solutions for cloud based monitoring .The high performance power supplies and power converters are developed to meet the stringent power supply requirements in many applications. The battery chargers / solar charge controllers for lead acid batteries and lithium ion batteries are also one of the main products lines of the company.

SIASPL solutions for Water supply include design, installation, commissioning, monitoring and maintenance of Electrical and instrumentation package for large pumping , treatment and distribution networks. SIASPL also supplies similar E&I packages for Municipal waste water / Industrial waste water treatment facilities and instrumentation and control packages for Desalination plants.

1.4. OBJECTIVE

- To know that the goods and services are produced in a right quality and right quantity, at the right time.
- To identify and correct any deviations from the established quality standards
- To find the difference of perception of quality and improvements in quality control.
- To find the relationship between safety and regulatory compliance in the production process.

1.5. NEED

- To have a quality control will ensure that product or service meet consistent standard. This crucial for maintaining the desired level of quality and preventing variations in the final product.
- To have a consistent quality of a product leads to customer satisfaction. Product or service that consistently meet or exceed customer expectations contribute to customer loyalty and positive brand perception
- To have a effective production process and effective Quality control can help identify and eliminate defects early in the production cycle. This reduces rework, waste, and the overall cost of production.

1.6. SCOPE

- In manufacturing, production process and Quality control are fundamental. This includes industries such as automotive, electronics, pharmaceutical, food and beverage, textile and more
- In the electronic industry, quality control is to ensure the functionality and reliability of electronic components and devices.

CHAPTER 2

REVIEW OF LITERATURE

2.1. INTRODUCTION

Review of literature provides a deep insight on the concerned board area of study. Review of Literature is the first step in organized research work. Researcher gets to know the quantum and direction of work done till date in his\her area of research interest. It also helps a researcher in appreciating different conclusion and outcomes of the research conducted. And finally researcher can make an informed decision with regard to the research methodology which will suit to his\her research work, based on review of literature. The researchers are taking reference from any related book, article, related research paper, these, organizational report and various literatures available on the website and internet.

2.2. LIST OF REVIEW

1. Jia Huang, Ling-Xiang Mao, Hu-Chen Liu, Min-shun Song (2022)

This paper conducts a comprehensive bibliometric analysis of journal articles focused on Quality Function Deployment (QFD) improvement from 1999 to 2020. The traditional QFD method, used for customer-driven product development, has faced criticisms for its deficiencies. While various models and approaches have been proposed for QFD enhancement, there is a lack of contributions reviewing and summarizing related research through bibliometric analysis. The study first presents metadata analysis to elucidate the research progress in QFD improvement. Subsequent bibliometric analyses identify prolific researchers, productive institutions, collaborations, and the intellectual structure of QFD studies. Keyword analysis reveals research focuses and emerging trends. The paper concludes by summarizing blind spots and suggesting future research directions in QFD, offering a valuable reference for future advancements in the field.

2. Tolga Ozsen, Baris Uslu, Ahmet Aypay (2022)

This paper addresses the pervasive influence of sustainability on various aspects of organizations, with a specific focus on its impact on universities as human-oriented institutions. The study aims to answer two crucial questions guiding university managers in strategically navigating sustainable quality development: 1) What strategies do university managers employ to establish a "sustainable quality management" structure in their institutions? and 2) How are these strategies related to different aspects/components of universities?. 'Sustainable Quality Management' system involve integrating a sustainable quality approach into the main strategy document and motivating staff to participate in and contribute to cultural changes at the reform level in their universities. The paper also discusses the strategies adapted to sustain quality development in various aspects of university practices, including teaching, research, societal services, and internationalization.

3. Maríano García-Fernández, Enrique Claver-Cortés, Juan José Tarí (2022)

This paper aims to conduct a systematic literature review focusing on the interrelationships between quality management, innovation, and performance. The findings of the review indicate a positive correlation between quality management and various dimensions of innovation, including both product and process innovation (both incremental and radical). Additionally, positive associations were identified between quality management and operational as well as financial performance, encompassing both direct and indirect relationships. Building on these outcomes, the paper proposes a set of direct and indirect relationships between quality management, innovation, and performance variables. This contribution adds to the limited existing research on the joint relationships among these critical elements in organizational dynamics.

4. Adi Permana, Humiras Hadi Purba, Nyimas Desy Rizkiyah (2021)

This research introduces the relevance of Total Quality Management (TQM) in the current market and complex business environment. It emphasizes the importance of meeting customer requirements and expectations, including high product quality, faster delivery, and competitive costs. TQM is presented as a comprehensive concept and method for managing these requirements. The research aims to investigate whether TQM remains relevant and effective in improving business performance and customer satisfaction.

5. Mohammad Reza Sadeghi Moghadam, Hossein Safari, Narjes Yousefi (2021)

This paper underscores the contemporary significance of quality management as a pivotal factor in organizational success and survival. It acknowledges the diverse range of approaches that have emerged over the past decades, leading to the development of numerous tools, techniques, principles, and models for quality management. The effective utilization of these methods, along with a comprehensive understanding of their outcomes, is deemed crucial for informed decision-making in business development and innovation.

6. Leonardo Stertz Sfreddo, Guilherme Bergmann Borges Vieira, Gabriel Vidor, Carlos Honorato Schuch Santos (2021)

This paper is definitive conclusion on the relationship between quality management systems (QMS) and organizational performance. The paper addresses this gap by conducting a systematic literature review between 2000 and 2017, using search terms like ISO 9001 and performance in databases such as Emerald Insight, Science Direct, and Web of Science. Results indicate that the majority of studies suggest a positive correlation between ISO 9001 implementation and various dimensions of organizational performance, with operational and market performances showing particularly strong associations.

7. **Ameneh Farahani, Hamid Tohidi (2021)**

This paper emphasizes the contemporary importance of customer satisfaction in acquiring new markets, asserting that quality plays a pivotal role in achieving this satisfaction. Quality in production, according to the paper, involves accurately understanding customer needs, designing products accordingly, precise production process design, and on-time delivery. The integration of maintenance, quality control planning, and production planning is deemed essential for producing products with specified technical characteristics and ensuring timely delivery. The paper argues that achieving quality goals, which ultimately lead to customer satisfaction, requires the integrated optimization of production planning, maintenance, and quality control within production systems.

8. **MKCS Wijewickrama, Nicholas Chileshe, Raufdeen Rameezdeen, J Jorge Ochoa (2021)**

This study investigates quality assurance (QA) in the reverse logistics supply chain (RLSC) of demolition waste (DW) within the construction industry. Despite the increasing interest in RLSC, there is limited focus on QA, particularly concerning reprocessed products' low quality. The study employs a systematic literature review (SLR) to explore elements contributing to QA in RLSC of DW. The study addresses existing gaps by proposing a conceptual framework that can serve as a foundation for enforcing QA in the RLSC of DW. The findings contribute to sustainable development by laying the groundwork for QA enforcement in RLSC of DW, with implications for both research and practice, along with recommendations for further research.

9. **Danilo Marchiori, Luís Mendes (2020)**

This study investigates the association between Knowledge Management (KM) and Total Quality Management (TQM) through a systematic and comprehensive literature review. The research aims to identify, describe, and characterize the

origins, evolution, and intellectual structures of the scientific knowledge linking KM and TQM. It reveals that KM is increasingly recognized as a key element in developing a quality culture, and well-known quality frameworks highlight the importance of KM in quality management systems. While literature suggests commonalities and shared success factors between KM and TQM, there is no consensus on the nature of their relationship. Some researchers propose a reciprocal relationship, while others see KM as an enabler for TQM or TQM as a supporter for KM.

10. Ziqiu Kang, Cagatay Catal, Bedir Tekinerdogan (2020)

This paper focuses on the application of machine learning in production lines, recognizing the importance of monitoring and ensuring the targeted quality of production processes and products. With increased digitalization, substantial data can be generated throughout the production line, and machine learning techniques are employed for analytics to enhance quality control, assess risks, and optimize costs. The study aims to identify, assess, and synthesize reported studies in this domain, offering a systematic overview of the current state-of-the-art and suggesting avenues for further research. The study not only presents a comprehensive overview of the current landscape but also highlights open problems and identifies research directions for future exploration. It contributes to the understanding of how machine learning is applied in production lines, offering insights that can guide further advancements and innovations in this field.

11. Manarbek Gulden, Kondybayeva Saltanat, Doszhan Raigul, Turarov Dauren, Abylay Assel (2020)

This paper shows outlines the challenges faced by higher education institutions (HEIs) due to external pressures and the necessity for a revaluation of their organizational structures and internal management approaches. It highlights the diversity in universities' responsiveness to these challenges and notes the existing research on best quality management practices. The paper's central focus is on institutionalism, a stream of economic thought emphasizing the analysis of institutions—norms, restrictions, and principles of behaviour within

an organization. The diversity within institutionalism is acknowledged, with distinctions such as isomorphic elements and processes of differentiation between universities. The primary objective of the paper is to conduct a systematic literature review to analyse existing research on the application of institutionalism in higher education for enhancing internal quality management

12. Lucas Schmidt Goecks, Alex Almeida dos Santos, André Luis Korzenowski (2020)

This article aims to address the scarcity of research on contemporary quality management scenarios in the 21st century by exploring the integration of big data and Industry 4.0 concepts for decision-making in quality control. The originality of the article lies in its contribution to completing categorizations and addressing previously suggested questions in the field. Employing a systematic literature review and qualitative data analysis, the study outlines a methodological framework for selecting and reviewing articles aligned with its objectives. Seventeen selected articles, classified based on existing literature categories, form the structure of the study. Importantly, the article notes that many research gaps identified in prior reviews have been addressed, and it introduces new gaps, thereby advancing the literature and concepts related to quality management and Industry 4.0. The implications extend to both theoretical development and practical applications in the field.

13. Marcio C Machado, Renato Telles, Paulo Sampaio, Maciel M Queiroz, Ana Cristina Fernandes (2019)

This paper presents a conceptual framework for performance measurement (PM) designed for the integration of supply chain management (SCM) and quality management (QM). The framework is developed through a systematic literature review on SCM and QM, identifying key performance measures related to six areas of integration: leadership, continuous improvement and innovation, sustainability performance, stakeholders, information system, and management and strategic planning. The findings contribute to supply chain quality management (SCQM) integration, providing a set of nine propositions

about performance measures that enhance the integration of SCQM. The study aims to advance quality management practices within a supply chain context, offering implications for both managerial and theoretical perspectives. It extends the concept of supply chain quality integration by focusing on key aspects of performance measurement that can improve overall supply chain performance

14. Mandeep Kaur, Kanwarpreet Singh, Doordarshi Singh (2019)

The paper has a dual purpose: firstly, to outline critical factors for total quality management (TQM) and supply chain management (SCM) practices by conducting a comprehensive literature review; and secondly, to analyze the relationships between these factors through a comparison of identified TQM and SCM practices, aiming to elucidate the concept of supply chain quality management (SCQM).

15. Bertha Viviana Ruales Guzmán, Alessandro Brun, Oscar Fernando Castellanos Domínguez (2019)

This paper conducts a systematic literature review to analyse the relationship between quality management (QM) and productivity as a performance indicator. The study covers 150 papers from 1997 to 2017, focusing on key constructs of QM practices related to productivity. The findings highlight human resource management, top management, and process management as the most relevant QM constructs related to productivity. Additionally, the review reveals that 89% of internal determinants of productivity align with proposed QM constructs, indicating that QM is a determinant factor of productivity. The study provides valuable insights for researchers, practitioners, managers, and policymakers.

16. Erlantz Allur, Iñaki Heras-Saizarbitoria, Olivier Boiral, Francesco Testa (2018)

This article provides a conceptual and empirical review of the literature exploring the connection between Quality Management (QM) and Environmental Management (EM). The review includes academic works aiming to establish conceptual similarities between QM and EM, with a focus on key practices and programs such as ISO 9001 and Total Quality Management. The scholarly literature suggests that QM practices and programs facilitate the adoption of environmental practices associated with corporate Environmental Management. However, the review also notes certain limitations and biases present in the literature. The concentration on specific detailed aspects of the linkage between QM and EM is discussed, and areas that have been overlooked and require further research are identified. The article concludes by offering implications for scholars, including suggestions for future research to enhance the understanding of the relationship between QM and EM.

17. Shweta Bajaj, Ruchi Garg, Monika Sethi (2018)

This paper aims to assess the literature on Total Quality Management (TQM) over the past 20 years, acknowledging its significant impact on business performance and recognizing its importance to businessmen, managers, practitioners, and research scholars. The systematic study involves a tabular snapshot of articles published in the specified period, including details such as year and journal of publication, application and country, statistical methods used, and the study's findings on TQM practices and impact. Utilizing Pareto Analysis, the paper identifies key TQM practices and their impact, subsequently proposing a generalized TQM framework applicable across sectors. The research identifies gaps in the literature and suggests areas for future research, providing valuable insights for academicians and future researchers seeking a comprehensive understanding of TQM in diverse contexts

18. Marco Bortolini, Francesco Gabriele Galizia, Cristina Mora (2018)

This paper address the contemporary focus in manufacturing on producing a diverse range of customized, high-quality products in flexible batch sizes. The shift is driven by dynamic market demands, short product life cycles, and the necessity for adaptability, leading to a transition from traditional manufacturing systems to Next Generation Manufacturing Systems (NGMSs). Specifically, Reconfigurable Manufacturing Systems (RMSs), a subset of NGMSs, appear well-suited to align with and address the current market trends, offering the flexibility needed to meet the demands of the evolving manufacturing environment.

19. Maria J Manatos, Cláudia S Sarrico, Maria J Rosa (2017)

This paper presents the outcomes of a systematic shedding light on the evolution of literature regarding quality management (QM) in higher education (HE). The first contribution involves a meticulous breakdown of research within the realm of HE quality management. The second, and perhaps more innovative contribution, centers on the incorporation of quality management into the global management systems of institutions. The authors posit this as a broader trend in the quality management literature evolution, empirically observed as a movement towards integrating quality management principles and practices into the governance and management systems of higher education institutions (HEIs). The analysis discerns three primary levels within HEIs: a process level, an organizational level, and a quality management principles level, with a specific emphasis on the latter. The paper concludes that there is a robust integration at all three levels.

20. João Barata, Paulo Rupino Cunha (2017)

This research outlines a research initiative focused on exploring synergies between information systems (IS) and quality management systems (QMS). The objective is to move away from the current practice where IS and QMS

lifecycles are handled independently by different teams with disconnected tools and methodologies.

The proposes a research map to guide further exploration and development in this area. The overarching goal is to create a holistic understanding that goes beyond treating IS and QMS as separate entities, aiming for a collaborative approach that leverages the strengths of both to achieve a more effective and integrated whole.

21. Vanajah Siva, Ida Gremyr, Bjarne Bergquist, Rickard Garvare, Thomas Zobel, Raine Isaksson (2016)

This paper explores the role of Quality Management (QM) in supporting the integration of sustainability considerations, particularly in areas like product development. The review identifies four key themes synthesizing research on QM's contribution to sustainable development approaches. (I) Integration of management system for supporting sustainability, (II) QM role in implementing environmental management system and overall sustainability management, (III) Intregation of sustainability consideration into daily work practices, (IV) QM support for stakeholders management and customer focus. While the majority of research has focused on the first two themes, the paper proposes avenues for future research. This includes the necessity to go beyond existing standards and management systems to drive more significant improvements and the importance of empirical evidence regarding the impact of integrated management systems on environmental performance.

22. Omar Sabbagha, Mohd Nizam Ab Rahman, Wan Rosmanira Ismail, Wan Mohd Hirwani Wan Hussain (2016)

This paper delves into the automotive industry's shift towards after-sales services as a strategic response to global market changes, including declining profit margins and longer vehicle life spans. After-sales services are increasingly recognized as recession-resistant and have emerged as significant contributors to revenue and customer loyalty for automakers. The paper

reviews key performance indicators (KPIs) in the automotive after-sales domain, exploring pertinent models developed to assess these indicators. Additionally, it examines the implementation of quality management systems in automotive manufacturers and investigates the link between these systems and after-sales services. It proceeds to discuss contemporary quality management systems in the automotive industry and their impact on customer satisfaction.

23. Amal Hayati Ishak, Muhamad Rahimi Osman (2016)

This article focuses on the integration of Islamic values into quality management, a perspective that has received less attention compared to Western and Japanese perspectives. The foundation of this integration is rooted in a prophetic tradition that encourages diligence in work, dating back more than 1400 years. Despite the acknowledgment of the significance of values in quality management, there has been limited research on their specific application in Islamic contexts. The article reviews the literature to identify various Islamic values associated with quality management practices. It notes that while some studies have linked these values, there is a lack of comprehensive analysis and categorization. The article addresses this gap by compiling and categorizing Islamic values related to quality management practice based on Quranic verses or Prophetic traditions. It employs a simple frequency analysis matrix to propose a set of categories.

24. Tricia Ryan (2015)

This paper comprehensively reviews the literature on quality assurance in global higher education, covering key aspects such as accreditation, models of quality assurance (QA), and the conceptualization of quality and quality assurance. Additionally, the paper conducts a review of research on the effectiveness of quality assurance practices, with a specific emphasis on the involvement of students in quality assurance processes. The examination contributes to a deeper understanding of how accreditation, diverse QA models, and student engagement play pivotal roles in ensuring and assessing the quality of higher education globally.

25. KJ Kucche, SS Jamkar, PA Sadgir (2015)

The quality of water used for making concrete is important because it can affect the properties of the concrete. Impurities in water can affect the setting time, compressive strength, and durability of concrete. The limits of impurities in water for making concrete are specified by various standards organizations. The use of impure water for concrete mixing can have both positive and negative effects. In general, it is best to use potable water for making concrete. If non-potable water must be used, it should be tested to ensure that it meets the requirements of the applicable standard.

26. Nadine Hietschold, Ronny Reinhardt, Sebastian Gurtner (2014)

This paper addresses the challenges in measuring critical success factors (CSFs) during the implementation of Total Quality Management (TQM) in organizations. Through a systematic literature review of 145 studies, the paper identifies 11 distinct dimensions of CSFs. It proposes a three-level framework and a comprehensive set of measurement instruments to aid researchers and managers in effectively assessing each critical dimension. The results are validated through a focus group of quality managers. The study highlights the relevance of human-related factors, which are often overlooked, and discusses deficiencies in current measurements. Overall, the paper contributes to structuring and advancing the research field on measuring CSFs in TQM implementation.

27. Abdul Talib Bon, Esam MA Mustafa (2013)

This paper is to conduct a literature review on the association between Total Quality Management (TQM) and innovation within service organizations. The paper focuses on the most recent studies that have explored this relationship, shedding light on the TQM practices specific to service organizations. The

overarching goal is to develop a research conceptual framework that outlines the interplay between TQM and innovation in the context of service industries.

28. Muris Lage Junior, Moacir Godinho Filho (2012)

This article conducts a comprehensive review of the literature on production planning and control (PPC) for remanufacturing, with three primary objectives: (1) to assess whether previously identified gaps in the literature have been addressed, (2) to classify the literature to enhance understanding and identify avenues for future research, and (3) to serve as a valuable resource for scholars and practitioners in the field. The review includes examination and classification of 76 papers. The findings indicate that none of the studies simultaneously addresses all complicating characteristics of remanufacturing, emphasizing the need for more practical research. Additionally, the review identifies specific gaps in existing literature, including the absence of studies on forecasting, aggregate planning, master production scheduling, ordering systems, capacity planning, and inventory control, considering various complicating factors related to remanufacturing processes.

29. Ashwini Sharma, Dixit Garg, Ashish Agarwal (2012)

This paper addresses the intersection of supply chain management and quality management, recognizing the limited exploration of their interlinking perspectives despite the extensive research in both fields. In today's competitive environment, maintaining high-quality products is crucial. The authors emphasize the need for focused approaches to evaluate quality management issues within both inter and intra-organizational supply chain contexts. Through a comprehensive review of open literature, the authors identify numerous quality-related issues in supply chain management that warrant immediate attention from researchers. The paper proposes that enhancing the quality of the supply chain itself can offer breakthrough solutions at various management levels, addressing issues such as product recall and delivery delays across industries. The study presents an in-depth analysis of existing research in supply chain management and aims to establish

conceptual connections between supply chain management and quality management through a literature review.

30. Faisal Talib, Zillur Rahman, MN Qureshi (2012)

This paper shows the service organizations have increasingly adopted Total Quality Management (TQM) as a strategic tool to enhance service quality. This paper explores the theory and concept of TQM, its benefits, and various aspects of service components and classification. It delves into the literature on TQM implementation in selected service industries, emphasizing its impact on business performance, customer satisfaction, and profitability. The study aims to contribute to TQM theory, highlight its role in the service sector, and provide insights into different service components. The findings offer valuable insights for business managers and quality practitioners, facilitating a better understanding of TQM and its implementation in the service sector. The paper concludes by suggesting avenues for future research in this domain.

31. Heiko A Von Der Gracht (2012)

This paper focuses on the crucial role of consensus measurement in Delphi research—a method widely used to aggregate expert opinions on future developments. Over the past six decades, Delphi has been successful in collecting expert insights, and this paper aims to review and analyze how consensus (and dissent) has been measured in the Delphi technique. The review spans various criteria and measures used since the technique's emergence in the 1960s, emphasizing the relationship between consensus measurement and stability over Delphi rounds. The literature review identifies and classifies 15 types of measures for consensus (and stability). The research reveals deficits in the practice and rigor of consensus measurement in Delphi studies, including mistakes in statistical tests. The paper provides a comprehensive understanding of the consensus concept, highlights strengths and weaknesses, and offers lessons to enhance the quality of future consensus-oriented Delphi research.

32. Qin-Qin Lo, Kah-Hin Chai (2012)

This paper aims to investigate core themes in the field of quality management by conducting a quantitative analysis of research papers published in the journal Total Quality Management and Business Excellence. The research utilizes bibliographic analysis along with conventional literature reviews, employing methodologies such as bibliometrics and social network techniques. The analysis reveals relationships between different publications and tracks developments over three distinct periods.

33. Ly Yaqiong, Lee Ka Man, Wu Zhang (2011)

This paper presents the first comprehensive academic literature review of the application of fuzzy theory in quality management (QM) for distributed manufacturing systems. Recognizing the significance of fuzzy theory in this context and the lack of a systematic review, the study covers more than 20 journals and utilizes five prominent databases in the research area. Employing a clustering analysis method, the paper proposes a classification scheme. Noteworthy findings include the observation that quality improvement has the highest number of publications in recent years. Additionally, the main fuzzy techniques adopted in quality improvement are fuzzy decision-making and fuzzy numbers.

34. Alain Yee-Loong Chong, Keng-Boon Ooi, Binshan Lin, Pei-Lee Teh (2010)

This article explores the impact of total quality management (TQM) and knowledge management (KM) on the adoption of collaborative commerce (c-commerce). Through an extensive literature review, the study develops an integrated model of TQM and KM to assess their influence on c-commerce adoption. The findings contribute to the research literature on TQM, KM, and innovation adoption, proposing a new integrated model that incorporates practices from both TQM and KM theories. The integrated model aims to

examine whether the practices derived from TQM and KM theories lead to improvements in the adoption of c-commerce. The study suggests that organizations looking to adopt or enhance the adoption of c-commerce can make informed managerial decisions based on TQM and KM practices identified in the research. The integrated model serves as a methodological example, allowing practitioners to track the effects of TQM and KM on c-commerce adoption.

35. Fauzia Siddiqui, Abid Haleem, S Wadhwa (2009)

This paper addresses the growing interest in the integration of Flexible Systems (FS), Total Quality Management (TQM), and Supply Chain Management (SCM) in the context of global market conditions. The integration process of these philosophies is explored through a comprehensive literature review, emphasizing categories such as types of flexibility and Total Quality Management. While specific empirical studies have been conducted in the past, this paper delves into relatively unexplored categories, offering potential for further exploration and research. The classification developed in this paper provides a broader perspective on supply chains and Flexible Systems within the context of TQM. The focus is on categories that have received less attention, contributing to a more comprehensive understanding of the integration of these management philosophies.

36. Laurens K Hessels, Harro Van Lente (2008)

This paper provides a systematic reflection on the concept of 'Mode 2 knowledge production' proposed by Gibbons and Nowotny. The authors conduct a comprehensive review of its reception in the scientific literature and compare it with seven alternative perspectives on evolving science systems. While acknowledging the identification of important trends by the 'Mode 2' diagnosis, the paper argues that the concept is marred by significant conceptual problems. The authors suggest that it is imperative to disentangle the five major claims constituting 'Mode 2' and subject each to individual investigation. This

approach aims to address the shortcomings and refine the understanding of the dynamics within contemporary knowledge production.

37. Kanthi MN Muthiah, Samuel H Huang (2006)

The paper addresses the challenges posed by globalization to the manufacturing sector and emphasizes the economic significance of designing and operating manufacturing systems. Despite a substantial amount of literature on manufacturing productivity improvement, the paper notes the unpredictability of factory performance due to a lack of widespread agreement on the best practices for improvement, as highlighted by Gershwin in 2000. The importance of productivity measurement and improvement is underscored, with the understanding that improvement is contingent on effective measurement.

38. Mohd Ashari Idris, Mohamed Zairi (2006)

This paper discusses the evolution of Total Quality Management (TQM) into a sustainability phase, aligning with universal business strategies in the new millennium. The critical success factors of TQM are explored in the context of changing environmental dynamics. Recognizing the need for continuous improvement and sustainability in TQM initiatives, the paper proposes a framework for sustaining TQM. It traces the development of the sustainability concept, outlines a research framework incorporating quality orientation, performance measurement, change management, and organizational theories, and highlights strategies for effective TQM sustainability. The paper also presents theoretical enablers and inhibitors, proposes a research model, formulates research propositions, and outlines a methodology for empirical research.

39. Vijay R Kannan, Keah Choon Tan (2005)

This study explores the relationships between three key approaches to improve operations performance: just-in-time (JIT), supply chain management (SCM), and quality management. While these approaches are sometimes treated as independent, the study investigates the extent to which they are correlated and how they collectively impact business performance. The research aims to determine whether these three strategies can be integrated for a more comprehensive and effective operations strategy. Empirical findings indicate that there are linkages between how organizations view and implement JIT, total quality management (TQM), and supply chain management as part of their operations strategy. The study reveals that commitment to quality and an understanding of supply chain dynamics have the most significant impact on business performance. This suggests that organizations benefit from integrating these approaches and recognizing their interdependencies rather than treating them as distinct and isolated strategies.

40. Viktoria Kis (2005)

This paper explores the current academic and policy literature on quality assurance in tertiary education. It offers a typology of existing national quality assurance mechanisms and discusses the advantages and disadvantages of different quality assurance systems. Additionally, the paper presents empirical evidence on the effects of quality assurance mechanisms. A notable limitation is acknowledged: the paper primarily focuses on quality assurance systems that assess the quality of teaching and learning rather than research. This choice is attributed to the existing literature's emphasis on teaching and learning quality issues compared to research. The paper justifies this focus by highlighting the well-established quality assessment mechanisms for research, such as peer reviews, publications in refereed journals, conferences, and research funding allocations. The absence of a similar open scholarly community for teaching and learning evaluation is presented as a rationale for concentrating on this aspect of quality assurance.

41. Mary Cruickshank (2003)

The Total Quality Management (TQM) and Continuous Quality Improvement (CQI) in the higher education sector, with a specific focus on institutions in the US, UK, and Australia. While much has been written about TQM and CQI in manufacturing and healthcare over the past decade, this review highlights a relative lack of attention to their application in higher education. The study traces the evolution of TQM in education from early writings to the 1990s, emphasizing that the development of TQM in the education sector has not kept pace with that in manufacturing and healthcare industries.

42. Hale Kaynak (2003)

This paper shows total quality management (TQM) has yielded mixed results regarding its impact on organizational performance. This study addresses this inconsistency by examining the direct and indirect effects of TQM practices on various performance levels using a comprehensive research model. The proposed model and hypotheses were tested using cross-sectional mail survey data from US firms. The findings support the proposed hypotheses, indicating that TQM practices positively influence organizational performance. The implications of this study for both researchers and practitioners are discussed, and further research directions are outlined.

43. Lai-Kow Chan, Ming-Lu Wu (2002)

This paper provides a literature review of Quality Function Deployment (QFD) based on a reference bank comprising approximately 650 QFD publications sourced from various outlets. It begins with a brief overview of the origin and historical development of QFD, emphasizing its evolution in Japan and the United States. The paper then lists QFD organizations, software, and online resources. A categorical analysis covers QFD's functional fields, applied industries, and methodological development. The paper concludes by suggesting ten informative QFD publications, aiming to facilitate easy reference

for researchers and practitioners and contribute to the continued development of QFD.

44. SE Campana (2001)

This review addresses the challenges and methods associated with age determination in calcified structures, focusing on structures that exhibit periodic growth increments suitable for age determination at various scales (annual or daily). The review emphasizes the importance of ensuring accuracy and quantifying precision in age determination, considering both large-scale production ageing and small-scale research projects. Quality control monitoring is emphasized for detecting and quantifying ageing errors, and the importance of reference collections for quality control and cost reduction is highlighted. The review acknowledges that some level of random ageing error is inevitable, but statistical methods like "digital sharpening" can often correct such errors after the fact.

45. Daniel I Prajogo, Amrik S Sohal (2001)

This paper delves into the relationship between the implementation of Total Quality Management (TQM) and innovation performance, addressing the controversy that exists in the literature regarding this connection. To address this controversy, the paper develops a research framework, which is preceded by a theoretical discussion on the multidimensionality of TQM in diverse organizational contexts. The core proposition of the framework is that the implementation of TQM practices is influenced by both the external and internal environment of the organization, as well as the adopted strategy. The TQM model implemented is then reflected in various outcomes related to quality performance and innovation performance.

46. Danny Samson, Mile Terziovski (1999)

Total Quality Management (TQM) has been widely implemented globally for enhancing competitiveness, but its success has varied. This study addresses gaps in the literature, particularly the lack of empirical testing of TQM effectiveness. Using data from 1200 Australian and New Zealand manufacturing organizations, the study aims to explore the relationships between TQM practices and operational performance. The study finds a significant cross-sectional relationship between TQM practice intensity and organizational performance, with certain categories of TQM practices, including leadership, management of people, and customer focus, being strong predictors of operational performance. The results align with literature emphasizing the importance of behavioral factors, such as executive commitment and employee empowerment, over TQM tools and techniques in achieving competitive advantage.

47. Brian Fynes (1998)

This research addresses the field of quality management practices, highlighting the evolution of theory development and empirical research. The review underscores that theory development and rigorous empirical research in quality management is a relatively recent phenomenon. Defining the term "quality" has been challenging and somewhat imprecise. Empirical studies initially focused on identifying core quality practices. However, the review acknowledges cumulative shortcomings in the initial literature, suggesting that research in quality management is still in a preliminary stage of development. Despite these early limitations, recent empirical research has contributed to theory development and testing in quality management, especially within the context of contingency perspectives. This implies that there is potential for further advancement and refinement in the field of quality management practices.

48. Enrique Del Castillo, Arnon M Hurwitz (1997)

This paper conducts a literature review on "Run-to-Run" (R2R) control techniques, which have gained prominence in controlling semiconductor manufacturing processes in recent years. These techniques integrate response surface, statistical process control, and feedback control methods. The review is approached from a statistical and control engineering perspective. The focus of the paper is on self-tuning controllers within the context of single-input-single-output (SISO) scenarios in R2R applications. The study introduces two self-tuning controllers designed not only to compensate for typical process shifts but also to address cases where deterministic trends and/or autocorrelation exist in the observed response, indicating the presence of process dynamics.

49. Thomas C. Powell (1995)

The article begins by noting the widespread adoption of Total Quality Management in business thinking but highlights that its role as a strategic resource has not been thoroughly examined in the context of strategic management research. Powell's study investigates whether TQM features commonly associated with it, such as quality training, process improvement, and benchmarking, actually lead to a competitive advantage. The findings suggest that these features do not consistently produce an advantage. Instead, the study emphasizes the importance of certain tacit, behavioural, and imperfectly imitable features of TQM, including an open culture, employee empowerment, and executive commitment, as potential sources of competitive advantage.

50. John C Anderson, Manus Rungtusanatham, Roger G Schroeder (1994)

This research highlights the existing form of the Deming management method, which comprises 14 points providing guidelines for organizational behaviour and quality management practices. Despite its evident impact on global management theory and industrial practices, there is a noted gap in articulating

the Deming management method's theoretical contribution and foundation. While its influence on practical management is clear, its theoretical underpinnings are yet to be fully elucidated. The authors propose and articulate a theory of quality management to systematically describe and explain the effects of implementing the Deming management method. This theory is developed through a conceptual synthesis of Deming's writings, literature on the Deming management method, practical observations, and insights gleaned from a Delphi study involving experts in the Deming management method. The paper traces the method's development, contextualizes it within theoretical frameworks, outlines the theory formulation process, and presents an underlying theory of quality management.

CHAPTER 3

RESEARCH METHODOLOGY

The data need for the study is collected from the employees, through questionnaire. Analysis and interpretation has been done by using the statistical tools and data presented through tables and charts.

3.1: RESEARCH DESIGN

The study was based on survey method. The aim of the study is to find production process and quality control.

3.2: SAMPLE DESIGN

A sample design is a definite plan for obtaining a sample from a given population. Convenience sampling method used in selected samples.

3.3: PERIOD OF STUDY

This study on production process and quality control is conducted for a period of 1 month project is based on the responses collected from the 102 participants in the 7 days time period.

3.4: SAMPLE SIZE

The sample size of this study is 102

3.5: DATA COLLECTION

The data collected for the study consists of both primary and secondary data.

PRIMARY DATA

The primary data for this study was collected through questionnaire.

SECONDARY DATA

Secondary data for this study was collected from.

- Precisely published records, statistics, research reports and documents.
- Books, Periodical and Websites.

3.6: QUESTIONNAIRE

In this study the researcher have used a questionnaire consisting of twenty multiple choice based questions.

3.7: TOOLS USED FOR ANALYSIS

Percentage Analysis, Hypothesis Testing, Chi-square Test, Correlation are used as statistical tools for the analysis.

3.8: GRAPHICAL REPRESENTATION OF DATA

Graphical Representation tool such as Bar Graphs and Pie charts have been used for the data analysis.

CHAPTER - 4

DATA ANALYSIS AND INTERPRETATION

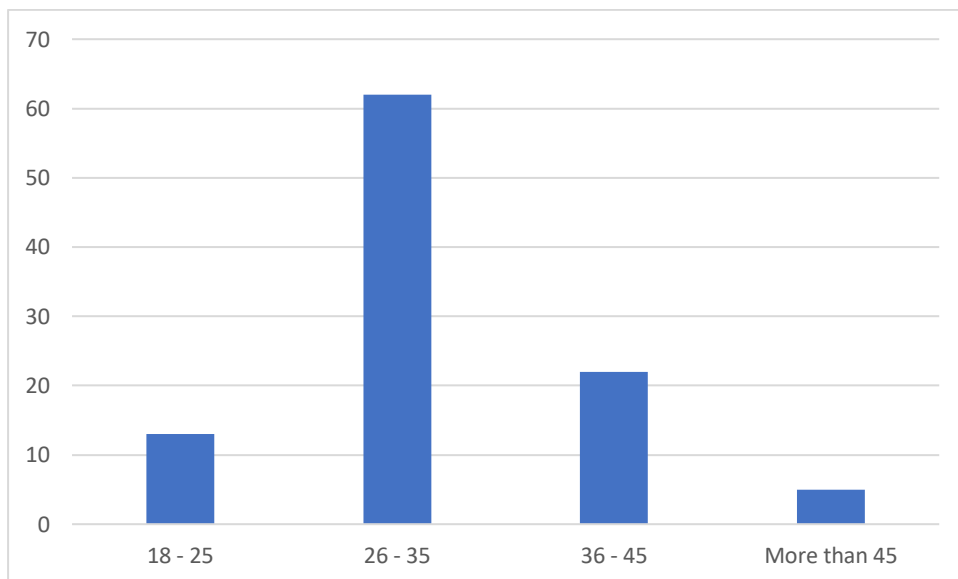
4.1. PERCENTAGE ANALYSIS

1. AGE OF THE RESPONDENT

TABLE NO. 4.1.1:

AGE	NO.OF. RESPONDENT	PERCENTAGE
18- 25	13	12.7%
26- 35	62	60.8%
36- 45	22	21.6%
MORE THAN 45	5	4.9%
TOTAL	102	100 %

CHART NO: 4:1:1



INTERPRETATION:

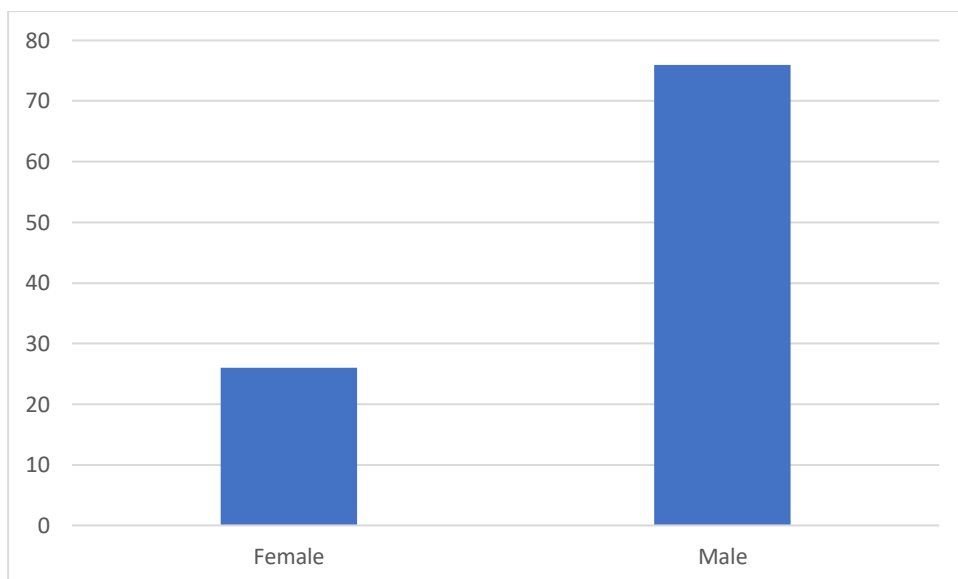
From the above table 12.7% of the respondent are of age group of 18- 25 and 60.8% of the respondent are age group of 26-35 and 21.6% of the respondent are age group of 36-45 and 4.9% of the respondent are age group pf More than 45.

2. Gender of the respondent

TABLE NO. 4.1.2:

GENDER	NO.OF. RESPONDENT	PERCENTAGE
MALE	76	74.5%
FEMALE	26	25.5%
Total	102	100 %

CHART NO:4:1:2



INTERPRETATION:

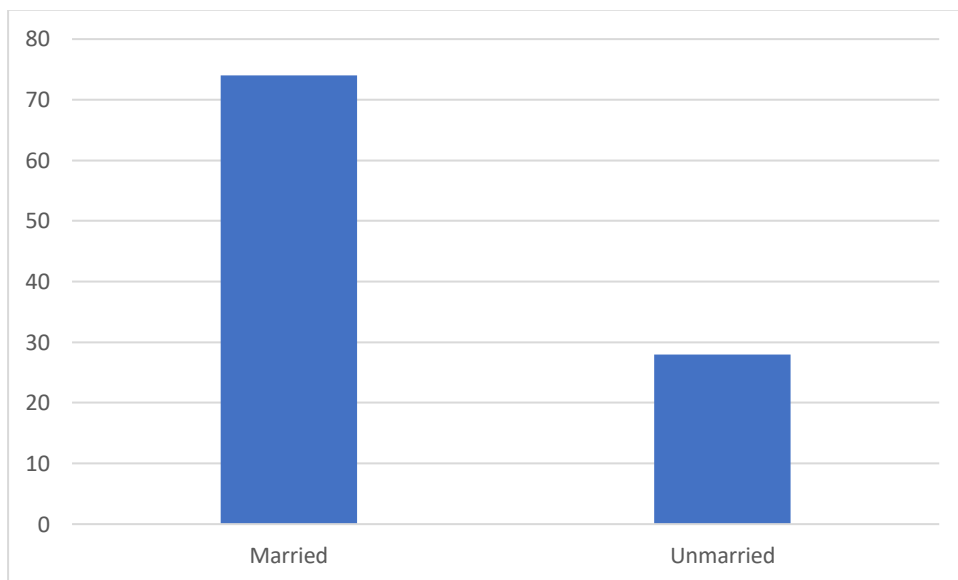
From the above table 74.5% of the respondent are Male category and 25.5% of the respondent are Female category.

3. Marital status of the respondent

TABLE NO. 4.1.3:

GENDER	NO.OF. RESPONDENT	PERCENTAGE
MARRIED	74	72.5%
UNMARRIED	28	27.5%
Total	102	100 %

CHART NO: 4:1:3



INTERPRETATION:

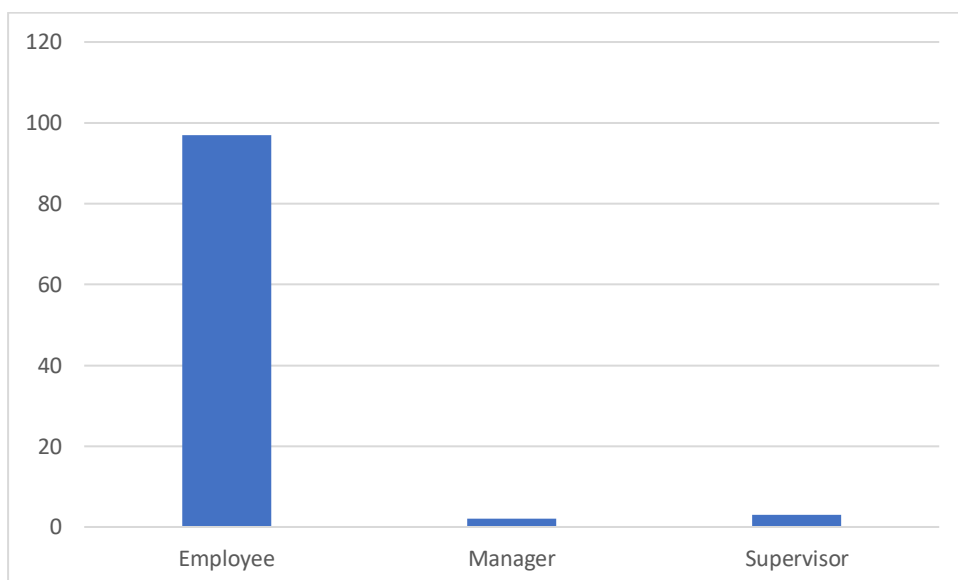
From the above table 72.5% of the respondent are selected Married and 27.55 of the respondent are selected Unmarried.

4. _____ is your position in company

TABLE NO. 4.1.4:

OPTIONS	NO. OF. RESPONDENT	PERCENTAGE
EMPLOYEE	97	95%
SUPERVISOR	3	3%
MANAGER	2	2%
OFFICER	0	0%
TOTAL	102	100 %

CHART NO: 4:1:4



INTERPRETATION:

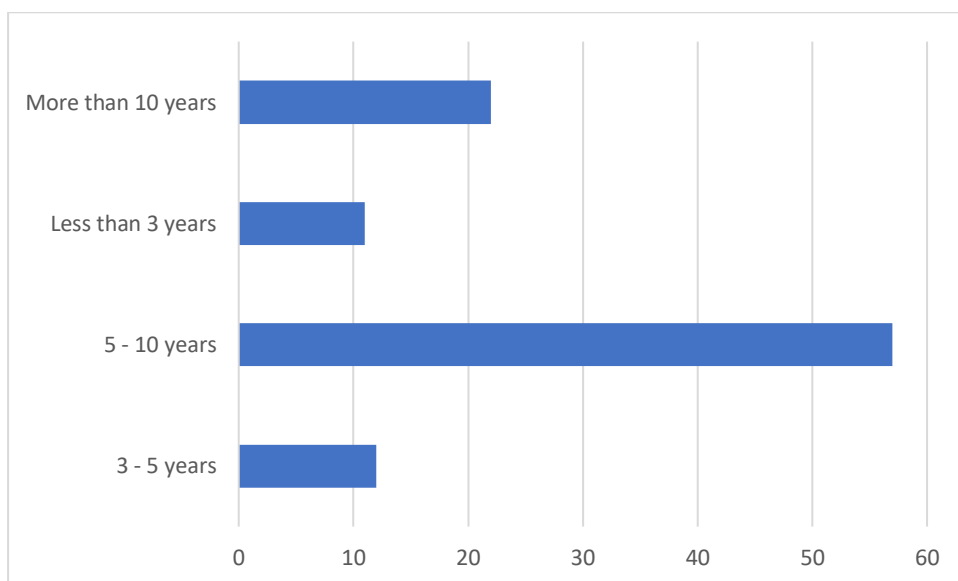
From the above table 95% of the respondent are Employee and 3% of the respondent are Supervisor and 2% of the respondent are Manager.

5. How much experience do you have ?

TABLE NO. 4.1.5:

Option	Number of respondents	percentage
3 - 5 years	12	11.8%
5- 10 years	57	55.8%
Less than 3 year	11	10.7%
More than 10 years	22	21.6%
Total	102	100 %

CHART NO: 4:1:5



INTERPRETATION:

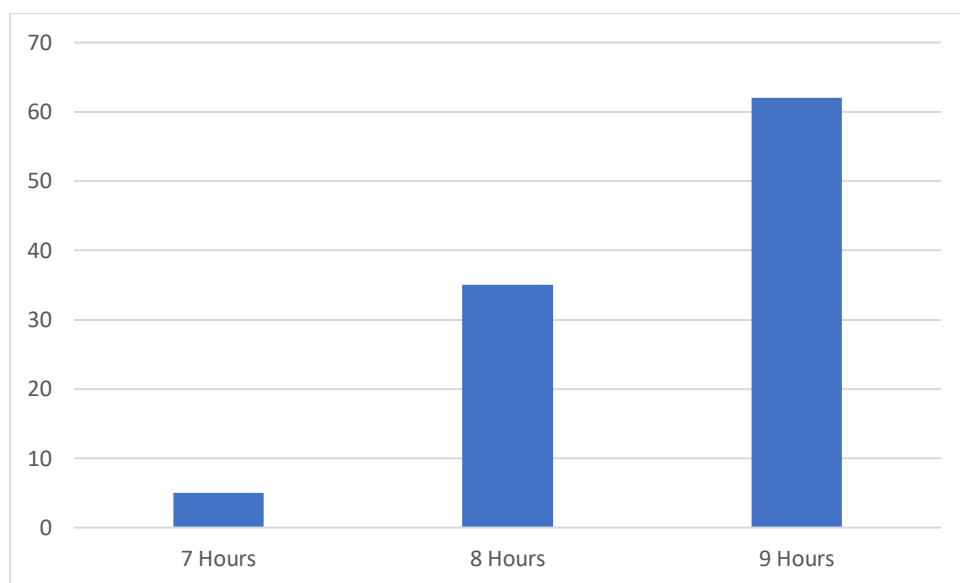
From the above table 11.8% of the respondent are selected 3 -5 years and 55.8% of the respondent are selected 5- 10 years and 10.7% of the respondent are selected Less than 3 years and 21.6% of the respondent are selected More than 10 years.

6. How many hours do you work in your company

TABLE NO.4.1.6:

Option	Number of respondents	percentage
6 Hours	0	0%
7 Hours	5	4.9%
8 Hours	35	32.4%
9 Hours	62	62.7%
Total	102	100 %

CHART NO: 4:1:6



INTERPRETATION:

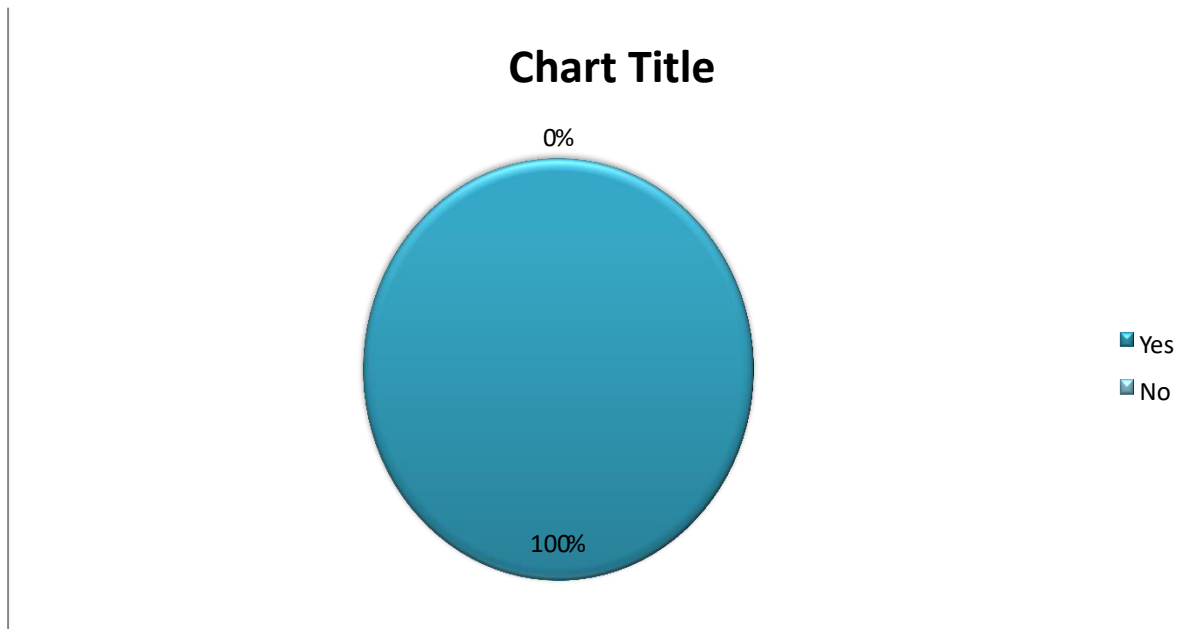
From the above table 32.4% of the respondent are selected 8 Hours and 62.7% of the respondent are selected 9 Hours and 4.9% of the respondent are selected 6 Hours.

7. Do they collect data to measure the performance of operation or process ?

Table NO: 4:1:7

Options	No of respondents	Percentage
Yes	102	100%
No	0	0%
Total	102	100 %

CHART NO: 4:1: 7



INTERPRETATION:

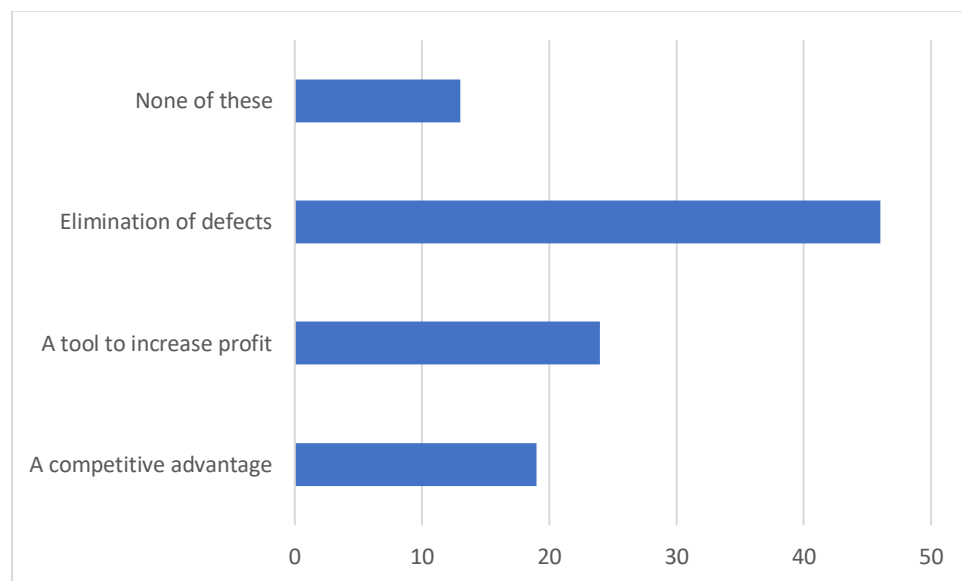
From the above table 100% of the respondent are selected Yes

8. What is your organization perception of quality ?

TABLE NO. 4.1.8:

Options	No of respondents	Percentage
Elimination of defects	46	45%
A tool to increase profit	24	23.5%
A competitive advantage	19	18.6%
None of these	13	12.7%
Total	102	100 %

CHART NO: 4:1: 8



INTERPRETATION:

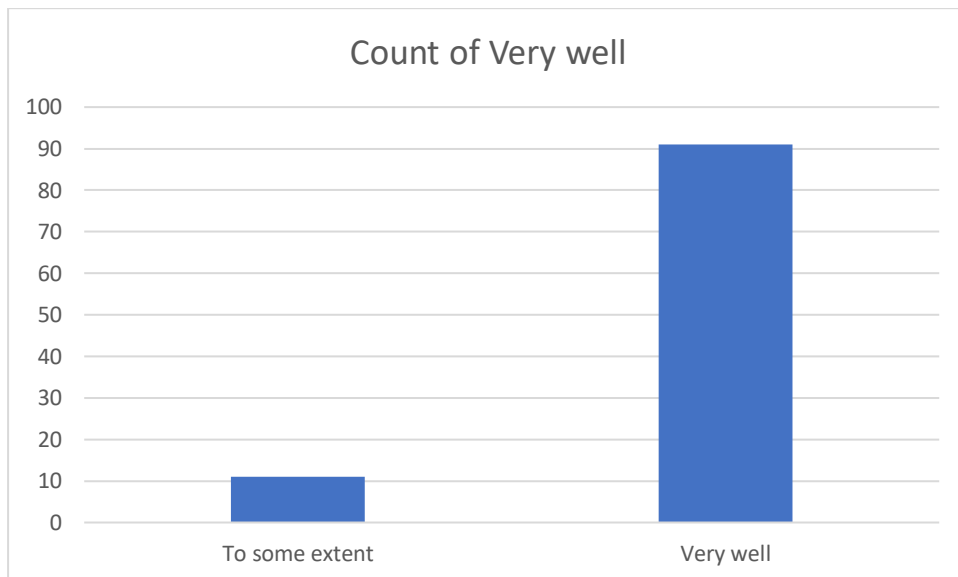
From the above table 45% of the respondent are selected Elimination of defects and 23.5% of the respondent are selected A tool to increase profit and 18.6% of the respondent are selected A competitive advantage and 12.7% of the respondent are selected None of these.

9. Do you think quality management will work in your organization ?

TABLE NO. 4.1.9:

Options	No of respondents	Percentage
Very well	91	89.2%
To some extent	11	10.7%
Won't work	0	0%
Can't say	0	0%
Total	102	100 %

CHART NO :4 :1: 9



INTERPRETATION:

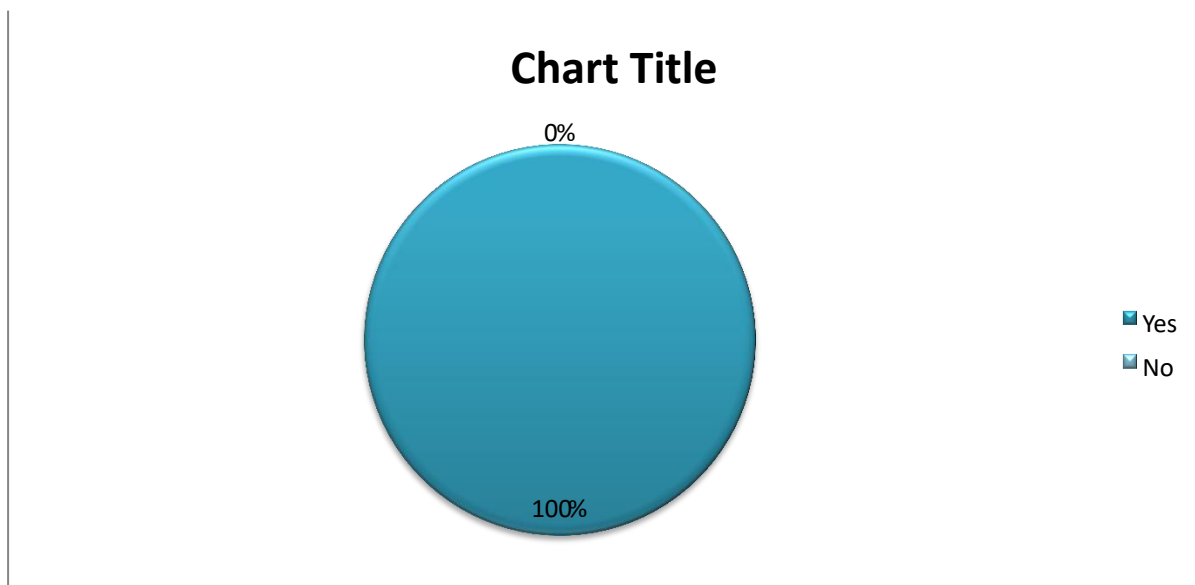
From the above table 89.2% of the respondent are selected Very well and 10.7% of the respondent are selected To some extent.

10. Do they have a system for gathering suggestions ?

NO. 4.1.10:

Options	No of respondents	Percentage
Yes	102	100%
No	0	0%
Total	102	100 %

CHART NO: 4:1:10



INTERPRETATION:

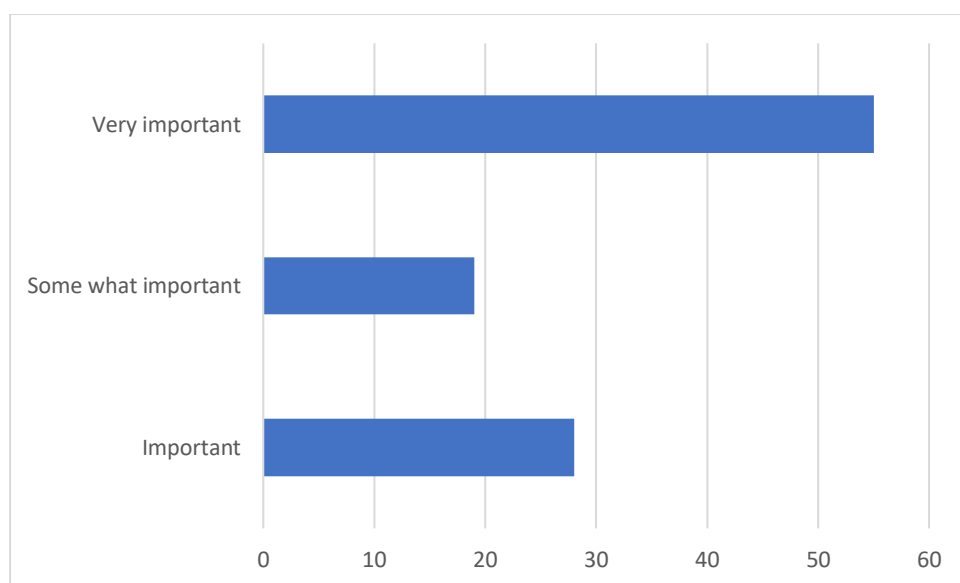
From the above table 100% of the respondent are selected Yes

11. How would you rate the importance of product/ service quality ?

TABLE NO. 4.1.11:

Option	No of respondents	percentage
Very important	55	53.9%
Important	28	27.4%
Some what important	19	18.6%
Not important	0	0%
Total	102	100%

CHART NO: 4:1: 11



INTERPRETATION:

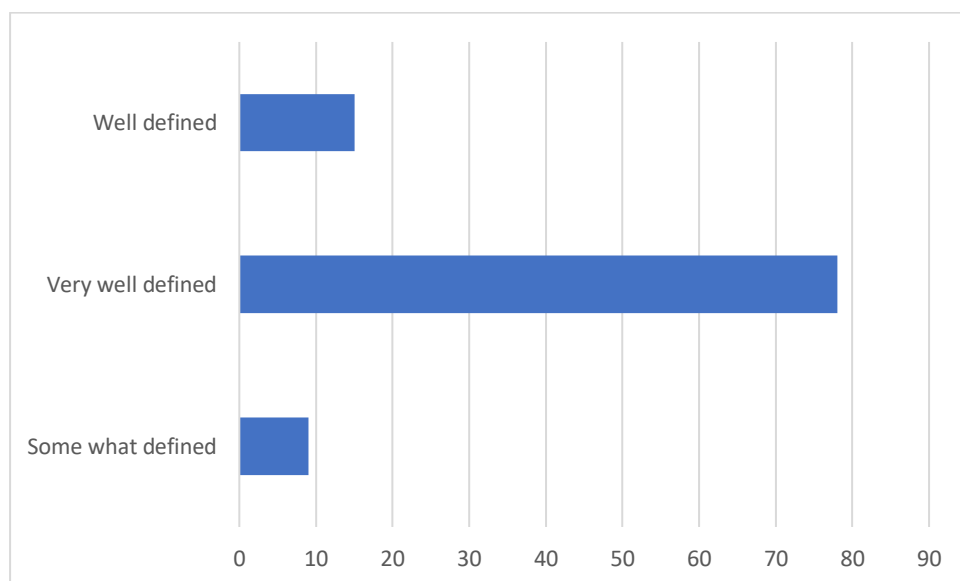
From the above table 53.9% of the respondent are selected Very important and 27.4% of the respondent are selected Important and 18.6% of the respondent are selected Some what important.

12. How well defined are the quality control procedures in your organization ?

TABLE NO: 4:1:12

Option	No of respondents	percentage
Very well defined	78	76.4%
Well defined	15	14.7%
Some what defined	9	8.8%
Poorly defined	0	0%
Total	102	100 %

CHART NO: 4:1:12



INTERPRETATION:

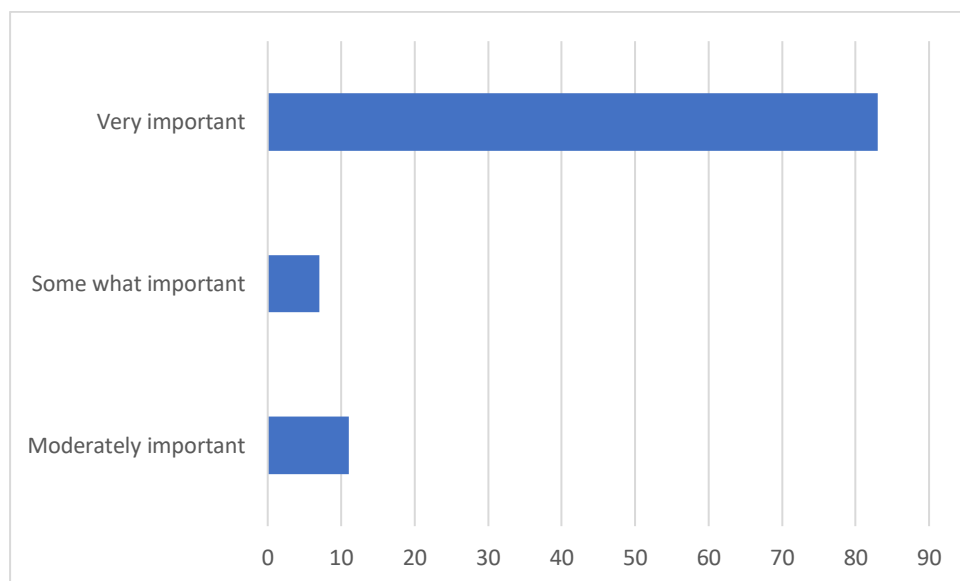
From the above table 76.4% of the respondent are selected Very well defined and 14.7% of the respondent are selected Well defined and 8.8% of the respondent are selected Some what defined.

13. How important are strong supplier relationships to the success of your production process ?

TABLE NO: 4:1:13

Option	No of respondents	percentage
Very important	83	81.3%
Moderately important	11	10.7%
Some what important	7	6.8%
Not important	0	0%
Total	108	100%

CAHRT NO:4 :1: 13



INTERPRETATION:

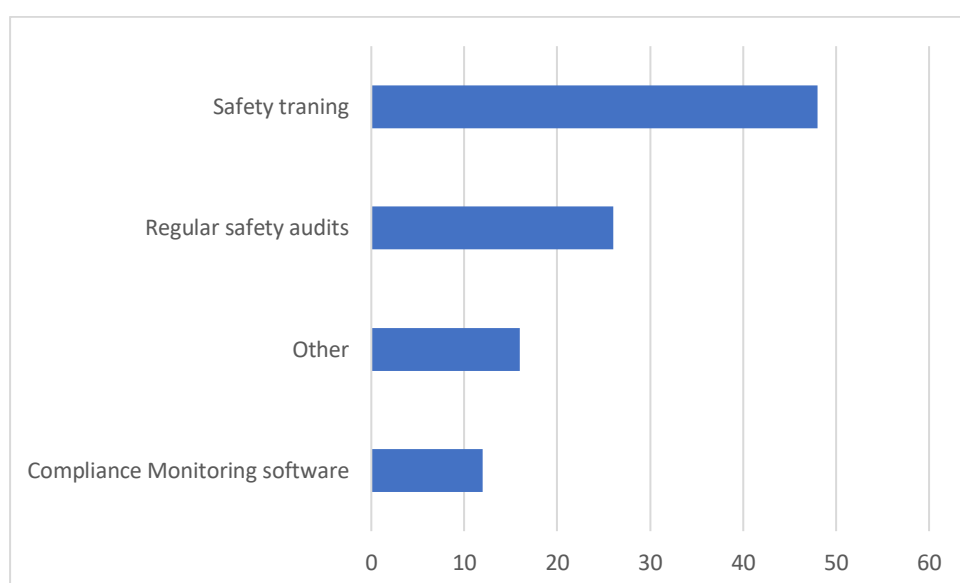
From the above table 81.3% of the respondent are selected Very important and 10.7% of the respondent are selected Moderately important and 6.8% of the respondent are selected Some what important.

14. Hoe dose your organization ensure safety and regulatory compliance in the production process ?

TABLE NO: 4:1:14

Option	No of respondents	percentage
Regular safety audits	26	25.4%
Safety training	48	47.6%
Compliance Monitoring software	12	11.7%
Other	16	15.6%
Total	108	100 %

CHART NO: 4:1:14



INTERPRETATION:

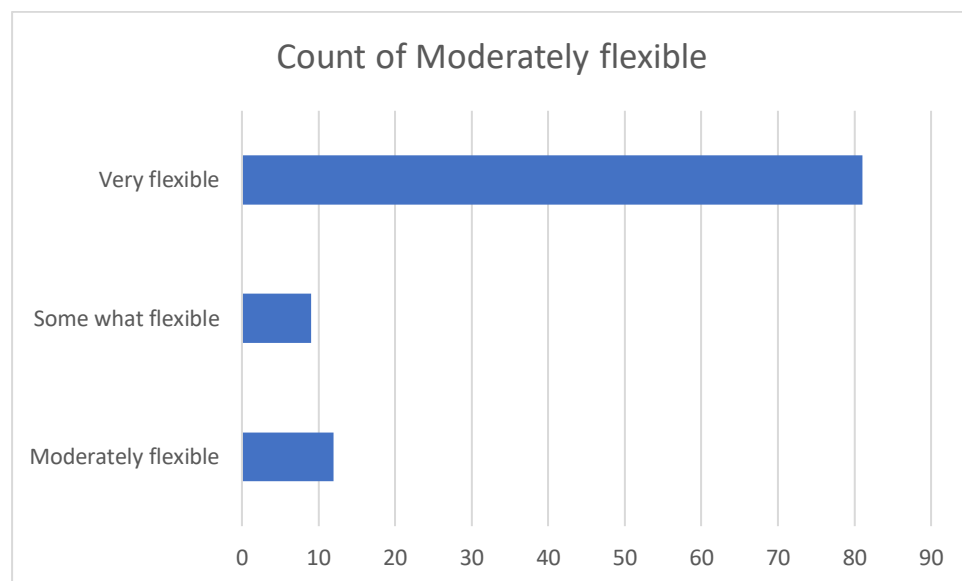
From the above table 25.4% of the respondent are selected Regular safety audits and 47.6% of the respondent are selected Safety tanning and 11.7% of the respondent are selected Compliance monitoring software and 15.6% of the respondent are selected other.

15. How adaptable is your production process to change in production process to change in product demand or design specifications ?

TABLE N0: 4:1:15

Option	No of respondents	percentage
Very flexible	81	79.4%
Some what flexible	9	8.8%
Moderately Flexible	12	11.7%
Very inflexible	0	0%
Total	102	100%

CHART NO: 4:1 :15



INTERPRETATION:

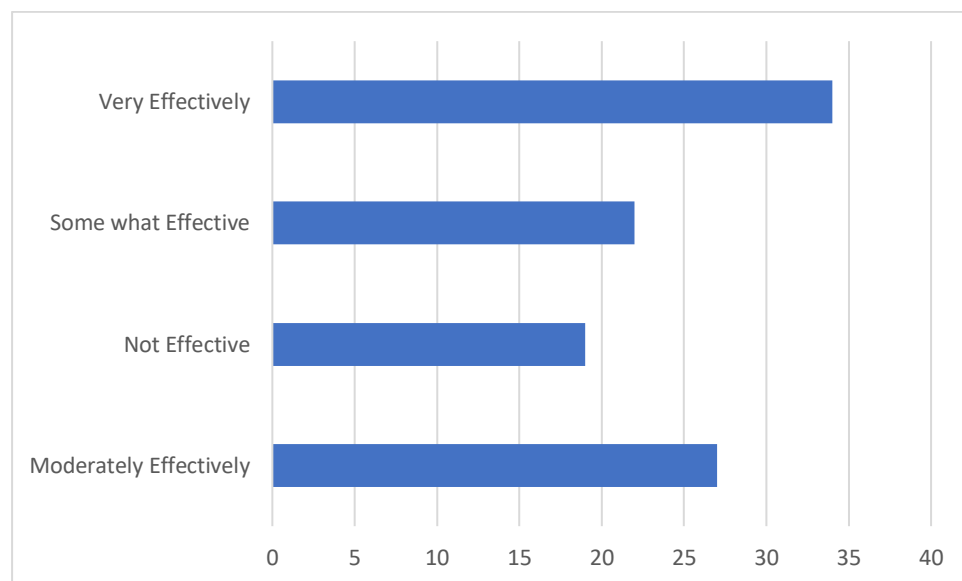
From the above table 79.4% of the respondent are selected Very flexible and 8.8% of the respondent are selected Some what flexible and 11.7% of the respondent are selected Moderately flexible.

16. How effectively do different departments communicate and collaborate in the production process ?

TABLE NO: 4:1:16

Option	No of respondents	percentage
Very Effectively	34	33.3%
Some what Effectively	22	21.5%
Moderately Effectively	27	26.4%
Not Effectively	19	18.6%
Total	102	100 %

CHART NO: 4:1:16



INTERPRETATION:

From the above table 33.3% of the respondent are selected Very effectively and 21.5% of the respondent are selected some what effectively and 26.4% of the respondent are selected Moderately effectively and 18.6% of the respondent are selected Not effectively.

17. Does your organization provide training programs to enhance the skills and knowledge of employees involved in production process ?

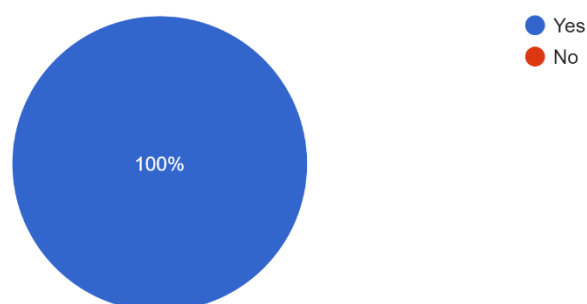
TABLE NO: 4:1:18

Option	No of respondents	percentage
Yes	102	100%
No	0	0%
Total	102	100 %

CHART NO: 4:1: 18

Does your Organization provide training programs to enhance the skills and knowledge of employees involved in production process ?

102 responses



INTERPRETATION:

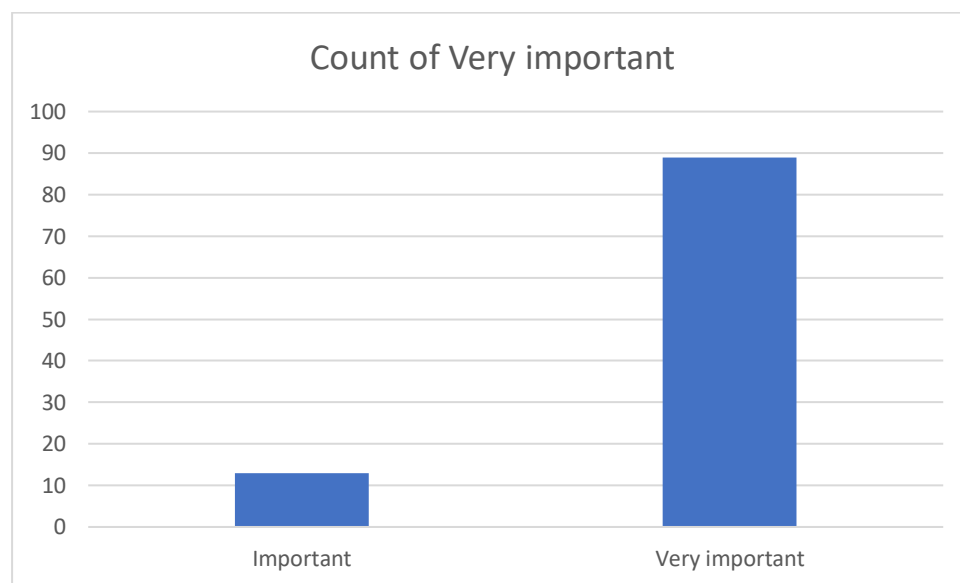
From the above table 100% of the respondent are selected Yes

18. How would you rate the importance of customer satisfaction ?

TABLE NO: 4:1:18

Option	No of respondents	percentage
Very Important	89	87.2%
Important	13	12.7%
Somewhat important	0	0%
Not important	0	0%
Total	102	100 %

CHART NO :4 :1:18



INTERPRETATION:

From the above table 87.2% of the respondent are selected Very Important and 12.7% of the respondent are selected important.

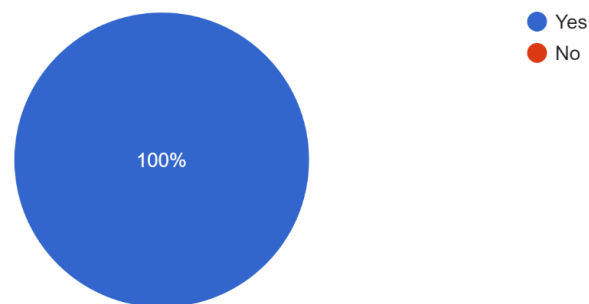
19. Dose your organization have a process for continuous improvements in quality control ?

TABLE NO: 4:1:19

Option	No of respondents	percentage
Yes	100	100%
No	0	0%
Total	102	100 %

CHART NO: 4:1: 19

Does your organization have a process for continuous improvements in quality control ?
102 responses



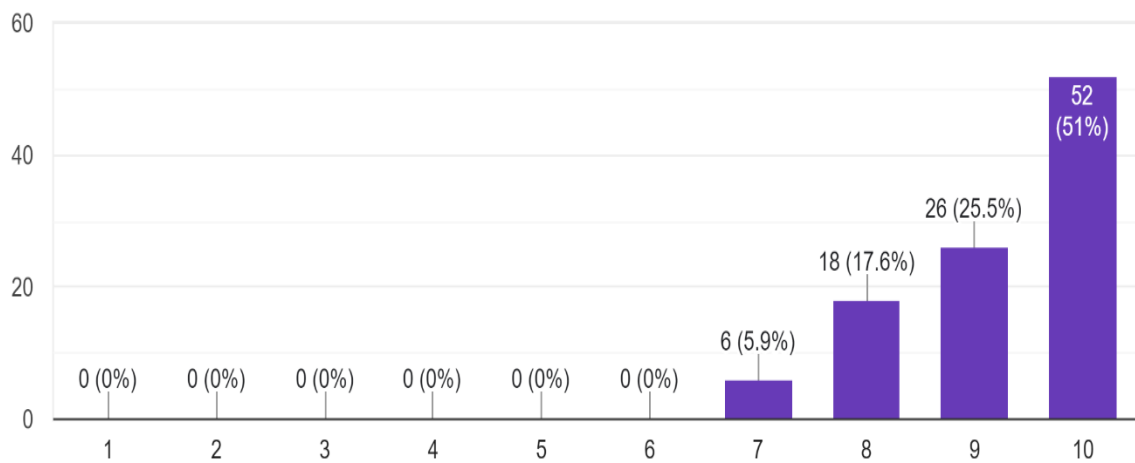
INTERPRETATION:

From the above table 100% of the respondents are selected Yes.

20. On a scale of 1-10 how satisfied are you with the current production process in your organization ?

On a scale of 1 - 10 how satisfied are you with the current production process in your organization ?

102 responses



4.2 HYPOTHESIS 1 (Correlation) OF THE STUDY

H1: There is a significant difference between the organization perception of quality and safety and regulatory compliance in the production process.

Ho: There is no significant difference between the organization perception of quality and safety and regulatory compliance in the production process.

Correlations			
		what is your organization perception of quality	How does your organization ensure safety and regulatory compliance in the production process ?
what is your organization perception of quality	Pearson Correlation	1	-.040
	Sig. (2-tailed)		.691
	N	102	102
How does your organization ensure safety and regulatory compliance in the production process ?	Pearson Correlation	-.040	1
	Sig. (2-tailed)	.691	
	N	102	102

Q1: What is your organization perception of quality ?

Q2: How does your organization ensure safety and regulatory compliance in the production process ?

INTERPRETATION

The p value is -.040 is less than the chosen significance level (0.05) hence alternative hypothesis (H1) is accepted, it suggests that there isn't to reject the null hypothesis (H0).

4.2 HYPOTHESIS 2 (Chi- square) OF THE STUDY

H₁: There is a significant relationship between the importance of product/ service and effectively communicate and collaborate with different departments in the production process.

H₀: There is no significant relationship between the importance of product/ service and effectively communicate and collaborate with different departments in the production process

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
How would you rate the importance of product/ service quality ? * How effectively do different departments communicate and collaborate in the production process ?	102	100.0%	0	0.0%	102	100.0%

How would you rate the importance of product/ service quality ? * How effectively do different departments communicate and collaborate in the production process ? Crosstabulation

			How effectively do different departments communicate and collaborate in the production process ?				Total
			Moderately Effectively	Not Effective	Some what Effective	Very Effectively	
How would you rate the importance of product/ service quality ?	Important	Count	4	9	5	9	27
		Expected Count	7.4	5.0	5.8	8.7	27.0
	Some what important	Count	4	1	6	6	17
		Expected Count	4.7	3.2	3.7	5.5	17.0
	Some what Important	Count	0	0	1	1	2
		Expected Count	.5	.4	.4	.6	2.0
	Very important	Count	20	9	8	17	54
		Expected Count	14.8	10.1	11.6	17.5	54.0
	Very Important	Count	0	0	2	0	2
		Expected Count	.5	.4	.4	.6	2.0
Total	Count	28	19	22	33	102	
	Expected Count	28.0	19.0	22.0	33.0	102.0	

Chi-Square Tests

	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	20.148 ^a	12	.064
Likelihood Ratio	19.697	12	.073
N of Valid Cases	102		

a. 11 cells (55.0%) have expected count less than 5. The minimum expected count is .37.

Q1: How would you rate the importance of product/ service ?

Q2: How effectively do different departments communicate and collaborate in the production process ?

INTERPRETATION:

The p value is 0.064 is higher than the chosen significant level (0.05) hence null hypothesis (H0) is accepted, it suggest that there isn't to reject the alternative hypothesis (H1)

CHAPTER 5

FINDINGS, SUGGESTIONS AND CONCLUSION

FINDINGS

- Majority (12.7%) of the respondent are of age group of 18- 25 and (60.8%) of the respondent are age group of 26-35 and (21.6%) of the respondent are age group of 36-45 and (4.9%) of the respondent are age group pf More than 45.
- Majority (74.5%) of the respondent are Male category and (25.5%) of the respondent are Female category.
- Majority (72.5%) of the respondent are selected Married and (27.5%) of the respondent are selected Unmarried.
- Majority (95%) of the respondent are Employee and (3%) of the respondent are Supervisor and (2%) of the respondent are Manager.
- Majority (11.8%) of the respondent are selected 3 -5 years and (61.8%) of the respondent are selected 5- 10 years and (4.9%) of the respondent are selected Less than 3 years and (21.6%) of the respondent are selected More than 10 years.
- Majority (32.4%) of the respondent are selected 8 Hours and (62.7%) of the respondent are selected 9 Hours.
- Majority (100%) of the respondent are selected Yes
- Majority (45%) of the respondent are selected Elimination of defects and (23.5%) of the respondent are selected A tool to increase profit and (18.6%) of the respondent are selected A competitive advantage and (12.7%) of the respondent are selected None of these.
- Majority (89.2%) of the respondent are selected Very well and (10.7%) of the respondent are selected To some extent.
- Majority (100%) of the respondent are selected Yes
- Majority (53.9%) of the respondent are selected Very important and (27.4%) of the respondent are selected Important and (18.6%) of the respondent are selected Some what important.

- Majority (76.4%) of the respondent are selected Very well defined and (14.7%) of the respondent are selected Well defined and (8.8%) of the respondent are selected Some what defined.
- Majority (81.3%) of the respondent are selected Very important and (10.7%) of the respondent are selected Moderately important and (6.8%) of the respondent are selected Some what important.
- Majority (25.4%) of the respondent are selected Regular safety audits and (47.6%) of the respondent are selected Safety tanning and (11.7%) of the respondent are selected Compliance monitoring software and (15.6%) of the respondent are selected other.
- Majority (79.4%) of the respondent are selected Very flexible and (8.8%) of the respondent are selected Some what flexible and (11.7%) of the respondent are selected Moderately flexible.
- Majority (33.3%) of the respondent are selected Very effectively and (21.5%) of the respondent are selected some what effectively and (26.4%) of the respondent are selected Moderately effectively and (18.6%) of the respondent are selected Not effectively.
- Majority (100%) of the respondent are selected Yes
- Majority (87.2%) of the respondent are selected Very Important and (12.7%) of the respondent are selected important.
- Majority (100%) of the respondents are selected Yes.

SUGGESTIONS

- Majority of the respondent are said that they are effectively communicate and collaborate in the production process. Hence some of the respondent are said not effectively we need to find the solution and do the production process effectively.
- Provide comprehensive training to employees on quality control procedures and the production process.
- Clearly define quality standards and specifications for each product or service

- Establish a routine maintenance schedule for production equipment to prevent breakdowns and defects.

LIMITATIONS

- It is very time consuming process.
- Difficulty in getting from secondary sources
- The primary data is collected from 102 participant.

CONCLUSION

The present study is to determine the production process and quality control in Sun Industries. They have a well defined effective production process and well defined effective quality control that helps to eliminate defects early in the production process. And they have training programs to enhance the skills and knowledge of employees involved in production process to improve their performance. And that reduces the rework, waste and overall cost of production and gives a good quality. It is indeed necessary for an organization to have a quality control that will ensure that the product or service meet consistent standard. The consistently quality of a product leads to customer satisfaction and when the consistently meet or exceed customer expectations contribute to customer loyalty and positive brand perception. And this study shows that they have a good quality control and consistent standard of the product.

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APPENDIX

1. Age of the respondent
 - a) 18- 25
 - b) 26- 35
 - c) 36- 45
 - d) More than 45
2. Gender of the respondent
 - a) Male
 - b) Female
3. Marital status of the respondent
 - a) Married
 - b) Unmarried
4. _____ is your position in the company
 - a) Employee
 - b) Supervisor
 - c) Manager
 - d) Officer
5. How much experience do you have ?
 - a) 3- 5 years
 - b) 5- 10 years
 - c) Less than 3 years
 - d) More than 10 years
6. How many hours do you work in your company ?
 - a) 6 Hours

- b) 7 Hours
 - c) 8 Hours
 - d) 9 Hours
7. Do you collect data measure the performance of operation or process ?
- a) Yes
 - b) No
8. What is your organization perception of quality ?
- a) Elimination of defects
 - b) A tool to increase profit
 - c) A competitive advantage
 - d) None of these
9. Do you think quality management will work in your organization ?
- a) Very well
 - b) To some extent
 - c) Won't work
 - d) Can't say
10. Do they have a system for gathering suggestions ?
- a) Yes
 - b) No
11. How would you rate the importance of product/ quality ?
- a) Very important
 - b) Important
 - c) Some what important
 - d) Not important
12. How well defined are the quality control procedures in your organization ?
- a) Very well defined
 - b) Well defined
 - c) Some what defined
 - d) Poorly defined
13. How important are strong supplier relationship to the success of the production process ?
- a) Very important
 - b) Moderately important
 - c) Some what important

- d) Not important
14. How does your organization ensure safety and regulatory compliance in the production process ?
- a) Regular safety audits
 - b) Safety training
 - c) Compliance monitoring software
 - d) Other
15. How adaptable is your production process to change in production process to change in product demand or design specifications ?
- a) Very flexible
 - b) Somewhat flexible
 - c) Moderately flexible
 - d) Very inflexible
16. How effectively do different departments communicate and collaborate in the production process ?
- a) Very effectively
 - b) Somewhat effectively
 - c) Moderately effectively
 - d) Not effectively
17. Does your organization provide training programs to enhance the skill and knowledge of employees involved in production process ?
- a) Yes
 - b) No
18. How would you rate the importance of customer satisfaction ?
- a) Very important
 - b) Important
 - c) Somewhat important
 - d) Not important
19. Does your organization have a process for continuous improvements in quality control ?
- a) Yes
 - b) No
20. On a scale of 1- 10 how satisfied are you with the current production process in your organization ?