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The effect of

TQM on Bulky

An implication at a firm which acts as a logistics solutions provider

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Key terms:

Production: a department that caters for a regular client.

KPI: key performance indicator.

SCM: supply chain management.

JIT: just in time production technique.

Bulky goods: a department which caters for consignments that appear in all possible shapes and sizes, a mover of unusual items.

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CHAPTER 1: INTRODUCTION

In the contemporary business world, the level of competition amongst organizations is fierce and sky high, where majority of them are seeking ways to achieve competitive advantage over others and enhance organizational performance to the optimum level.

Company XYZ is one of the renowned logistics companies that runs its' operations in the Nordic region. It has a good hold in the Nordic region, as well has arteries stretching in the global environment. Bring provides logistics services to every sort of segments in the market, be it a business to business or business to customer. Bring serves in every way possible, be it mails, goods, packages, bids etc. It takes customer service quite seriously, taking the example of a washing machine or any other white ware product, they transport it from point A to point B, carry it inside, and even install it if you require additional services, depending upon particular customer needs. The company has a hefty amount of customer base, which keeps increasing by every passing day, due to the service excellence. One of the productions of company XYZ is located at Torsvik is Bulky goods which as the name suggests means heavy items. In this study we aim to conclude as to what is the effect of Total Quality Management on Bulky goods.

One Study provides six criterions for Total Quality Management: Leadership, information and analysis, strategic quality, planning, human resource development and management, management of process quality, customer focus and satisfaction. There is a different impact of Total Quality Management on different processes and firms. (Wilson and Collier, 2000, as quoted in E, T, and D.J, 2007)

The main goal of Total Quality Management is to competitively meet and exceed customer's needs by improving quality of the organization's product or service. (Gunasekaran and McGaughey, 2003, as cited in F., Z., and Qureshi, 2011, p. 269). Enhancing customer satisfaction is the main focus of Total Quality Management. (Gunasekaran and McGaughey, 2003, as cited in F., Z., and Qureshi, 2011, p. 269). Customer satisfaction will increase naturally as we increase the efficiency

and timeliness of the delivery of bulky goods. Additionally, TQM is a systematic approach working horizontally across different functional departments while involving all employees on all levels, where as it extends back and forth to incorporate the supply chain and customer chain. (Kanji and Wong, 1999, as cited in F., Z., and Qureshi, 2011, p. 269).

Process variance is reduced significantly by the application of TQM. Supply chain performance measures such as cycle time, and delivery dependability are directly impacted by reduced process variance. (Flynn et al, 1995, as cited in F., Z., and Qureshi, 2011, p. 269).

Quality management is seen to bring improvements in the organization's productivity and profits, as suggested by empirical evidence. (Hendricks & Singhal, 1997; Douglas & Judge, 2001, as cited in K.H, G., and Cheng, 2004).

Total Quality Management practices such as top-management commitment, customer focus, training and education of crew members, continuous improvement and innovation, supplier management, and employee involvement have many benefits to the organization. Successful implementation of these practices results in a boost in the business performance, customer satisfaction and customer responsiveness. They also equip the managers to improve their leadership ability and to reduce cost. The successful implementation of TQM practices also brings benefits such as increase in quality of goods and services, employee empowerment, supplier-customer relationship, improved enterprise resource planning partnership, teamwork, reduction of wastage, on-time delivery, JIT, reduced cycle time, improved internal and external relationship, improved efficiency on information processing, improved security, and improved market share. (F., Z., and Qureshi, 2011)

Many leading organizations in the world are using Total Quality Management (TQM) practices as the essential features of business strategy to gain competitive advantage and success. Internal integration of logistics companies benefits from the use of technology and Total Quality

Management practices. Information technology can be used to gain further internal and external integration of logistics companies. (S.A, Lim, and H, 2006)

Total Quality management (TQM) plays a significant role in improving the performance of logistics companies. Organizations that use Total Quality Management practices are seen to perform significantly better than their competitors who do not use TQM practices. (S.A, Lim, and H, 2006)

Managers in all organizations should be aware that Total Quality Management (TQM) practices bring about positive effects on employee's work-related attitudes such as job commitment, job involvement, job satisfaction, and career satisfaction. TQM practices such as training and education positively impact job involvement, job satisfaction, and organizational commitment. Job involvement, job satisfaction, career satisfaction, and organizational commitment are all significantly enhanced by Empowerment and Teamwork (TQM Practices). Job satisfaction and organizational commitment both are also increased by continuous improvement and problem prevention which are also two of the very key Total Quality Management (TQM) practices. (N, Asaari, and M, 2006)

There is a direct link between the organizational performance and supply chain management, if the processes are clear enough everything would go smooth on a regular basis keeping the deviances in mind and how to deal with them if they tend to occur, contingency plans are always given immense importance.

Operational and business performance, employee relations and customer satisfaction are positively affected by the implementation of Total Quality Management (TQM) practices. The benefits of TQM may be different and vary depending on the size of the organization. (M, Samson, and D, 1999)

In one study a structural equation model was used to test the effect of quality management on potential, process and outcome quality. The results were seen to be positive for all factors except outcome quality. (W and J, 2010).

1.1 Problem Statement

Organisations, enterprises, business institutes etc. are always concerned about their performances and every year the companies, business institutes etc. throughout the world increasing the allocation of the particular spending of their budget in improving and enhancing their performances (Boxall, Guthrie, & Paauwe, 2016).Today, most of the companies have adopted information and communication technology to streamline their business, functional and operational processes as mentioned in (Alfalla-Luque, Marin-Garcia, & Medina-Lopez, 2015). Moreover, with the advancements of technology, tools and approaches, companies are now incredibly focused on the provision of standardized quality-based products and services to their clients and customers.

Based on the existing researches (Bal & Dorenbosch, 2015) (Su, Baird, & Schoch, 2015), it is considered that the companies throughout the globe are facing number of challenges such as data security and privacy problem, lack of techniques skills, project management and many other. In accordance to the consideration, they are identified as critical and time-consuming problems that can only be resolved through the integration of appropriate approaches, models or techniques. However, to obtain or deploy any sort of solutions, in-depth investigations and analysis need to be conducted.

Quality is defined as one of the key standards that are usually used to measure against the other kind of observations. Most of the organisations emphasize on analysing the problem or technique that can help them in sorting out the problem related to quality or supply chain management.

In context of this research, we have investigated the problem to be related to the supply chain management of the company that mostly relates to the flow of administrative goods, setting

relationship with the customer, transportation management and checking their information, handling of goods, generation of invoices and sendings to the client, setting the agreement with the customer or partners and involved in many sort of task that we need to carry out. However, during the analysis, we have indicated that overall the company performance has been impacted and the keys stakeholders that are linked within the context of supply chain management cycle have emphasized that these processes need to be improved so that better outcomes and results can be extracted.

There are different sorts of aspects that can overall help the company to improve their performances and streamline their processes that are linked within the context of supply chain management. For instance, in terms of the logistics, most of the companies face the problem of sustaining the relationship with their clients, since uncertainties exist and tend to tamper the relationship. The focus of the research is laid on finding out the effects of implementing the Total Quality Management practices on bulky goods. Bulky goods is a production of company XYZ, where sorting, order processing, and dispatching of the way bills is carried out. Bulky goods as the name suggests directs towards goods which come in different sizes and shapes and are dealt accordingly. During the analysis, it has been highlighted that there are some of the key problems that are faced in the context of bulky goods and other productions. It is identified that these problems overall impact the performance.

Cost is defined as one of the key factors while having any organisation or any sort of project in mind. Every organization tends to ponder upon it in a way to align its processes in a manner that there is efficient usage of resources and keeping the frame transparent enough. However, it is considered that if the high labour hours can lead the key stakeholder to think and analyse how this cost can be tackled and used in a way that its being utilized in an optimum manner. The labour costs are one of the main operational costs of bulky goods, if they are lowered, a positive effect can be extracted out of it. However, in the context of this research, we have found the solution to these problems and have overall applied the TQM (Total Quality Management) and the actions

research so that the continuous benefit can be obtained through the utilization of the proposed solution.

It can be summarized that we aim to enhance the performance of the production by decreasing the number of working hours of employees as we have integrated the TQM based management system on the principle that every member of staff must be committed to maintain high standards at work in every aspect of a company's operations.

This research also focuses on managing and looking forward for the generation of a mechanism which would align the processes, intended to refine and align them in such a manner that they are carried out and more focused towards continuous improvement and executing tasks in the most efficient way which would lead towards decreasing the number of labour hours being vested in the production, which in turn would bring down the operational costs as well as improve the processes. Taking the example being more thoughtful of the uncertainty avoidance measures, fixing the truck/trailer arrival times so there are lesser discrepancies in the processes, and there is efficient allocation of resources. As the trailers don't arrive on the expected arrival time, they create a divergence in the process, the labour hours designed for bulky goods is located to be useful to other productions e.g whiteaway, millna, city mail etc. the divergence can prolong the hours and create a state of urgency for varied situations. Another example would be the scanning and transmission of the order process, its 2018 and most of the processes still require paper work, which prolongs and complicates the situation e.g if the driver forgot to bring the waybill papers along the dispatch area the good cant be produced and dispatched from the hub. Since the approach being used is just in time, all goods have to be dispatched to their prior DIP's, if there is a deviance it would tend to bring an effect on the performance and the goodwill of the company. This states that human error results in deviances, if it is more digitalized and more transparency is brought in the processes, it could result in more fruitful outcomes. Thus, if the key problem is resolved, there is a high probability that company would be able to extract better benefits in terms of costs, the

overall operations and business processes that are linked within the context of logistics and supply chain management.

1.2 Purpose of the Study

The key principles and scope of this research is to sort out the key problems and issues that are currently faced by the company and how TQM can play an important role in sorting out these problems. However, in the initial phases, TQM can be implemented in the production that would be aimed towards continuous improvement. It is more focused towards business process improvement (BPI), since there is no urgency in rapidly changing the processes but to tamper them and make it improve. Since there is a focus of management practices, rather than work to be carried out on determining which information system to be applied. Decreasing the number of labour hours is a desired outcome, whereas dealing with increasing amounts of waybills with the same number of resources to be allocated is a task to be done as well. Operational excellence is demanded, which could be proved through key performance indicators.

1.3 Research Questions

The following are the key research questions that we will be considered which would be answering in the context of the research being carried out:

1. What are the key effects of Total Quality Management on Bulky goods and how it can play a role in streamlining business, functional and operational processes?
2. What are the key principles that will be considered within the context of system of management, maintaining high standards?
3. What current methods tend to exist while measuring performance in the context of supply chain?

In this research, we will be answering the above questions which would draft out a way to improve the processes of bulky goods while showing positive effects of the implication of

TQM in an organization. There is a high probability when we come to think of and speculate the desired outcomes to define out part of these research questions are properly answered or addressed.

1 LITERATURE REVIEW

1.1 Total Quality Management

1.1.1 Concept of TQM

Quality tends to play a vital role in todays era, be it regarding a product or a service, companies are judged and analyzed by the level of quality services/products they tend to provide. The significance of the quality of products and services in an existing competitive and complex marketplace cannot be avoided in any instance as mentioned in (Jasti & Kodali, 2015). Quality is considered as one of the elements that the consumers are looking forward too when purchasing the product/service. Since the last couple of years, the concept of total quality management has immensely evolved. (Mangla, Govindan, & Luthra, 2016) defined total quality management as a holistic quality improving approach that is focused on bringing improvement in the performance of the products/services in the context of both, innovation and quality. It has been founded by (Pisani, et al., 2016) that organisations who have utilized TQM generate numerous advantages that include high quality-based products, increase customer satisfaction, cutting down of costs, improvement in the financial position of the firm, innovation and quality performance and overall bringing improvement in the employee satisfaction. Moreover, research (Yusr, 2016) considered that if the TQM is well-implemented, it does assist the organisation to gain a competitive advantage over the competitors.

Since the last couple of years, numerous researches have been conducted on TQM, because of its increasingly growing acceptance and diffusion in the business globe. (Zehir, Ertosun, Zehir, & M{\"u}celdilli, 2012) considered TQM as one of the increasingly durable and popular management concepts. (Mann & Kehoe, 1994) referred TQM as quality gurus. Similarly, in accordance to (Prajogo & Sohal, 2003) TQM is considered as a management approach that has been utilized by the organisations to enhance their organisational performance which encompasses of numerous behavioural and technical topics. Furthermore, (Anvari, Ismail, Hojjati, & others,

2011) defined TQM as a philosophy of holistic management that increasingly strives for the continuous improvement in organisation's functions.

TQM is highlighted as one of the multidimensional constructs. TQM comprises of a variety of activities and tasks that includes management leadership, training, quality data, employee relations, reporting, and design of product service, information technology, people management, customer focus, strategic planning and many others. As mentioned in (Prajogo & Sohal, 2003) TQM as a team concept of the organisation's management, where forehead needs of the customer and overall aims of the integration of organisational units are incredibly considered. It emphasizes the nature of the cooperation amongst the employees of all the standards of enterprises in all the enterprises.

1.1.2 TQM Activities and Quality Performance

Numerous researches have been conducted in the context of examining and investigation relationship between TQM and the performance, scholars that have utilized different types of performance measures such as the level of innovation, quality, financial perspective and operational performance (Tan, Kannan, & Handfield, 1998). Although, the impacts of TQM on the several types of performance are quality, an inconsistent performance that generally indicates a positive and strong relationship. As mentioned in (Mudiyanselage & Herath, 2014) that TQM implementation results in the generation of high quality-based products/services.

In accordance with (Rahman & Bullock, 2005) quality is determined as the principal element of the success in the existence of competitive environments. It is considered that quality management appropriate is immensely highly profiled activities for the firms and has been associated with the aspect to gain a competitive advantage against the competitors.

(Mann & Kehoe, 1994) revealed that the quality performance is associated with the TQM. Total Quality Management practices enhance the promotion of quality performance. Main indicators for the quality performance identified by (Kannan & Tan, 2005) are the productivity, rework, product

or service performance, cost of the scrap, and many others. It has been reflected that TQM activities aim is to involve the employees in promoting human aspects of a quality system for becoming adaptive in the changing environment. It needs to be considered as mentioned in (Rahman & Bullock, 2005) that the main components of the quality represent the customer focus and extensive process management.

It has been founded by (Berman, Wicks, Kotha, & Jones, 1999) that total quality management positively impacts on the innovation performance. This is mainly because; the complete focus is laid on enhancing the quality of the products and being customer focus. This means that the company looks for new needs and changing demands of the customers and accordingly integrates them in the form of product, while highly considering maintaining of quality.

1.1.3 TQM and Its Impact on Stakeholders

Earlier research works of (Berman, Wicks, Kotha, & Jones, 1999) (Rahman & Bullock, 2005) have reflected that the quality management does not always enhance the firm's sustainability. This is mainly due to lack of the involvement of the top managers, implementation of the isolated tools and just in time tools without the proper adoption of TQM philosophy. It is really important to consider that the significance of selecting and properly implementing TQM in the existing business processes really cannot be neglected in any instance. Moreover, rather the research argued that if TQM is not properly adopted and implemented, then it would not be able to accomplish the organizational quality goals and objectives, moreover, it would be negatively impacting on the needs and wants of the stakeholders (Benavides-Velasco, Quintana-Garc{\'\i}a, & Marchante-Lara, 2014).

In context to (Mann & Kehoe, 1994) it is considered that the excellent organizations increasingly value the employees and tend to create a culture that appreciates the mutual beneficial accomplishment of the organizational and personal goals (Rahman & Bullock, 2005). Basically, it is considered that implementation of TQM overall requires that the organisations can develop the

capabilities amongst the employees through providing them training, and stimulation of empowerment. Moreover, the work is given to the teams that promote innovation, participation, and creativity in the improvement activities (Benavides-Velasco, Quintana-Garc{\'\i}a, & Marchante-Lara, 2014). It is considered that ensuring the coordination and effectiveness of TQM's implementation, integration of appropriate communication leads to the good progress providing positive outcomes.

1.1.4 TQM and Organizational Performance

It has been considered that organizational performance since the last couple of years has been increasingly attracted by the researchers and academics. Numerous researches have been conducted in context to the domain of identifying the factors and elements that can enhance the organizational performance.

One of the major element that has been identified by (Gharakhani, Rahmati, Farrokhi, & Farahmandian, 2013) immensely impacts on the organization's performance is the quality of products/services. Quality is the major aspect that the consumers, stakeholders are looking forward to, and relate their experiences with. As argued by (Rahman & Bullock, 2005), it is considered that total quality management approaches focus on enhancing and improving the quality of the products that in turn leads to the effective organizational performance. Furthermore, it is considered that many successful organizations have gained a competitive advantage over the competitors in terms of their organizational performance (Anvari, Ismail, Hojjati, & others, 2011).

1.2 Supply Chain Management

Supply chain management (SCM) is highlighted as active and effective management of the activities involved in the supply chain in maximizing of the customer value and accomplishing competitive advantage sustainably as mentioned in [(Burke & Vakharia, 2002). It overall represents the conscious efforts by the firm's supply chain for the aspect of developing and running supply chains in efficient and effective ways. The activities of the supply chain as argued by

(Vickery, Jayaram, Droge, & Calantone, 2003) covers product developing, production, sourcing, logistics and information system that is needed in coordinating all these activities.

It is considered as mentioned in (Gil, Gangopadhyay, Zhou, Gordon, & Nayak, 2010) enterprise SCM and controls completely refers to complete integration of the supply chain system for the planning, operating, coordinating, and optimizing the processes and activities. Its major goal is correcting the products that are required by the customers at right time in right quantity with the right quality. It is considered to be of immense importance that every process and activity in the supply chain management is well-performed so that overall finish product is well produced and considered.

In management process, focus on core business revolves around the requirement of the good control in the two major aspects, that includes, to accomplish information flow of company, control of capital flow, logistics, whereas, the second aspect is making of the sales purchases of the raw material, sale continuous management tasks and activities (Zhang & Wu, 2013).

1.2.1 Supply Chain Strategy

New waves of change have taken steady hold in the field of the supply chain management in numerous businesses (Vickery, Jayaram, Droge, & Calantone, 2003). This has been viewed as the development of strategic management of supply chain. It is considered that in context to the traditional viewpoint where the complete focus has been laid on the operations of SCM, however, since last few years, SCM has acquired strategic function that contributes directly to business success, while at the same time; it is becoming really immanent and central part of the business.

Most of the researchers (Burke & Vakharia, 2002) (Zhang & Wu, 2013)have identified and considered that Supply chain strategies bear's incredible importance, and it does directly as well as indirectly assists in the ensuring of smooth operations.

1.2.2 Theories of SCM

SCM is considered as one of the fasting growing areas of attention to the both, business management and academic practitioners. SCM is increasingly enriched with theoretical aspects of economics, logistics, organizational behaviour and marketing. In context of the Transaction cost approach (TCA), it has been based on the idea that firm exists mainly due to the marketing costs. The theory has been criticizing neoclassical theory. TCA is based on the four main concepts that consider the marketing mechanism fails due to the bounded rationality, opportunism, uncertainty and asset specificity (Mudiyanselage & Herath, 2014).

Similarly, Resource-based View (RBV) has accounted for how the firms can be increasingly independent of the opportunism. RBV beliefs that the firms, organizations, and companies are capable of creating the specific benefits that are unavailable in the market in forms of the transactions. RBV hold viewpoint of the capabilities and resources of the firm are highly elastic in supply. Moreover, the theory recognizes numerous factors of the production (Braun & Guston, 2003).

Furthermore, agency theory (AT) is also one of the theories that have been conducted from the perspective of the SCM. It is the theory that has been primarily based on relations between the two parties; one party is principal that requires another party in undertaking actions, referred as an agent, on principals' behalf. The dyadic relationship overall ensures that agent acts in the best interest of principal (Braun & Guston, 2003).

1.3 Relationship of TQM and Supply Chain Management

Over the last couple of years, competition between the enterprises has been incredibly increasing in terms of its supply chain. Every organization wants their supply chain to be agile in nature, and respond to every sort of situation that may occur in the future. This brings a great focus on uncertainty avoidance measures, Thus, in accordance with (Chang, 2009) total quality management implementation in the supply chain has become the really exquisite premise for

ensuring firm's survival. The research (Zhu & Sarkis, 2004) discussed applications of eight modern TQM policies and principles of the ISO 9000 in the supply chain quality management that includes customer focus, people involvement, system management, process management, a continuous improvement considering of decision making through factual approach and mutual supplier relationships.

Research (Siddiqui, Haleem, & Wadhwa, 2009)presented ongoing integration procedure of the aforesaid philosophies in existing flexible system, supply chain and total quality management have highlighted through the considering of the qualitative researchers. Most of the researches in past literature has carried out and several categories, that includes total quality management has in-detailed has been studied and analysed. The research has been founded that the total quality management in the context of the supply chain management bears immense importance and it's considered in the every process and activity carries high importance.

Lean manufacturing rises from Toyota Production Systems as presented in (Kannan & Tan, 2005). Variants of the lean manufacturing that includes TQM that had been originally founded in automotive industry Japan but the evolution was carried practically in West. The research (Anvari, Ismail, Hojjati, & others, 2011)aimed at producing the comparative study between the total quality management and the lean manufacturing with integrating of lean thinking approaches. Basically, research founded that TQM is enhancement approach that results in creating synergy in introducing high competitive advantage amongst companies.

In accordance to (Cooper & Ellram, 1993)it has been considered that SCM entails an effective configuration and coordination of process that is increasingly necessary for making the products available in reproducible, satisfactory and timely condition. It has been considered that the SCM characteristics can be accomplished by identification and making the use of the SCM practices in the systematic and organized way. Basically, it needs to be considered that SCM practices engage the set of the activities and tasks that are undertaken by the organisation for the promoting of supply chain management effectively (Zhang & Wu, 2013). Through the integration of TQM

approaches, overall processes of the SCM and all the activities that are involved in the chain enhance and productive outcomes in terms of the quality are achieved.

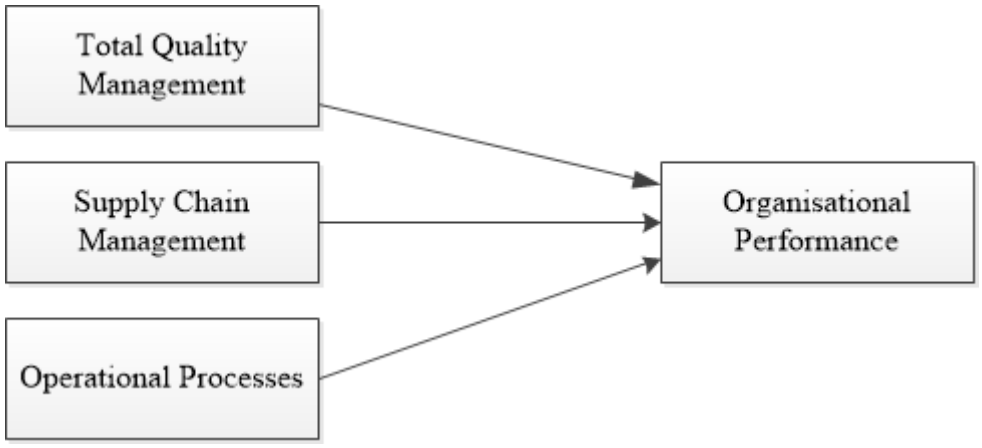


Figure 1-1 Framework

CHAPTER 2: TQM TECHNIQUES

Significance of the total quality management in enhancing the credibility of organization in terms of the quality cannot be neglected at any instance (Mystica, Bai, & SUGANTHI, 2015). Over the last couple of years, numerous researches have been conducted on identifying and examining different TQM approaches and their impacts on the overall organizations, with the aim of resolving related problems and issues.

Below you may find a couple of TQM approaches, which were found to be quite useful and were brought under consideration to implement at bulky goods.

2.1 Quality Circle

Nowadays, organizations are focused on adoption of new and innovative total quality management approaches, as the traditional approaches have not remained really effective in provision of new solutions to new problems and issues (Rohilla & Chaudhary, 2016). One such tool is the quality circle. Basically, quality circle is a voluntary group that comprises of the members who meet to overall talk about the workplace, focus of improvements in service and making of the presentations of ideas to management.

As mentioned in (Seo, Lee, & Moon, 2016) quality circle has been widely adopted and implemented in the organization's, especially in Japanese manufacturing and production engineering companies, such as Samsung, Kenwood and many others in the logistic departments. It had been considered that during last past few years, Samsung company had been facing the increased scrap and increased defects. Thus, it was noted that through the implementation of Quality Circle, the defects were overall prevented, and it minimized the production of the scrap to high extent, overall benefiting the organization (Moore, Herst, & Louwe, 2018).

In context to (Satonkar, et al., 2017)this approach had several benefits, such as it increases the quality awareness of company, enhances product's quality, improves managements approaches and techniques to deal with everyday situations, and incredibly improves the customer relations.

However, it has been considered that this approach as mentioned in (Kumar & Mittal, 2015)also has several drawbacks as well, that includes, that approach might not be really effective as it might be wastage of time, due to lot of meetings, and moreover, it would be complete disaster, if the meeting is not held by the total quality expertise (Bosch, CABANOS, & Aucejo, 2016).

In context to the consideration, to some extent, it can be applied to the existing case study, as it would incredibly enhance the service quality, improving and enhancing the managerial functions and operations.

2.2 Statistical Process Control

Since last couple of years, traditional approaches have been dynamically switched to advanced approaches due to their increase effectiveness, and good management. One of the methods that have been used by the companies in terms of controlling its quality is the statistical process control. It employees the statistical methods for monitoring and controlling process, and ensures process, produces increase specifications conforming product (Mystica, Bai, & SUGANTHI, 2015).

It has been identified that SPC has been integrated in numerous small scale enterprises in Malaysia. Moreover, SPC has also been implemented in the Wood Industry of United States. The approach has been widely recognized as one of the quality improvement practice that the companies employ for ensuring reliability of the products, and overall increasing the satisfaction of the customers (Ab Rahman, Zain, Alias, & Nopiah, 2015). It has been indicated that the major issues that companies were facing was the management of data and data security. It had been investigated that the issue was well-resolved by the implementation of SPC approach. SPC systems were really practical for the effective management of data and conducting data analysis, and were considered to be really beneficial for the manual SPC.

It is considered that there are several benefits of SPC. Firstly, it overall impacts on the production, it is noticed that the production is less affected and there is low probability of the occurrence of process slowdowns and less interruption. Furthermore, the systems are completely relied on the

flow charts and experiments that do positively impacts on the statistical analysis. However, it does has some drawbacks as well, that includes, that it might be highly time consuming, costs implementation is really high as there is a need of hiring processional consultant team, and possibly lack of the cooperation.

Existing case might also consider the integrating and implementing of SPC, as it would definitely impact the company performance, providing security to the company's data as mentioned in (Shamsuzzaman, Jasim, & Alsyouf, 2016).

2.3 Total Quality Control Approach

Considering of controlling the quality in the process bears incredible importance. It is identified as the process-oriented technique that assists in the management of quality control (Aquilani, Silvestri, Ruggieri, & Gatti, 2017). It has been reflected that numerous companies in worldwide such as DHL, Nestle, Mitchell's Fruit and many others have been adopted and implemented the approach and technique of total quality control. This is mainly because this approaches focuses on resolving the issue of controlling quantity and other parameters. It has been investigated that in past, the Nestle Company has been facing lot of issues on controlling their costs, pricing and quantity of stocks and production. As mentioned in (Zhu & Azar, 2015), it have been really effective in controlling the both, quality and quantity parameters. This approach was mainly applied in the logistic department, in order to overall measure and control the cost, raw material and other related aspects.

There are various benefits of total quality control that includes increase emphasis on process and the continual process improvement, engages participation of the employees so that they can generate innovative ideas, enhances flexibility and really good for the changing market (Jimenez-Jimenez, Martinez-Costa, Martinez-Lorente, & Rabeh, 2015). However, adopting and implementing of this approach has several drawbacks as well, that includes, at times, when the focus is increasingly laid on the process, employees lose their actual sight of the project as argued

in (Jin, Jeong, & Yoon, 2015), the approach might be costly, as there is a need of the requirement of professional consultants.

2.4 Robust Design

It is considered that the major focus of the companies in today's existing environment is the maximization of the revenue, productivity and profitability (Lei, Wang, Zhu, Guo, & Wang, 2015). However, as it sounds easy, it is not really easy. In order to obtain high revenues, profitability's and productivity, it is entirely important for the companies to integrate and adopt new approaches. One of the total quality approaches is robust design. It has been argued by the (Fang, Gao, Sun, Xu, & Li, 2015) that such method enhances and improves engineering productivity and ensures the satisfaction of the customers. Engineering Companies of United States and Dell have adopted and implemented Robust Design as it enhances functions of process or product, thus, assisting in the facilitating of the flexible designs and engineering (Guo, Zhao, Zhang, Yan, & Sun, 2015).

It has been pointed that E-Kalsoft Company was facing the issue of high error rate in the transmission of date. A group of the engineers were working on design of the radio receiver for the ground to the aircraft communication that required high reliability. Building prototype series had been really expensive for the resolving of the problem, similarly, on other hand, the computer simulation efforts for the evaluation of the single design had been considered to be really expensive and time consuming. After the in-depth analysis and discussions, robust design approach was adopted as it focused on the increasing the reliability and was really cost effective (Blaabjerg & Pecht, 2015).

Major advantages of implementing robust design approach and technique is that it reduces the product cost, improves quality and reduces the developmental interval as mentioned and examined in (Jiang, 2015). However, on the other hand, it has been indicated that the major disadvantage of

the robust design is that it considers the noise factors as independent factors which might create lot of issues when setting up experiment (Ahmad Shamsuddin, Chew, & Shin, 2015).

2.5 Quality Function Deployment

Quality has been one of the most important aspects that has attained the attention of numerous practitioners and researcher. It is considered that major approach of the total quality management is the quality function deployment as it primarily focuses on the identification of the critical and important customer attitudes and creates an effective link between the design parameter and customer attributes (Sahney, 2015).

In accordance to consideration and analyzing that the approach assists in making decisions, and in terms of the logistics it resolves the issue of considering each and every important parameter needed for the execution and integration of supply chain. In terms of the considerations, it was identified that Aesop Cosmetics was entirely facing the issue of bringing quality in its supply chain (Jin, Jeong, & Yoon, 2015). However, the problem was adequately resolved and adjusted through the integration of quality function deployment. It has been considered that the major advantage of the quality function deployment is that it overall enhances the customer satisfaction through completely considering the quality perspectives of the customers as argued in (Yan & Ma, 2015). The major drawbacks include risks of customer focus, as the effective conduction of QFD overall requires the accurate analysis of data.

2.6 Comparison

In context to the analysis and consideration, it has been identified that the role of almost all of the total quality management techniques and approaches have been really immense in terms of the growth of the organization to the accomplishment of the organization goals in context to the quality of customers. However, it has been realized that the organization should be really good enough to adopt and implement right TQM approach in terms of its working environment.

It has been considered that logistics is a complex department, and most of the approaches that have been presented are really focused on the meeting of the qualities, through the advanced informational technological approaches.

After pondering a lot, we chose to head with the quality circle after successful agreement with the production manager. If the crew members tend to engage in discussions, more and more problems can be identified and highlighted, and hence could be worked upon accordingly. There is a high need of transparency of communication as the manager mentioned, once the meetings are held, the problem areas could be worked upon and made functional. The people who deal with the day to day tasks have a deeper insight of how things go about, so they can provide highly valuable and first-hand information regarding issues, and they can propose the best possible solution to it, as their observations are far stretched due to the daily interaction. A good fusion can occur due to the quality circle, indulging all the actors in the chain to work towards the betterment of the production, and owning problems as a team.

CHAPTER 3: METHODOLOGY

In this chapter, there is a detailed discussion on the research strategy that has been applied in the context of the research. This chapter also covers the discussion that how the data collection in this research has been carried out and the research process is portrayed as it has to be lead. However, it comprises of a section where it explains how the collected through the research would be analyzed.

Methodology is always considered as the center of attention (Lewis, 2015). It is highlighted that the whole concept of the research and the execution path in any sort of domain is executed according to the method (Vaioleti, 2016). There are several types of methodologies that are currently available and brought under consideration in various research works, each varying from the other in its own manner. The key foundation of both the methodologies is based on the quantitative and qualitative method (McCusker & Gunaydin, 2015). There are diverse types of methodologies available and to some extent it is quite impossible of the key stakeholder or the researcher to identify and analyze that best methodology that according to the scenario of researches supporting argument from (Starr, 2014).

However, if the right methodology is chosen, there is a high probability that better results can be extracted out of it. Due to the methodology the project or research would be completed within the specific duration, cost and resources as intended and speculated. So, it has been indicated that before the selection of any sort of research, a deep analysis should be done on the available and pertaining research that is available for the writer to design the context (Palinkas, Horwitz, Green, Wisdom, Duan, & Hoagwood, 2015).

3.1 Research Strategy

Research Strategy is always considered and defined as the backbone of the research and it is indicated that the research methodology needs to be selected according to the research project being conducted as different strategies are more appropriate than others (Marean, et al., 2015).

During the analysis it is perceived that most common way of separating the methodology or the research strategies are considered as quantitative and qualitative methods. It is considered that both of these methods are targeting the different aspect of the research or research project (Newbert, 2007).

In the quantitative research, the problem is resolved through the analysis of numerical data or data. The numerical data is transformed in to statistical data so that the results can be calculated. However, that on the other side the qualitative method is utilized for the underlying reasons, opinions, and motivations (McCusker & Gunaydin, 2015). During the analysis, the qualitative method is mostly executed by the help of the secondary data. According to our analysis based on the existing researches that selection of the right research methodology is defined as one of the most critical problem. However, it is also indicated that we are able to find and select the right methodology there is a high chance that the key problem associated with the thesis would be resolved and the right solution can be drafted out.

It is highlighted and identified that in the aspect of this research work we have investigated the effect of Total Quality Management on Bulky goods and has centered the focus on how to improve the processes and to enhance the performance of the. Based on our researches (Jimenez-Jimenez, Martinez-Costa, Martinez-Lorente, & Rabeh, 2015) (Jimenez-Jimenez, Martinez-Costa, Martinez-Lorente, & Rabeh, 2015), there are different types of strategies that can fit best in order to simulate or execute this research. In this research, the quantitative research method has been utilized as we are going to focus on analyzing the impact of Total Quality Management on Bulky goods.

In several stages, in order to accurately calculate the effect, there is a need of statistical analysis so that the correlation and the relationship between the variable can be defined and has been discussion in the previous framework developed under the umbrella of this research. It has been witnessed that there are different sorts of parameters that are involved overall in the context of this research such as performances, Performance measurements, Performance Measurement systems and many other.

In this research both primary and secondary data have been utilized so that the better results can be sought and each parameter that is linked in the context of research can be measured and assessed. We have collected the data from the company, as when TQM measures were not implied as yet, and we intend to take a trace of the measure after the implementation of the approach as well which would make us highlight the obvious changes. We would be able to identify and analyze that key problems would the occurring or which are to be faced and to draft out the best possible solutions to the identified problem areas as mentioned in (Sadikoglu & Olcay, 2014).

3.2 Research Process

Action research has been adopted in this research, due to the nature of it. As it is designed to work on a current situation a company is indulged in. there are various types of processes that are involved in the context of this research. This chapter explains how the various parts contribute to the project and how they were performed.

3.2.1 Problem Statement

Problem Statement is defined as the initial phase of the research and in this phase, we have defined and analyzed the key problem statement. In the problem definition there are different types of key areas which comprise of Logistics, supply chain management, management of bulky goods, and many areas that need to be improved. However, if these areas are improved through the deployment of the TQM it can be considered that overall the performance have improved, and better outcome can be obtained.

Based on the problem statement analysis it is identified that the company has been facing different sort of problem within the context of supply chain management lifecycle. Based on the researches (Boxall, Guthrie, & Paauwe, 2016) (Guerra-Santin & Tweed, 2015) through the integration of the TQM and its related principle we have analysed that how the performance can be improved or enhanced. During the analysis, it is analysed that the employees also need to work more but still the KPI that overall has been set by the company has not been achieved.

3.2.2 Literature Analysis

Analysis of the literature is considered as one of the research phase in any context of research as mentioned in (Kaynak, 2003). This is defined as the second phase of the research and in this phase, there is detailed discussion in the perspective of existing literature that has has been carried out. However, in the action research we have divided the phase into two more phases that are presented as followed:

3.2.2.1 Review Concept and Theories

In this step we have analyzed the entire key concept and theories that are linked within the concept of supply chain management, supply chain management lifecycle, Logistics, bulky goods and many other. Through the execution of this phase we are able to analyse what are the key theories and concepts are available for the research. According to our knowledge and understanding we can develop the basic concept and the theories that we have needed in this research. However, it is considered that if these theories are properly investigated there is a high chance that the problem area of the organization would be eradicated due to implied approaches and mechanisms.

Based on our understanding and scenario we think that the most difficult part is the analysing the existing solution that can helps us to sort out the problem supporting argument from (Boxall, Guthrie, & Paauwe, 2016). It can be summarized that supply chain management is a large area and it is witnessed that in order to find the best fit theory or solution, it takes ample amount of but still it investigations are still longing to find something to conform to conform to. In the context of this phase the basic as well as the advanced principles relating to total quality management have also been reviewed.

3.2.2.2 Reviewing Previous Research Findings

Performance is always considered as most researched and debated topic (Su, Baird, & Schoch, 2015). There are different sort of researches (Psomas & Antony, 2015) (Tyanova, et al., 2016) that are conducted to analyse and identify that how the performance can be improved in terms of an

organisation. However, there are different types of methods that are utilized for improving the performance. In this phase we have carried out the discussion in terms of previous researches that are conducted in scenarios of Logistics management, supply chain management, operations management etc.

By the help of this phase we have pondered over the previous research findings. based on the previous findings, we are on the verge of trying to draft out a solution where as it can address and highlight the current problem that is being focused upon in the company in the context of the effects of implementing Total Quality Management practices on bulky goods and analyzing the performance of the production by decreasing the number of working hours of employees and other key related parameters.

3.2.3 Theoretical Framework Model

There is a need for the investigation of variables, and for them to be analyzed in order to measure and identify any sort of impact. To measure the effects of implementing Total Quality Management practices on bulky goods there are different sort of parameters or variables that need to be considered. In this phase based on the literature analysis we have developed the dependent and independent variable that can be utilized to find out the effect of implementing Total Quality Management practices on bulky goods. It is considered that the framework has been completely developed on the structure of dependent and independent variable structure. According to our analysis and understanding this is defined as one of the key phase and the theoretical framework model for the research has been developed in the context of this research.

3.2.4 Hypothesis

To test and validate the framework, according to the key variables that are involved in the context of this research we have formulated the hypothesis. In context of this phase the hypothesis are formulated and testing can be carried out. Each of the variables that we have presented in context of this research are inter-linked and associated with the key variable.

3.2.5 Research Design

The design of the research is one of the vital parts, interview and questionnaires would prove to be quite useful according to the nature of the research. Through in-depth interview with the supervising staff, e.g. production manager, many useful insights could be gained, and an outline could be drafted out how to work with it once cross questioning is done. Questionnaires would simply comply to the reactions of the respondents.

3.2.6 Data Collection

There are various techniques that can be utilized for the data collection and it is considered that if the data collection is properly conducted there is a high probability that research quality can be ensured. However, it is identified that in this phase we have used both, the primary and secondary data for the collection (Orkin, 2014).

According to our understanding it is considered that if the data collection has been collected from different productions that are working under the scenario of the company. It is considered that this is the key phase and according to our understanding based on the existing researches (Guerra-Santin & Tweed, 2015) (Krokhin, Ezzati, & Spicer, 2017) around about 30% of the project lifecycle time has been simulated on the context of this research.

3.2.7 Data Analysis

Once the data is collection phase is completed, this phase is executed, and the data analysis has been being carried out (Plesa & Dekker, 2015). (Lewis, 2015) Identified that there are different types of analysis that can be utilized in context of this research. However, key analysis that have been considered in context of this research work would be demography analysis, correlation analysis, regression analysis and has also conducted some of the interview analysis technique that would be aims at revealing themes, concepts and/or hypothesis. It is also considered and defined as one of the key phase in the context of this research as mentioned in (Jirojwong, Johnson, & Welch, 2014).

3.3 Ethical Consideration

Any research process cannot be well conducted and well concluded if the ethical code of conduct during the process is not maintained. It has been considered that in the existing research, in the practical domain, the complete focus had been laid on the maintaining of the ethical code of conduct, in both, qualitative and quantitative means. In the quantitative aspect, we had adopted and used the questionnaire instrument for the collection of the data. However, during the collection of the data, focus had been laid on the maintaining of their confidential information, and every participant and respondent had been ensured that their information will only be used for the research purpose and wouldn't be made a source of discussion in public by pinpointing anyone. And moreover, before the filling of the questionnaire, it was focused and emphasized that the consent of the participant was highly considered and deemed to be of immense importance for this research.

The data collected through considering of the past researches and theories had been completely considered that it is being well sourced and moreover, it was focused that the information collected is not modified rather it is interpreted the way it was.

3.4 Action and Results

This can be denoted as one of the key phases of the research methodology and once the data analysis phase is completed, this phase can be practically executed. Through the analysis, we have analyzed and identified that what are the key problems that are faced by the company. Through the execution of this phase, we have so far identified and analyzed the key aspects that need improvement and have been transforming the input in to the outcome. The outcome has been considered in the umbrella of results.

According to our analysis in the transformation process we have analyzed and identified the continuous action process. Each of the productions that are linked within the context of this

research would be linked within the context of the prior production and based on the research the following are the key actions that would be taken in account

1. Learning processes
2. Action Planning
3. Action Steps

It can be summarized that the feedback technique in the context of solution. So that we have the loops and in accordance to analysis, by the help of loopback technique that changing in the organization or the company where this solution would be improved can be obtained. This research strategy overall has provide us the positive results and in accordance to analysis by help of this strategy the problem and the other issues that has been identified by the company easily be resolved. In the next section the detail discussion in context of data collection and the data analysis technique has been presented.

3.5 Data Collection and Analysis

According to (Jirojwong, Johnson, & Welch, 2014) there are numerous types of different tools and techniques that can be utilized for quantitative and qualitative methods such as questionnaires, interviews, focus groups and observations. In this research we have used the qualitative data and the selective methods that have been utilized for the collection are questionnaires and interviews.

There are different productions that are working under the umbrella of the company and most of the productions are linked within the context of supply chain management. Interviews are considered a useful method and might deliver data that is not available or found in performance records (Tyanova, et al., 2016). However, on the other side the questionnaires have helped in finding the key results and information that are linked in context of different productions that are to some extent linked within the context of Bulky goods. By the help of this research, we are able to analyse the effect of Total Quality Management on Bulky goods.

Communication is defined as the key barrier, while during investigation is being held it is considered that proper communication and collaboration between the key stakeholders and the department of the company needs to be focused upon. So, it can be considered that if the proper communication is established there is a high probability that we would able to collect the right data. Most of the interviews that have been conducted in the context of this research are semi structured and the key purpose of conducting the interview is to find out the problem that is faced by the production, and what do they think the cure of it could be, and how to make it better?

The questionnaires have been distributed between the employees that are working in different productions. It is detected that questionnaires have helped us to measure the impact of each variable that have been considered so far. To some extent it can be considered and highlighted that if these questionnaires and interviews are properly held, better results can be obtained.

Interview	Questionnaire
Semi Structured Analyzing what are the key problems and issues that are current faced within the context of the company. All the questions have been based in accordance to analyze the effect of Total Quality Management on Bulky goods	1. All the questions have been developed according to the framework 2. Sample Technique a. purposive Sampling 3. Sample Size a. 20

3.5.1 Data Analysis

The key aim of the data analysis it is to test the framework. The data collection and the analysis were planned in regard to the different steps in the framework. It is considered that if the proper technique is applied, there is a high chance that we would be able to analyses the key effect of the effect of total quality management on bulky goods.

All the data that has been collected from the questionnaire is processed, and the process is performed through the utilization of the Microsoft excel and SPSS. The key tests that have been applied on the data perceived from the questionnaires are demography analysis, correlation analysis, regression analysis and have integrated some of the interview analysis technique that aims at revealing themes, concepts and/or hypothesis.

There are three key qualitative data analysis that are considered in context of this research including data reduction', data display, and 'conclusion drawing or verification' as mentioned in (Ghauri & Gronhaug, 2005). In the table below, the key phases considered and executed during the analysis.

Data Reduction	During the conduction of interviews and the handing out of questionnaires there are different parameters that we have collected. Some of the data needs to be refined so that the accuracy of the data can be improved. However, this is overall a time-consuming phase and in the context of this phase we have analyzed the reducing and refining of the collected data.
Data display	In this phase of the data, we have performed the analysis and through the help of the chart and graph the collected data is represented.
Conclusion drawing or verification	This phase is based on the data display, while the analysis is presented which caters for the analysis of the conclusion. We have performed the verification in this phase.

In the end it can be summarized that in the next chapter we have followed the above-mentioned phases for this research. Based on the above phase the key outcome can be extracted and we have proposed the solution to sort out these problems.

3.6 Research Quality Verification

Research Quality Verification is one of the most complex tasks and the research quality must be verified (Ghauri & Gronhaug, 2005). It is identified that in context of this research (Rennie & Frommer, 2015) two quality verifications are brought under consideration, which are Reliability and Validity. This section presents the detailed discussion within the perspective that how actually the research quality verification is carried out.

3.6.1 Validity

According to Yin (2014) it is identified that the validity has been divided into three categories which comprise of, internal, external and construct validity. However, based on the existing researches (Gulati & Sytch, 2008) (Newbert, 2007)in context of this research we have considered the Cronbach's alpha that is utilized to measure the internal consistency. The test of Cronbach's alpha is conducted, and the key results of the test are identified as below:

Reliability Statistics	
Cronbach's Alpha	N of Items
0.75	10

Table 3-1 Reliability Statistics

3.6.2 Reliability

Reliability carries high importance. It is considered that to increase the performance, past key researches that are conducted within the context of same domain are conducted. However, through these researches, we have designed and developed the research framework model. However, in the context of this research we have considered the researches that have been conducted with the time span of last ten years and are published in recognized journal or conferences.

CHAPTER 4: DATA ANALYSIS

1.4 Frequency Analysis

Some of the important frequency analysis is to determine and regulate the impact of total quality management and organization performance is assumed below:

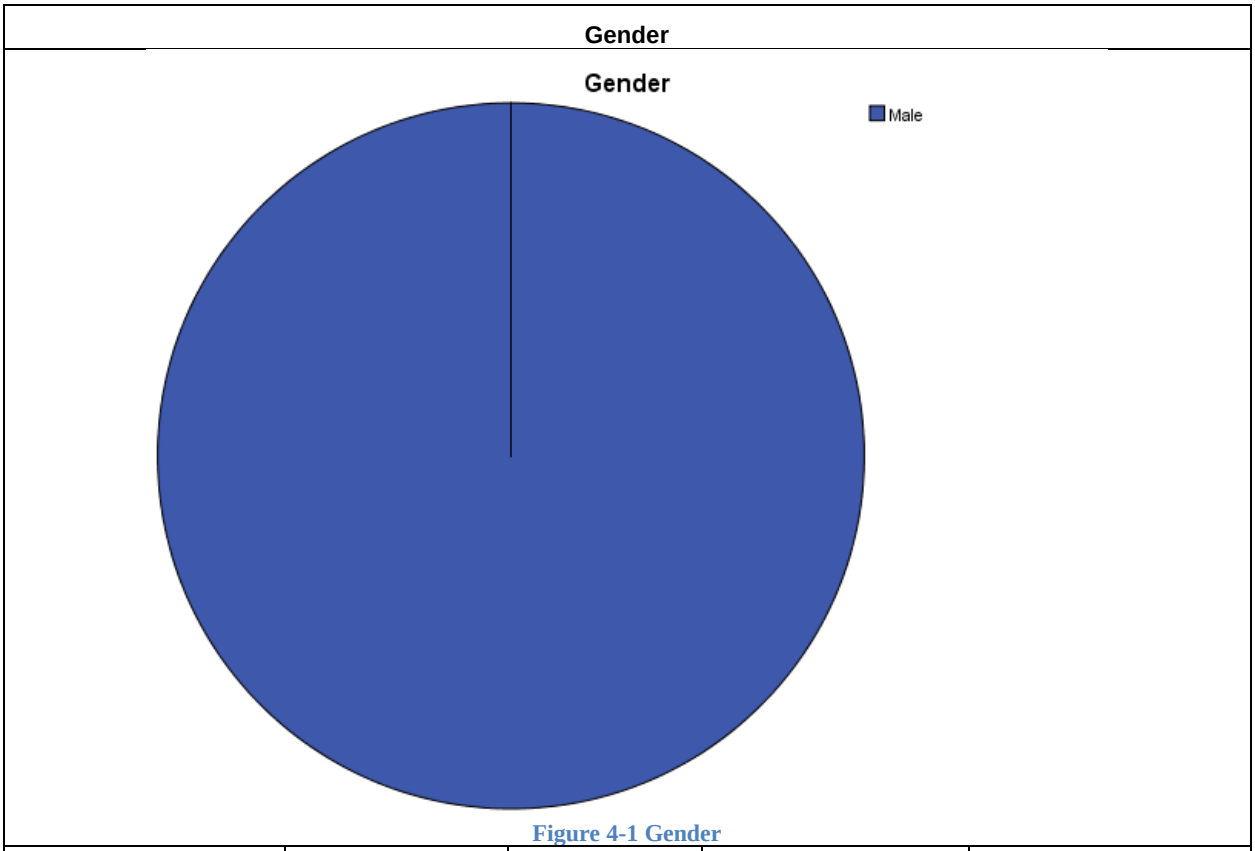


Figure 4-1 Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	20	100.0	100.0	100.0

Table 4-1 Gender

The result of gender is playing an active role for analyzing the real image of total quality management that lead towards organizational performance. The result shows that male contribution for conduction of this study is 100%.

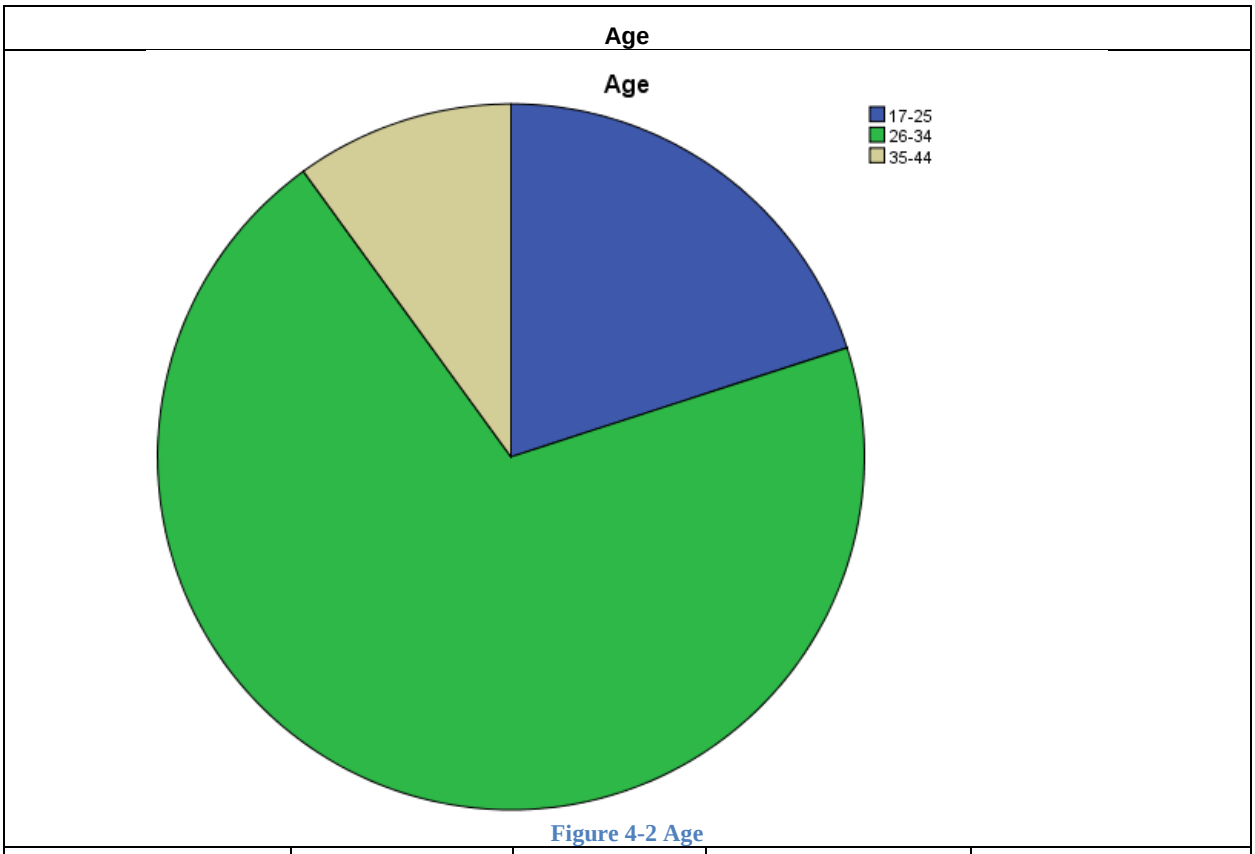


Figure 4-2 Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	17-25	4	20.0	20.0	20.0
	26-34	14	70.0	70.0	90.0
	35-44	2	10.0	10.0	100.0
	Total	20	100.0	100.0	

Table 4-2 Age

Age is a vital demographic information about the respondents. In accordance to the results, it has been critically considered that age is composed of various components. These age components are in procedural of 17 to 25 years having a percentage of 20%, 26 to 34 years having a percentage of 70%, 35 to 44 years having a percentage of 10% participated for conduction of the study.

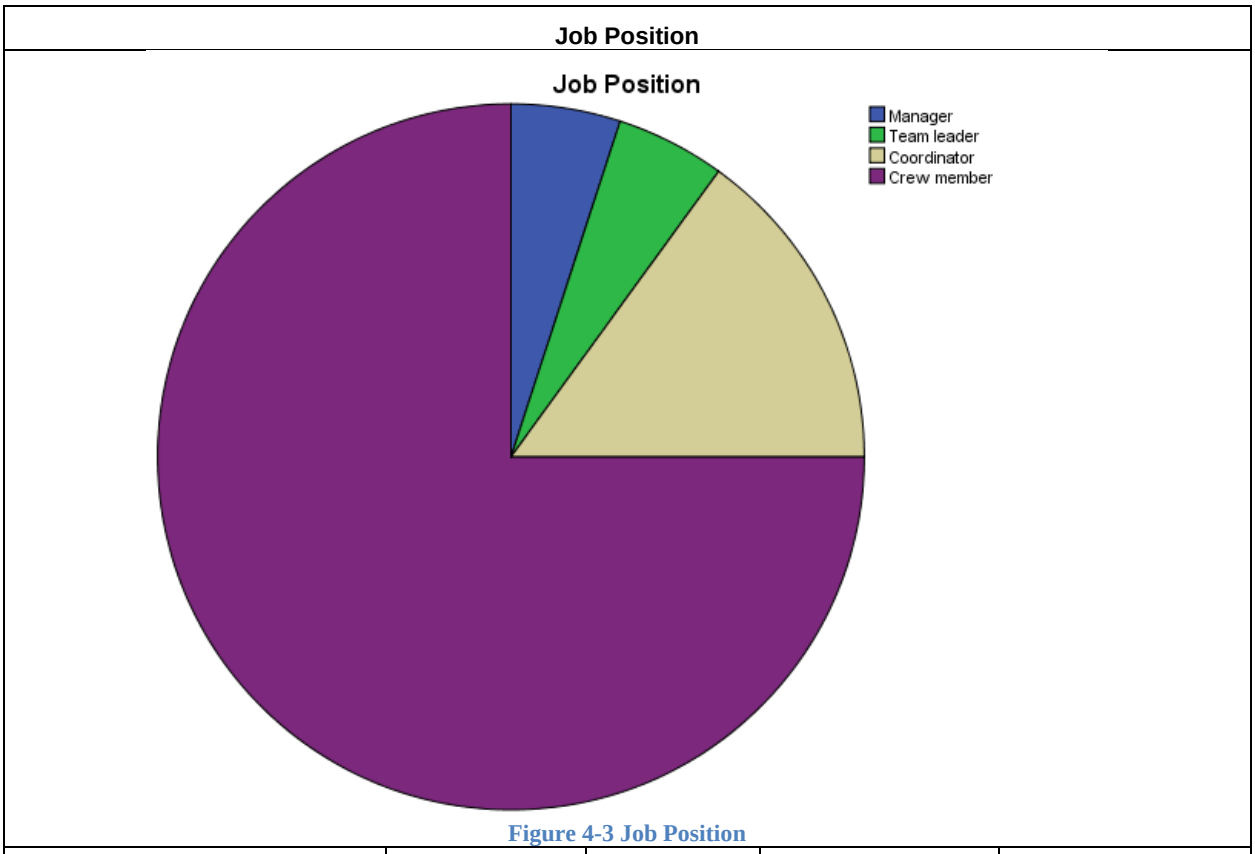


Figure 4-3 Job Position

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Manager	1	5.0	5.0	5.0
	Team leader	1	5.0	5.0	10.0
	Coordinator	3	15.0	15.0	25.0
	Crew member	15	75.0	75.0	100.0
	Total	20	100.0	100.0	

Table 4-3 Job Position

Job position is an important demographic information about the respondents. In accordance to the results, it has been critically considered that job position is composed of various components. These job position components are in procedural of manager having percentage of 5%, team leader having a percentage of 5%, Coordinators having a percentage of 15% and crew members having a percentage of 75% participated for conduction of the study.

Production

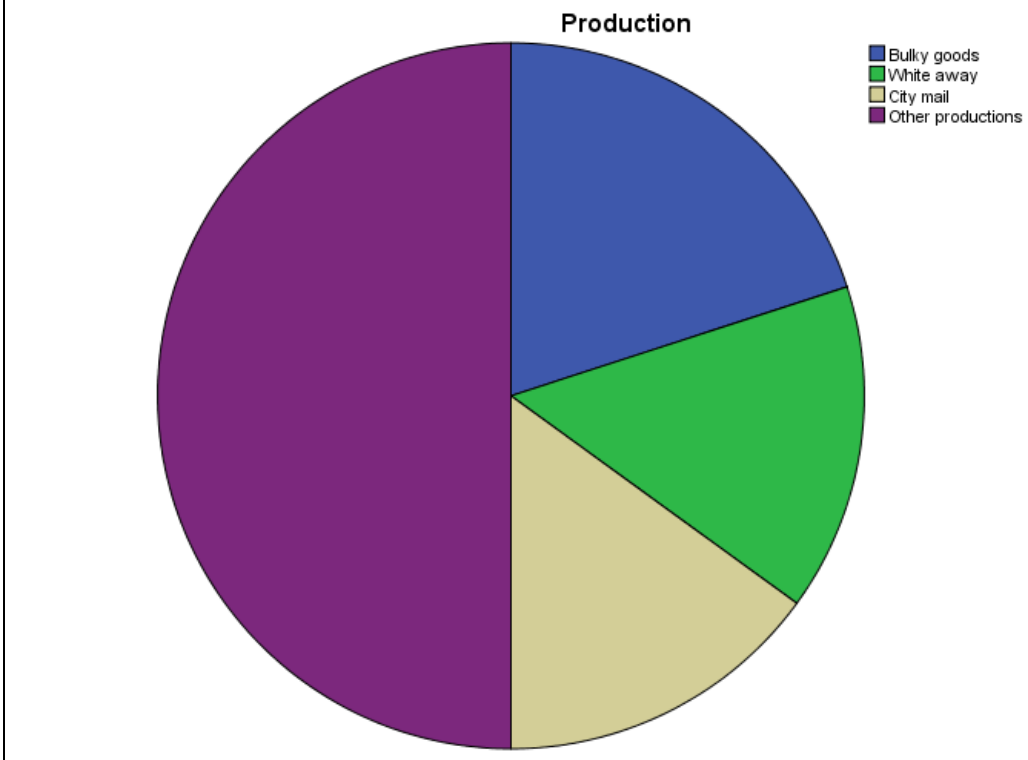


Figure 4-4 Production

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Bulky goods	4	20.0	20.0	20.0
	White away	3	15.0	15.0	35.0
	City mail	3	15.0	15.0	50.0
	Other productions	10	50.0	50.0	100.0
	Total	20	100.0	100.0	

Table 4-4 Production

Since all the productions and their process somehow coincide, they tend to play an active role for determining the company's quality-oriented services in market to meet consumer obligations. In accordance to the results, it has been critically considered that production is composed of various components. These production components are in procedural of Bulky goods having a percentage of 20%, white away having a percentage of 15%, City mail having a percentage of 15% and other productions having a percentage of 50% participated for conduction of the study.

Top management (senior executives and supervisors) view improvement in service quality leading to increase profits

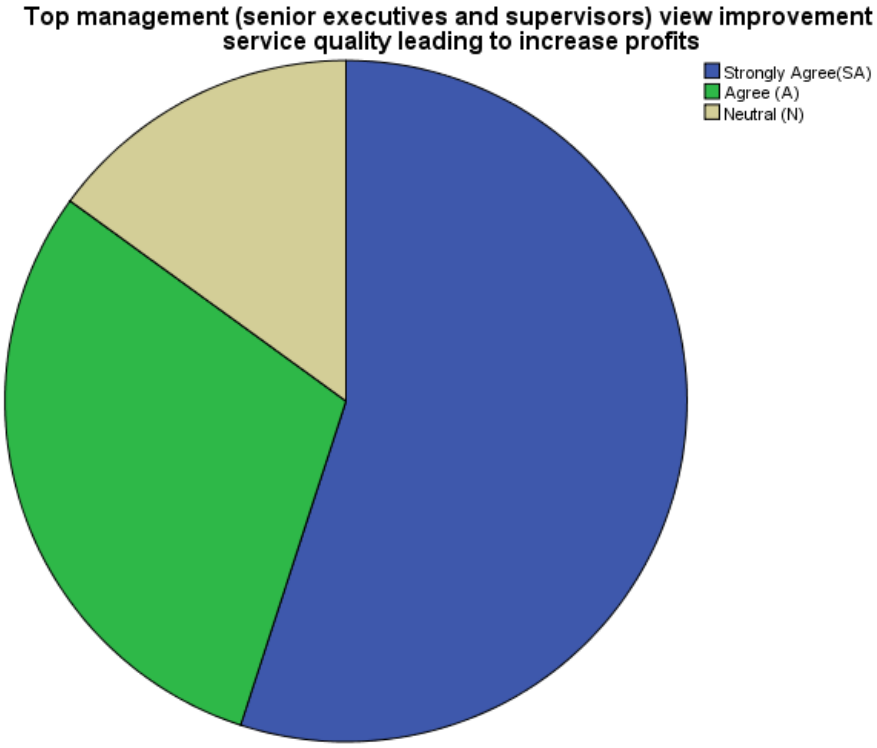


Figure 4-5 Top management (senior executives and supervisors) view improvement in service quality leading to increase profits

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree(SA)	11	55.0	55.0	55.0
	Agree (A)	6	30.0	30.0	85.0
	Neutral (N)	3	15.0	15.0	100.0
	Total	20	100.0	100.0	

Table 4-5 Top management (senior executives and supervisors) view improvement in service quality leading to increase profits

The result shows that top management (senior executives and supervisors) view improvement in service quality leading to increase profits is composed of various components. These result components are in procedural of strongly agree having a percentage of 55%, agree having a percentage of 30%, and neutral having a percentage of 15% participated for conduction of the study.

top management has objectives for quality performance

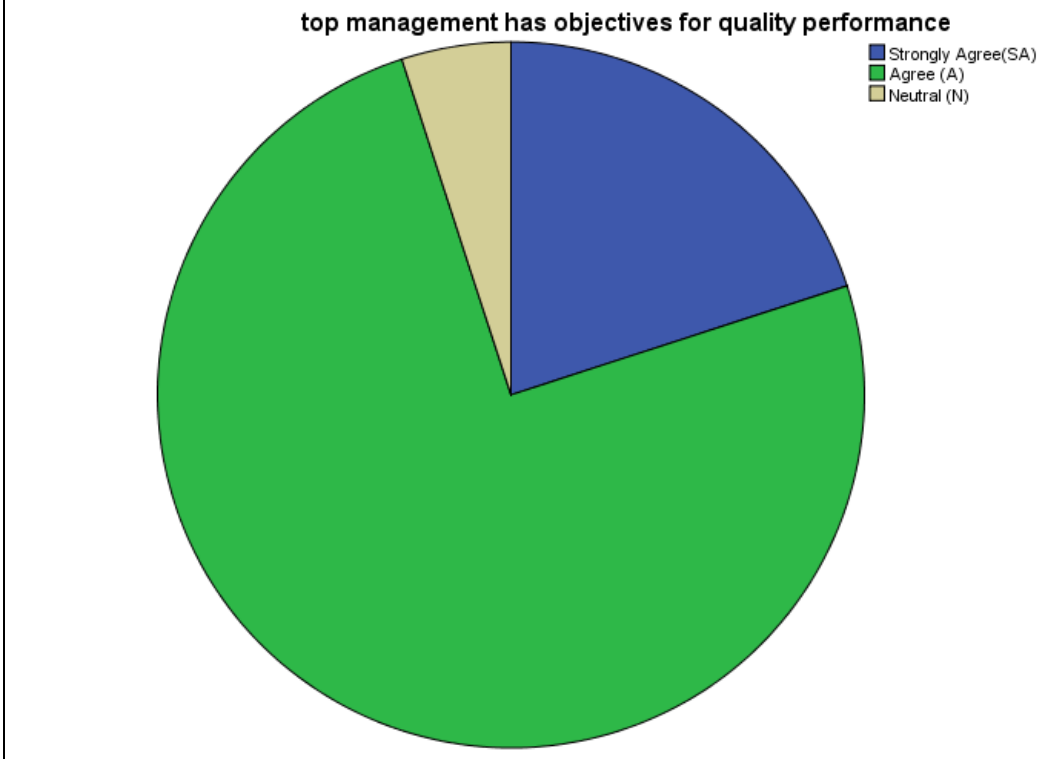


Figure 4-6 top management has objectives for quality performance

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree(SA)	4	20.0	20.0	20.0
	Agree (A)	15	75.0	75.0	95.0
	Neutral (N)	1	5.0	5.0	100.0
	Total	20	100.0	100.0	

Table 4-6 top management has objectives for quality performance

The result shows that top management have objectives for quality performance is composed of various components. These result components are in procedural of strongly agree having a

percentage of 20%, agree having a percentage of 75%, and neutral having a percentage of 5% participated for conduction of the study.

top management evaluates organizational performance through provision of quality services

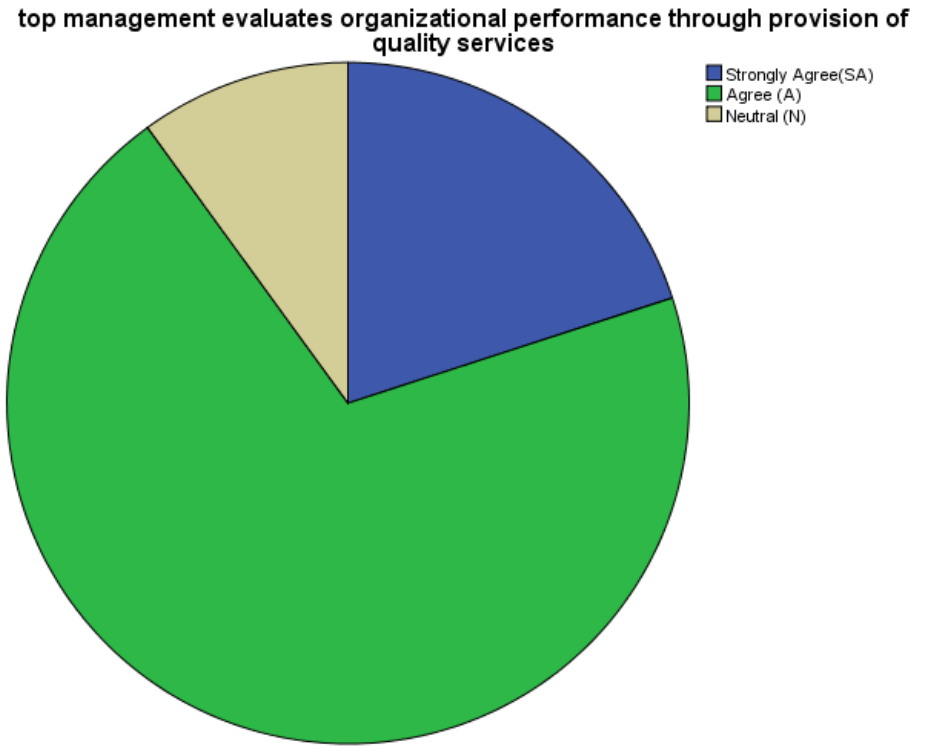


Figure 4-7 top management evaluates organizational performance through provision of quality services

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree(SA)	4	20.0	20.0	20.0
	Agree (A)	14	70.0	70.0	90.0
	Neutral (N)	2	10.0	10.0	100.0
	Total	20	100.0	100.0	

Table 4-7 top management evaluates organizational performance through provision of quality services

The result shows that top management evaluates organizational performance through provision of quality services is composed of various components. These result components are in procedural of strongly agree having a percentage of 20%, agree having a percentage of 70%, and neutral having a percentage of 10% participated for conduction of the study.

TQM assists in alignment of company's goals as well as individual goals

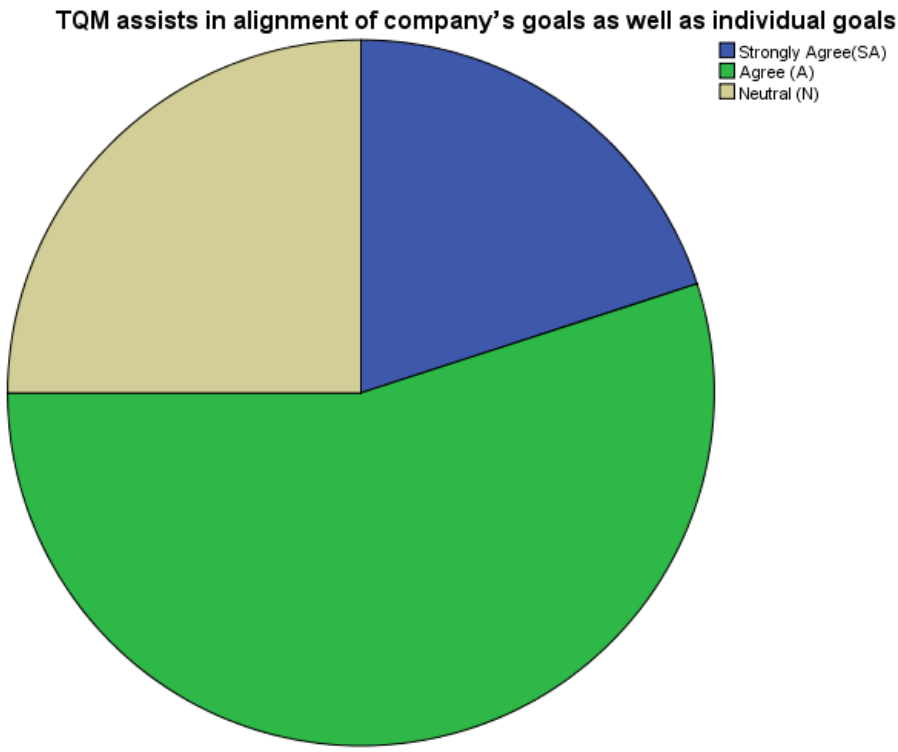


Figure 4-8 TQM assists in alignment of company's goals as well as individual goals

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree(SA)	4	20.0	20.0	20.0
	Agree (A)	11	55.0	55.0	75.0
	Neutral (N)	5	25.0	25.0	100.0
	Total	20	100.0	100.0	

Table 4-8 TQM assists in alignment of company's goals as well as individual goals

The result shows that TQM assists in alignment of company's goals as well as individual goals are composed of various components. These result components are in procedural of strongly agree having a percentage of 20%, agree having a percentage of 55%, and neutral having a percentage of 25% participated for conduction of the study.

There is an uplift in the stature of the organization and the morale of employees through quality measures

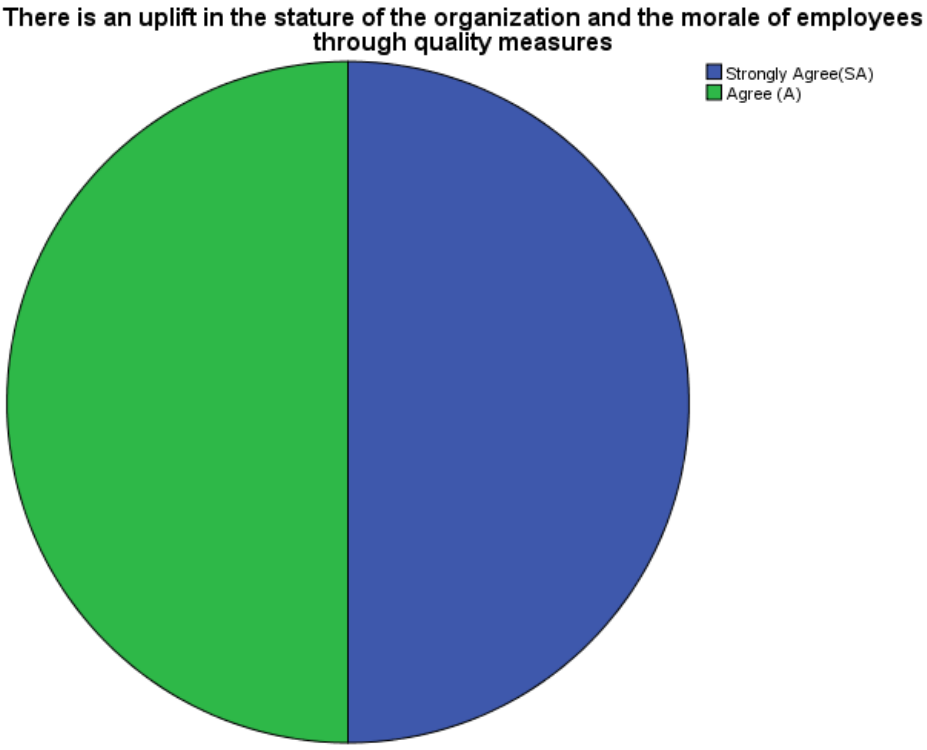


Figure 4-9 There is an uplift in the stature of the organization and the morale of employees through quality measures

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree(SA)	10	50.0	50.0	50.0
	Agree (A)	10	50.0	50.0	100.0
	Total	20	100.0	100.0	

Table 4-9 There is an uplift in the stature of the organization and the morale of employees through quality measures

The result shows that there is uplift in the stature of the organization and the morale of employees through quality measures are composed of various components. These result components are in procedural of strongly agree having a percentage of 50% and agree having a percentage of 50% participated for conduction of the study.

In case of deviances in processes, solutions are drafted out in the best feasible way

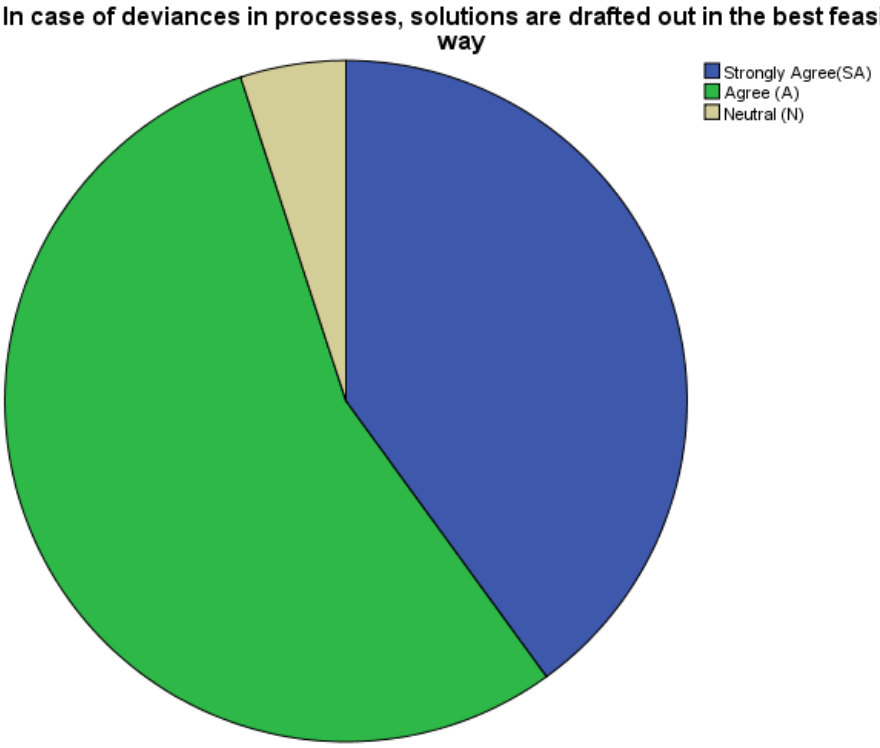


Figure 4-10 In case of deviances in processes, solutions are drafted out in the best feasible way

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree(SA)	8	40.0	40.0	40.0
	Agree (A)	11	55.0	55.0	95.0
	Neutral (N)	1	5.0	5.0	100.0
	Total	20	100.0	100.0	

Table 4-10 In case of deviances in processes, solutions are drafted out in the best feasible way

The result shows that are in case of deviances in processes, solutions are drafted out in the best feasible way are composed of various components. These result components are in procedural of strongly agree having a percentage of 40%, agree having a percentage of 55% and neutral having a percentage of 5% participated for conduction of the study.

Uncertainty avoidance measures are taken into consideration

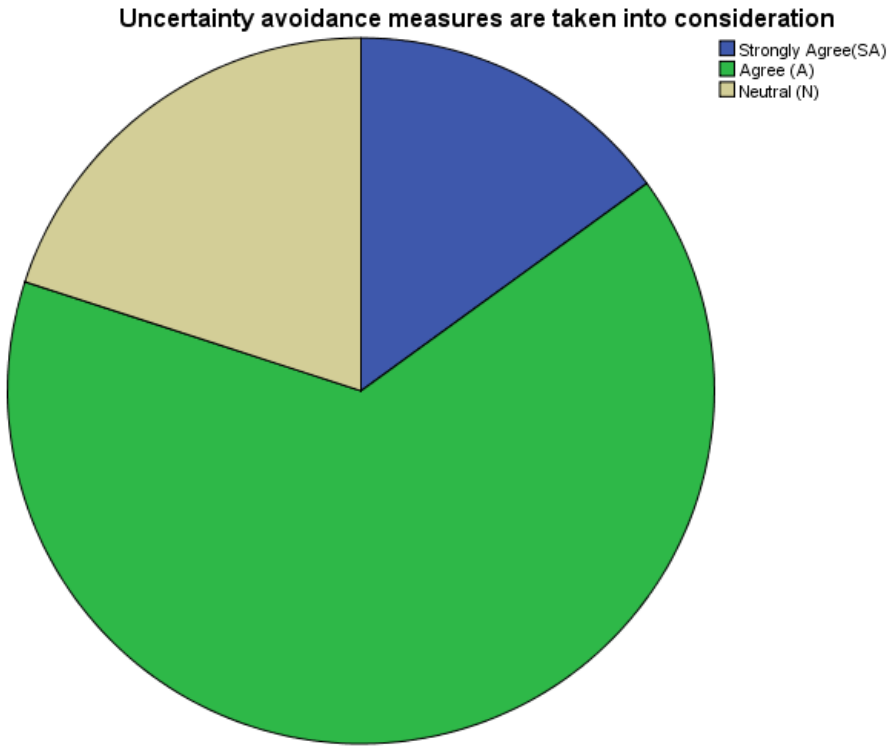


Figure 4-11 Uncertainty avoidance measures are taken into consideration

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree(SA)	3	15.0	15.0	15.0
	Agree (A)	13	65.0	65.0	80.0
	Neutral (N)	4	20.0	20.0	100.0
	Total	20	100.0	100.0	

Table 4-11 Uncertainty avoidance measures are taken into consideration

The result shows that are in case of uncertainty avoidance measures are taken into consideration are composed of various components. These result components are in procedural of strongly agree having a percentage of 15%, agree having a percentage of 65% and neutral having a percentage of 20% participated for conduction of the study.

With the provision of precise and concise information, the best result could be extracted

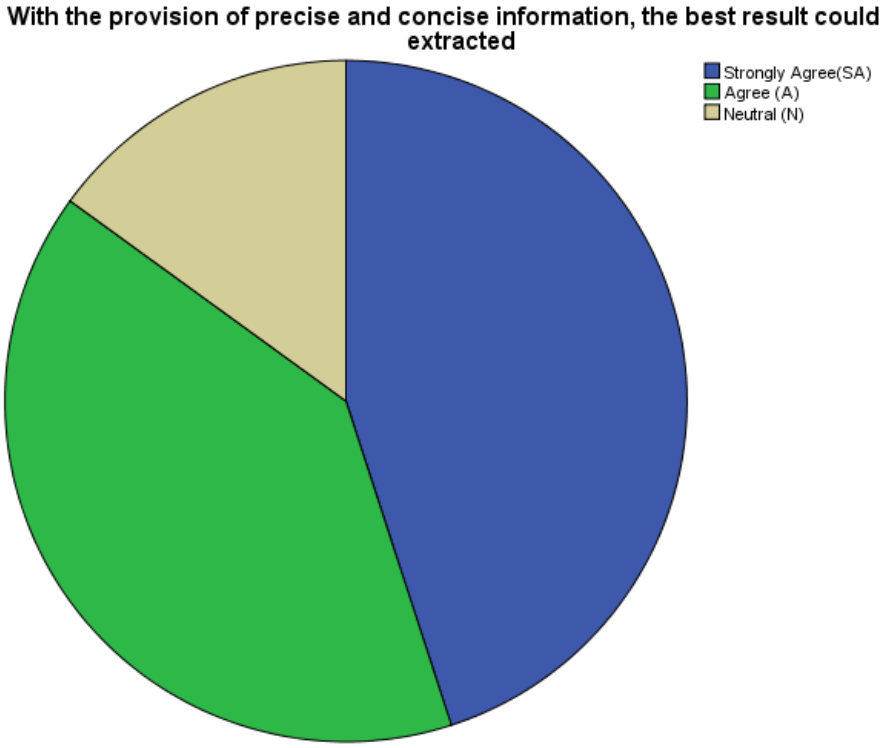


Figure 4-12 With the provision of precise and concise information, the best result could be extracted

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree(SA)	9	45.0	45.0	45.0
	Agree (A)	8	40.0	40.0	85.0
	Neutral (N)	3	15.0	15.0	100.0
	Total	20	100.0	100.0	

Table 4-12 With the provision of precise and concise information, the best result could be extracted

The result shows that are with the provision of precise and concise information, the best result could be extracted are composed of various components. These result components are in procedural of strongly agree having a percentage of 45%, agree having a percentage of 40% and neutral having a percentage of 15% participated for conduction of the study.

The Supply Chain Management is completely based on the integration of quality-based processes

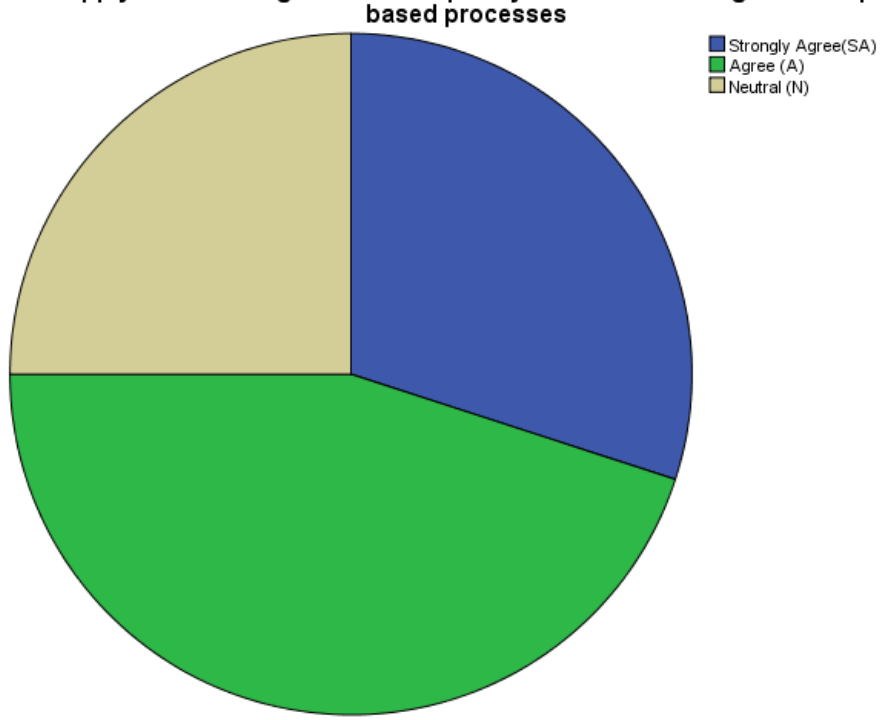


Figure 4-13 The Supply Chain Management is completely based on the integration of quality-based processes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree(SA)	6	30.0	30.0	30.0
	Agree (A)	9	45.0	45.0	75.0
	Neutral (N)	5	25.0	25.0	100.0
	Total	20	100.0	100.0	

Table 4-13 The Supply Chain Management is completely based on the integration of quality-based processes

The result shows that are the supply chain management is completely based on the integration of quality-based processes are composed of various components. These result components are in procedural of strongly agree having a percentage of 30%, agree having a percentage of 45% and neutral having a percentage of 25% participated for conduction of the study.

The clients have an effective system to ensure quality of the services

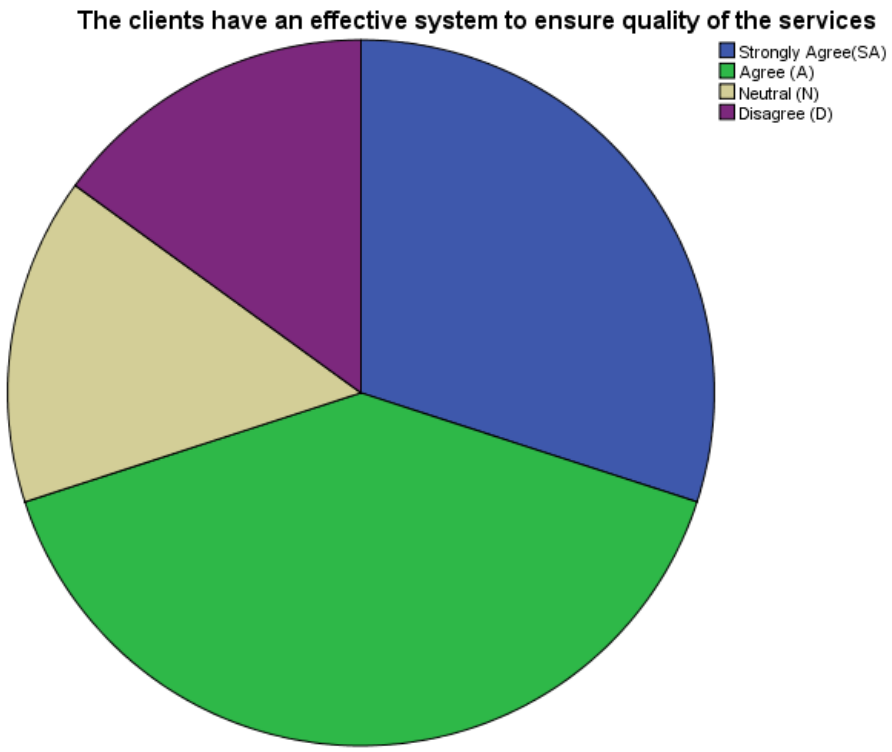


Figure 4-14 The clients have an effective system to ensure quality of the services

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree(SA)	6	30.0	30.0	30.0
	Agree (A)	8	40.0	40.0	70.0
	Neutral (N)	3	15.0	15.0	85.0
	Disagree (D)	3	15.0	15.0	100.0
	Total	20	100.0	100.0	

Table 4-14 The clients have an effective system to ensure quality of the services

The result shows that the clients have an effective system to ensure quality of the services is composed of various components. These result components are in procedural of strongly agree having a percentage of 30%, agree having a percentage of 40%, neutral having a percentage of 15% and disagree having a percentage of 15% participated for conduction of the study.

We emphasize on quality and delivery performance rather than price in selecting clients

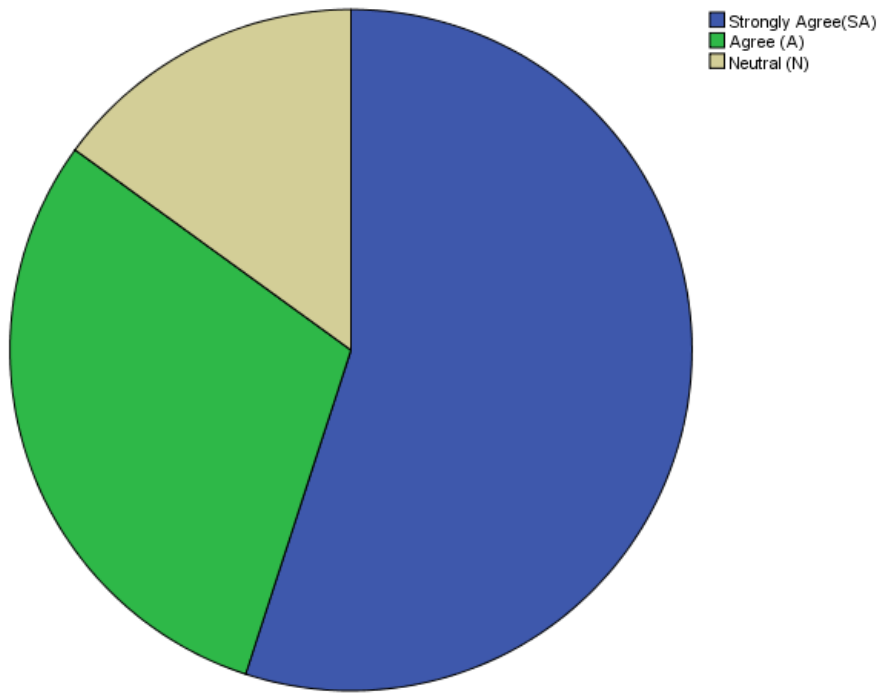


Figure 4-15 We emphasize on quality and delivery performance rather than price in selecting clients

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree(SA)	11	55.0	55.0	55.0
	Agree (A)	6	30.0	30.0	85.0
	Neutral (N)	3	15.0	15.0	100.0
	Total	20	100.0	100.0	

Table 4-15 We emphasize on quality and delivery performance rather than price in selecting clients

The result shows that we emphasize on quality and delivery performance rather than price in selecting clients is composed of various components. These result components are in procedural of strongly agree having a percentage of 55%, agree having a percentage of 30% and neutral having a percentage of 15% participated for conduction of the study.

The clients are involved in our quality training

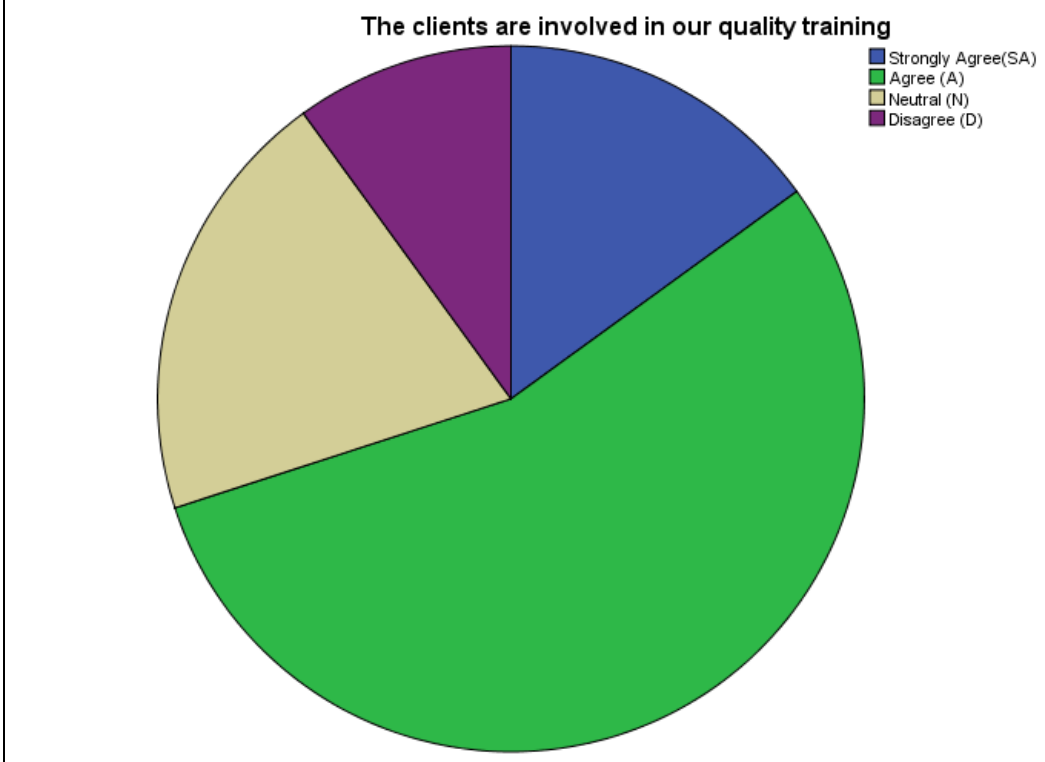


Figure 4-16 The clients are involved in our quality training

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree(SA)	3	15.0	15.0	15.0
	Agree (A)	11	55.0	55.0	70.0
	Neutral (N)	4	20.0	20.0	90.0
	Disagree (D)	2	10.0	10.0	100.0
	Total	20	100.0	100.0	

Table 4-16 The clients are involved in our quality training

The result shows that clients are involved in our quality training is composed of various components. These result components are in procedural of strongly agree having a percentage of 15%, agree having a percentage of 55%, neutral having a percentage of 20% and disagree having a percentage of 10% participated for conduction of the study.

We work closely with clients to improve each other's processes

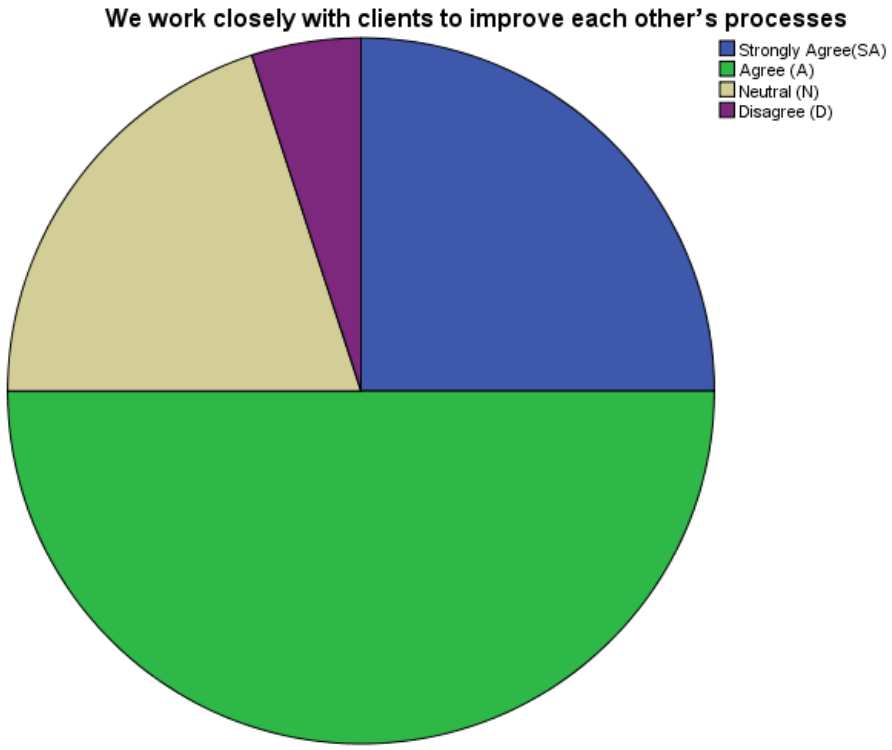


Figure 4-17 We work closely with clients to improve each other's processes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree(SA)	5	25.0	25.0	25.0
	Agree (A)	10	50.0	50.0	75.0
	Neutral (N)	4	20.0	20.0	95.0
	Disagree (D)	1	5.0	5.0	100.0
	Total	20	100.0	100.0	

Table 4-17 We work closely with clients to improve each other's processes

The result shows that we work closely with clients to improve each other's processes is composed of various components. These result components are in procedural of strongly agree having a percentage of 25%, agree having a percentage of 50%, neutral having a percentage of 20% and disagree having a percentage of 5% participated for conduction of the study.

the clients are actively involved in our new product development process

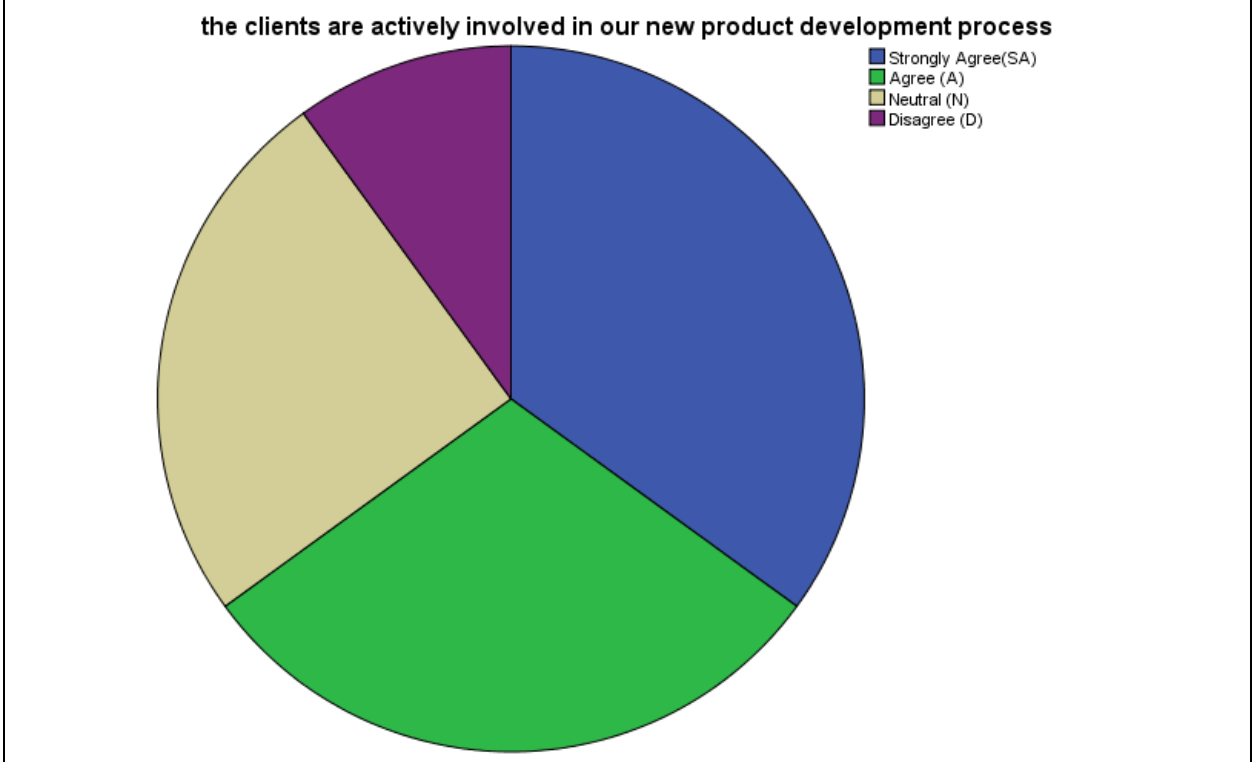


Figure 4-18 the clients are actively involved in our new product development process

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree(SA)	7	35.0	35.0	35.0
	Agree (A)	6	30.0	30.0	65.0
	Neutral (N)	5	25.0	25.0	90.0
	Disagree (D)	2	10.0	10.0	100.0
	Total	20	100.0	100.0	

Table 4-18 the clients are actively involved in our new product development process

The result shows that the clients are actively involved in our new product development process is composed of various components. These result components are in procedural of strongly agree having a percentage of 35%, agree having a percentage of 30%, neutral having a percentage of 25% and disagree having a percentage of 10% participated for conduction of the study.

Employee involvement and suggestions are highly valued and taken under consideration, as they have a closer look with the hand held operations

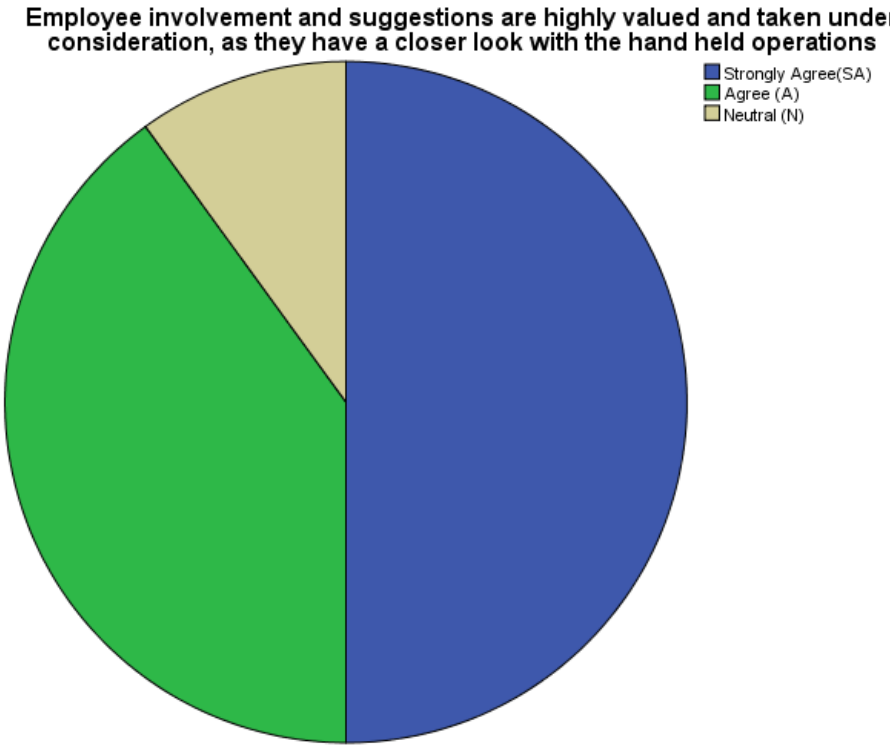


Figure 4-19 Employee involvement and suggestions are highly valued and taken under consideration, as they have a closer look with the hand held operations

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree(SA)	10	50.0	50.0	50.0
	Agree (A)	8	40.0	40.0	90.0
	Neutral (N)	2	10.0	10.0	100.0
	Total	20	100.0	100.0	

Table 4-19 Employee involvement and suggestions are highly valued and taken under consideration, as they have a closer look with the hand held operations

The result shows that employee involvement and suggestions are highly valued and taken under consideration, as they have a closer look with the hand-held operations is composed of various components. These result components are in procedural of strongly agree having a percentage of

50%, agree having a percentage of 40% and neutral having a percentage of 10% participated for conduction of the study.

Quality and Reliability of our services are high

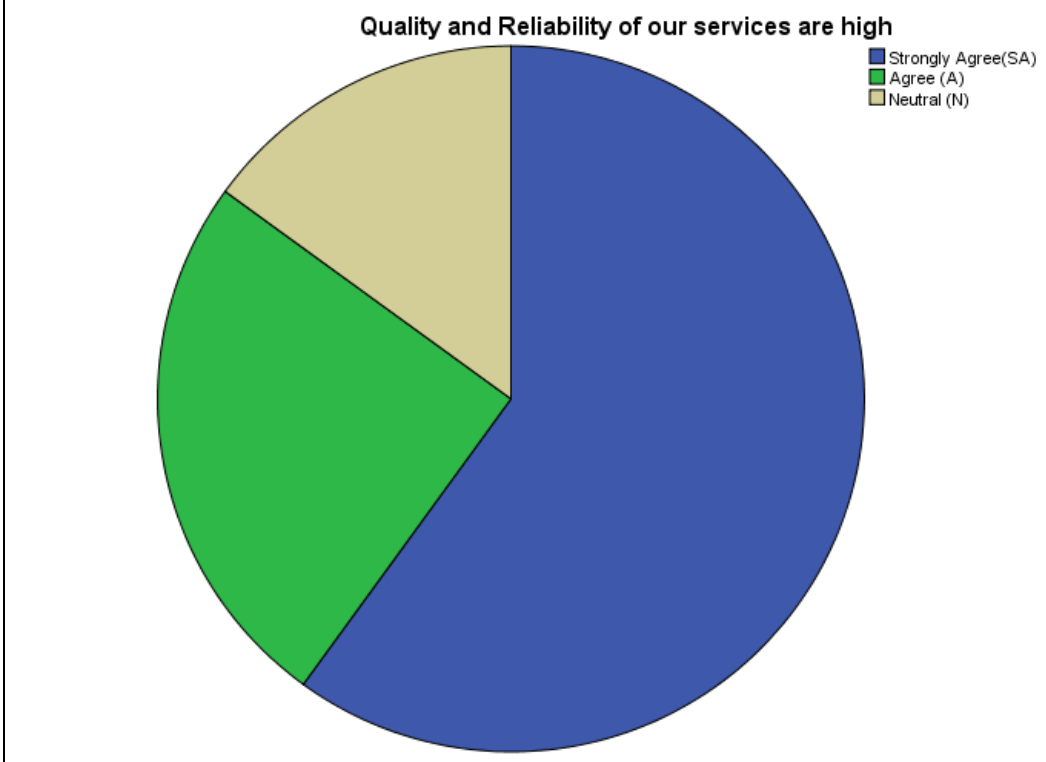


Figure 4-20 Quality and Reliability of our services are high

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree(SA)	12	60.0	60.0	60.0
	Agree (A)	5	25.0	25.0	85.0
	Neutral (N)	3	15.0	15.0	100.0
	Total	20	100.0	100.0	

Table 4-20 Quality and Reliability of our services are high

The result shows that quality and reliability of our services are high is composed of various components. These result components are in procedural of strongly agree having a percentage of 60%, agree having a percentage of 25% and neutral having a percentage of 15% participated for conduction of the study.

There is increased transparency in the communication amongst productions

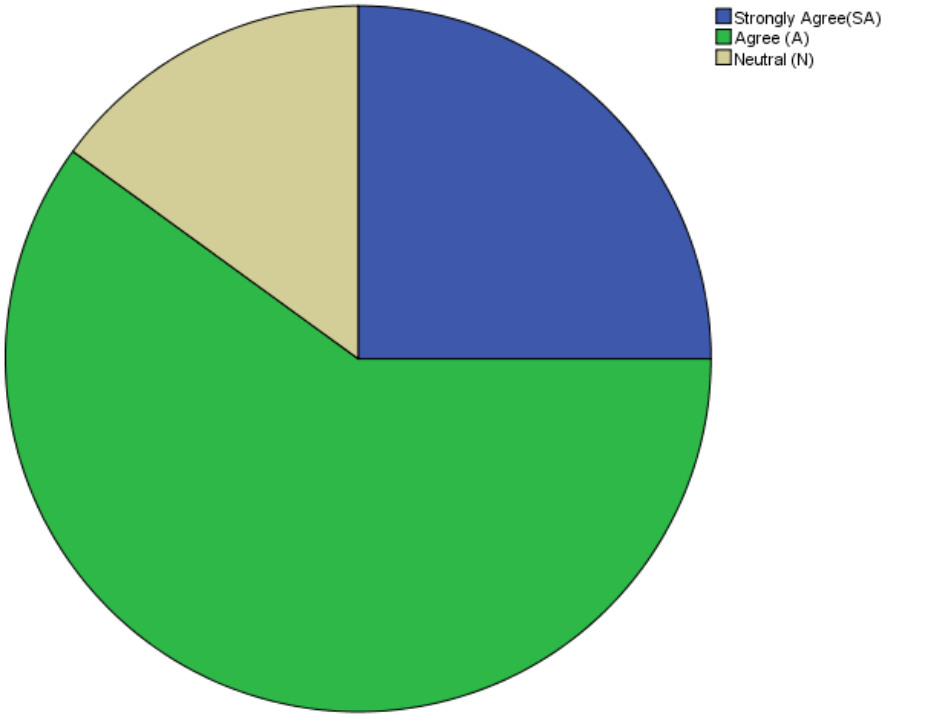


Figure 4-21 There is increased transparency in the communication amongst productions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree(SA)	5	25.0	25.0	25.0
	Agree (A)	12	60.0	60.0	85.0
	Neutral (N)	3	15.0	15.0	100.0
	Total	20	100.0	100.0	

Table 4-21 There is increased transparency in the communication amongst productions

The result shows that there is increased transparency in the communication amongst productions is composed of various components. These result components are in procedural of strongly agree having a percentage of 25%, agree having a percentage of 60% and neutral having a percentage of 15% participated for conduction of the study.

We deliver our services on time to customers

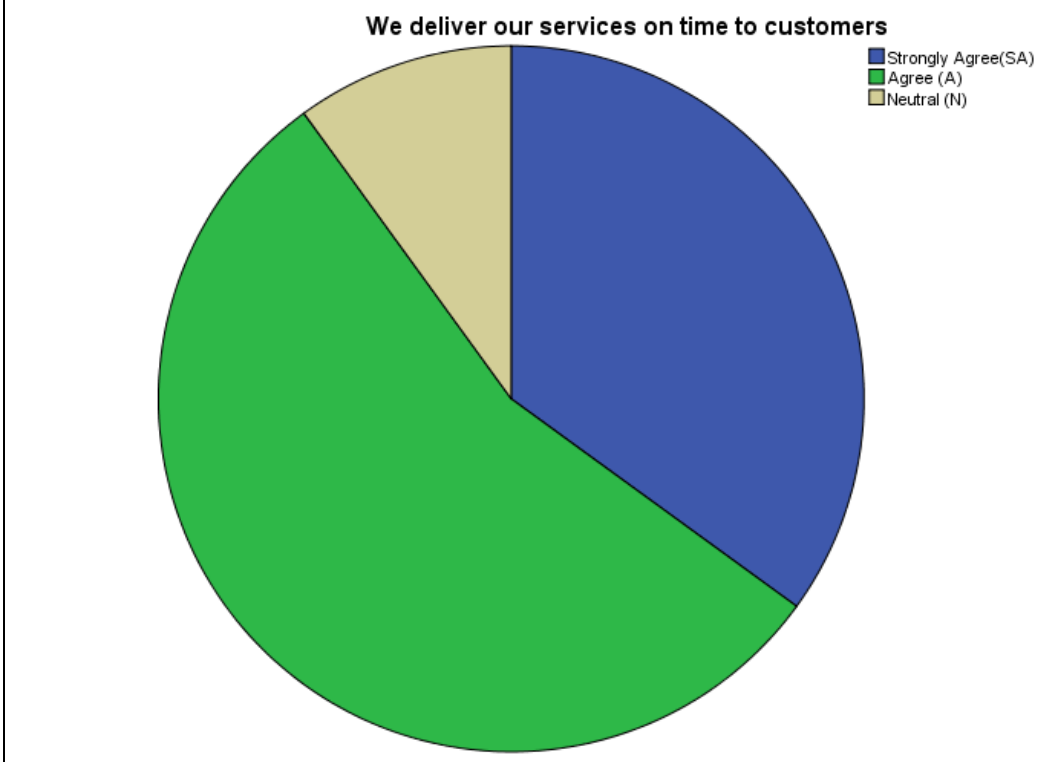


Figure 4-22 We deliver our services on time to customers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree(SA)	7	35.0	35.0	35.0
	Agree (A)	11	55.0	55.0	90.0
	Neutral (N)	2	10.0	10.0	100.0
	Total	20	100.0	100.0	

Table 4-22 We deliver our services on time to customers

The result shows that we deliver our services on time to customers is composed of various components. These result components are in procedural of strongly agree having a percentage of 35%, agree having a percentage of 55% and neutral having a percentage of 10% participated for conduction of the study.

We design processes in our firm to be "mistake-proof" to minimize the changes of errors

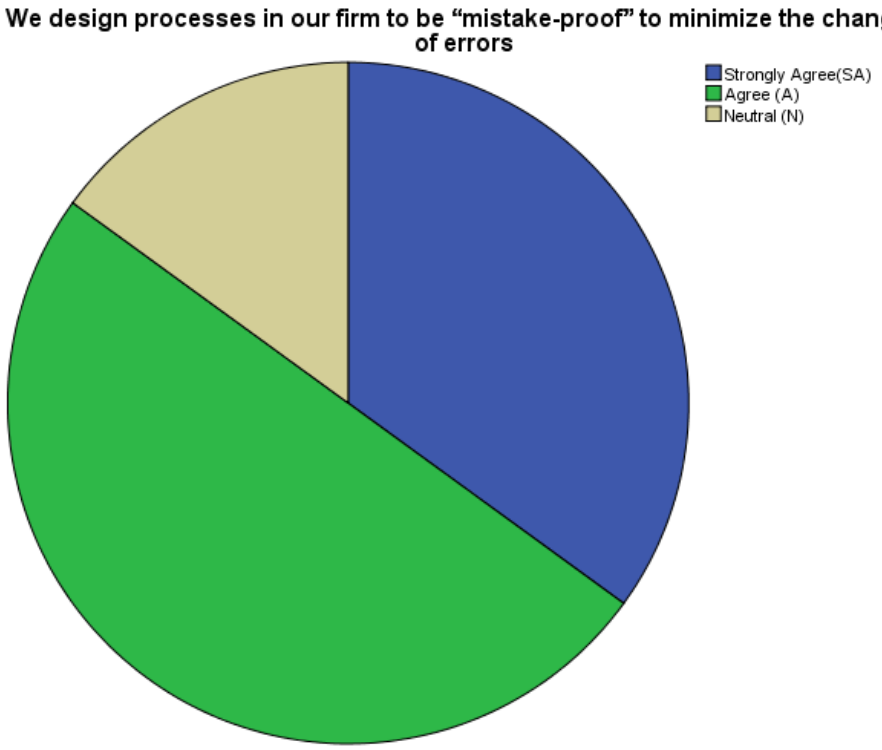


Figure 4-23 We design processes in our firm to be "mistake-proof" to minimize the changes of errors

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree(SA)	7	35.0	35.0	35.0
	Agree (A)	10	50.0	50.0	85.0
	Neutral (N)	3	15.0	15.0	100.0
	Total	20	100.0	100.0	

Table 4-23 We design processes in our firm to be "mistake-proof" to minimize the changes of errors

The result shows that we design processes in our firm to be "mistake-proof" to minimize the changes of errors is composed of various components. These result components are in procedural of strongly agree having a percentage of 35%, agree having a percentage of 50% and neutral having a percentage of 15% participated for conduction of the study.

We make extensive use of statistical techniques to reduce variation in processes

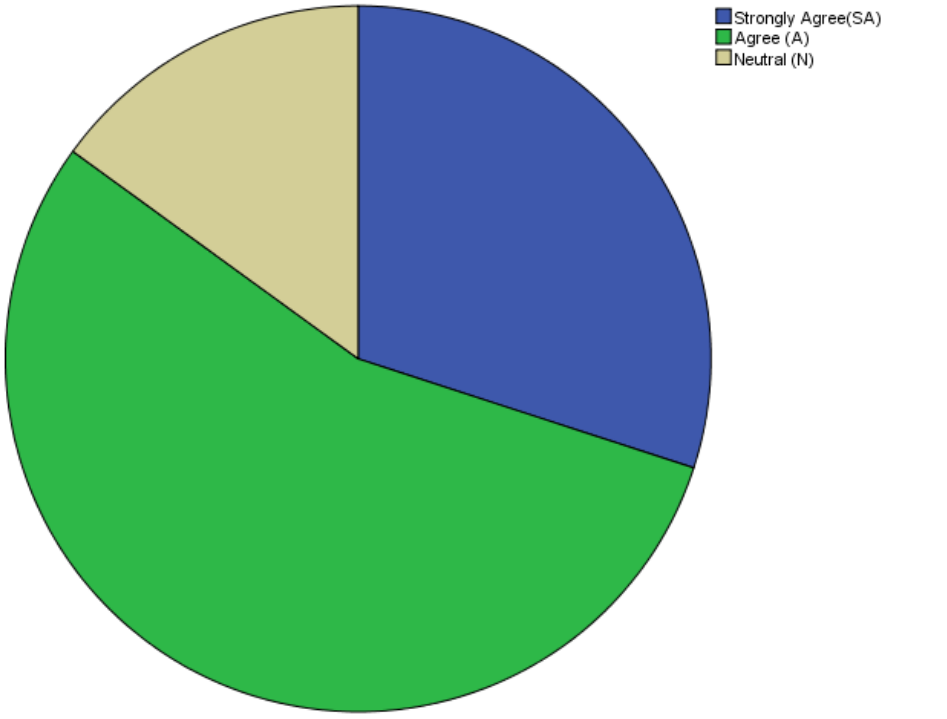


Figure 4-24 We make extensive use of statistical techniques to reduce variation in processes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree(SA)	6	30.0	30.0	30.0
	Agree (A)	11	55.0	55.0	85.0
	Neutral (N)	3	15.0	15.0	100.0
	Total	20	100.0	100.0	

Table 4-24 We make extensive use of statistical techniques to reduce variation in processes

The result shows that we make extensive use of statistical techniques to reduce variation in processes is composed of various components. These result components are in procedural of strongly agree having a percentage of 30%, agree having a percentage of 55% and neutral having a percentage of 15% participated for conduction of the study.

We give clear, comprehensive, and standardized documentations and instructions about work methods and process instructions to employees

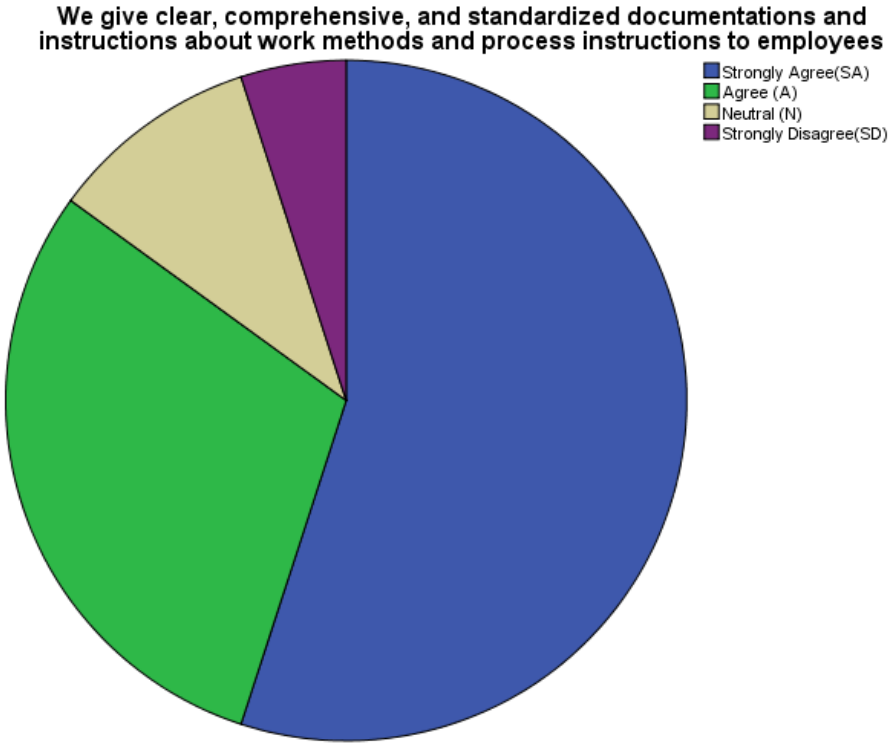


Figure 4-25 We give clear, comprehensive, and standardized documentations and instructions about work methods and process instructions to employees

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree(SA)	11	55.0	55.0	55.0
	Agree (A)	6	30.0	30.0	85.0
	Neutral (N)	2	10.0	10.0	95.0
	Strongly Disagree(SD)	1	5.0	5.0	100.0
	Total	20	100.0	100.0	

Table 4-25 We give clear, comprehensive, and standardized documentations and instructions about work methods and process instructions to employees

The result shows that we give clear, comprehensive, and standardized documentations and instructions about work methods and process instructions to employees is composed of various components. These result components are in procedural of strongly agree having a percentage of

55%, agree having a percentage of 30%, neutral having a percentage of 10% and strongly disagree having a percentage of 5% participated for conduction of the study.

Crew members have the right to contribute to the think tank, in order to achieve continuous improvement

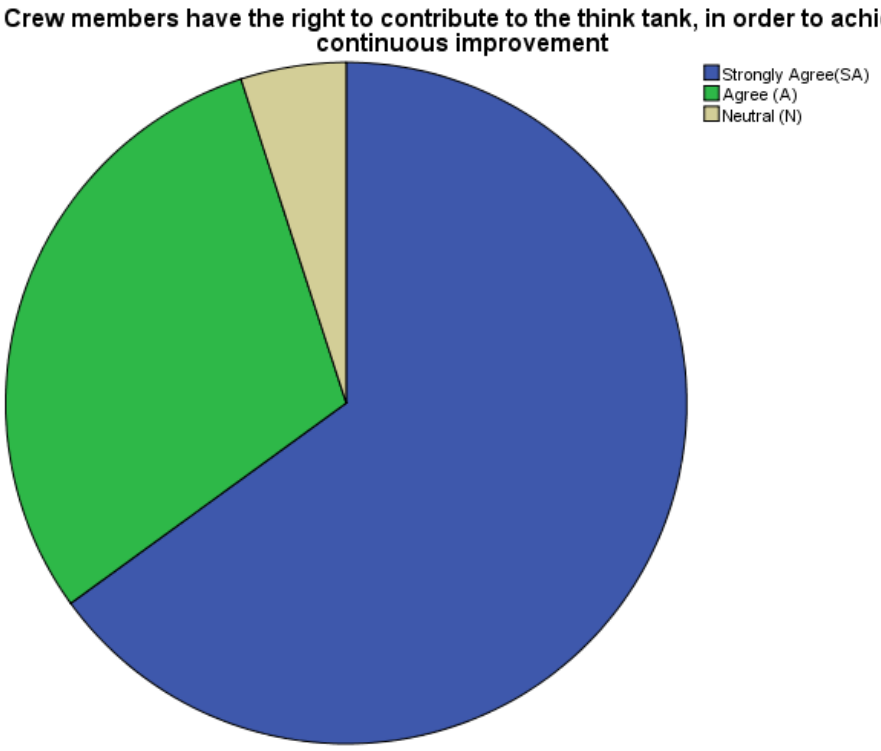


Figure 4-26 Crew members have the right to contribute to the think tank, in order to achieve continuous improvement

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree(SA)	13	65.0	65.0	65.0
	Agree (A)	6	30.0	30.0	95.0
	Neutral (N)	1	5.0	5.0	100.0
	Total	20	100.0	100.0	

Table 4-26 Crew members have the right to contribute to the think tank, in order to achieve continuous improvement

The result shows that crew members have the right to contribute to the think tank; in order to achieve continuous improvement s is composed of various components. These result components are in procedural of strongly agree having a percentage of 65%, agree having a percentage of 30%, and neutral having a percentage of 5% participated for conduction of the study.

the firm has an effective performance measurement system to track overall organizational performance

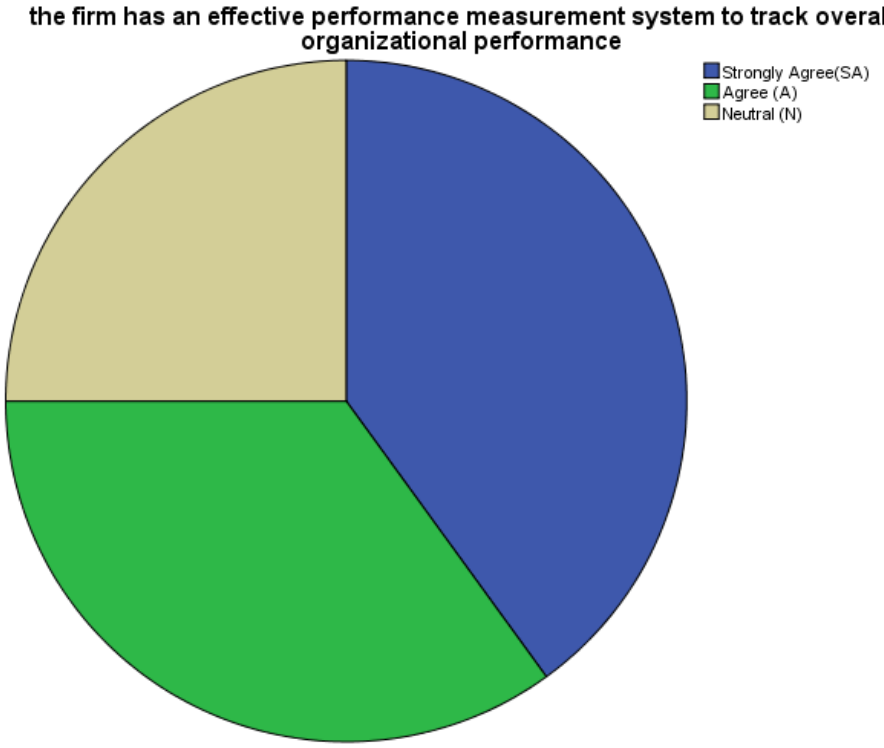


Figure 4-27 the firm has an effective performance measurement system to track overall organizational performance

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree(SA)	8	40.0	40.0	40.0
	Agree (A)	7	35.0	35.0	75.0
	Neutral (N)	5	25.0	25.0	100.0
	Total	20	100.0	100.0	

Table 4-27 the firm has an effective performance measurement system to track overall organizational performance

The result shows that the firm has an effective performance measurement system to track overall organizational performance is composed of various components. These result components are in procedural of strongly agree having a percentage of 40%, agree having a percentage of 35%, and neutral having a percentage of 25% participated for conduction of the study.

Quality data (error rates, defect rates, scrap, defects, rework rates, cost of quality, etc.) are available

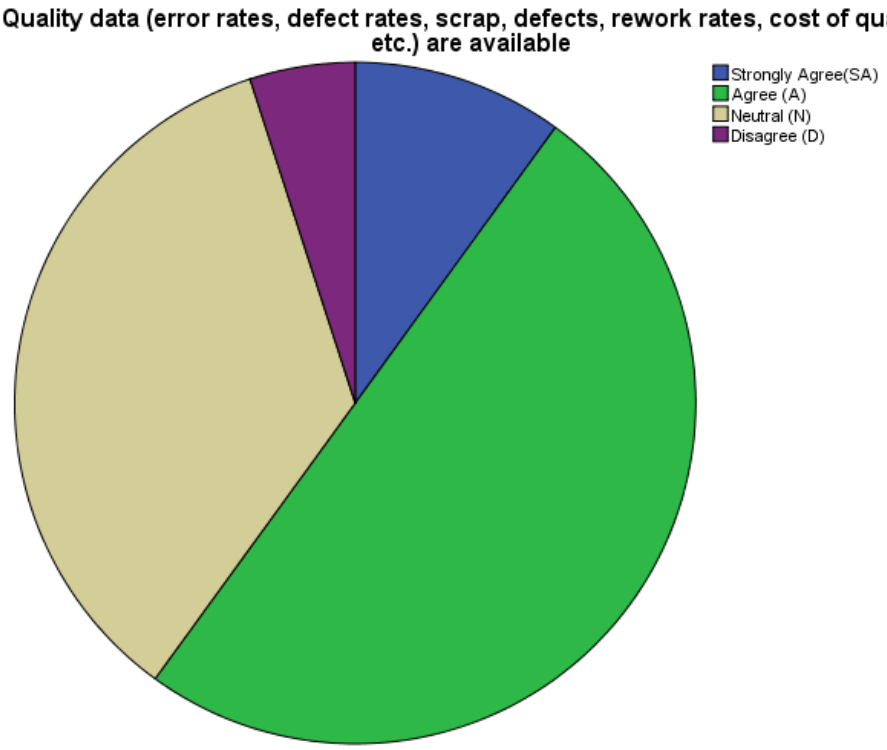


Figure 4-28 Quality data (error rates, defect rates, scrap, defects, rework rates, cost of quality, etc.) are available

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree(SA)	2	10.0	10.0	10.0
	Agree (A)	10	50.0	50.0	60.0
	Neutral (N)	7	35.0	35.0	95.0
	Disagree (D)	1	5.0	5.0	100.0
	Total	20	100.0	100.0	

Table 4-28 Quality data (error rates, defect rates, scrap, defects, rework rates, cost of quality, etc.) are available

The result shows that quality data (error rates, defect rates, scrap, defects, rework rates, cost of quality, etc.) are available is composed of various components. These result components are in procedural of strongly agree having a percentage of 10%, agree having a percentage of 50%, neutral having percentage of 35% and disagree having a percentage of 5% participated for conduction of the study.

Timely firm performance data is always available

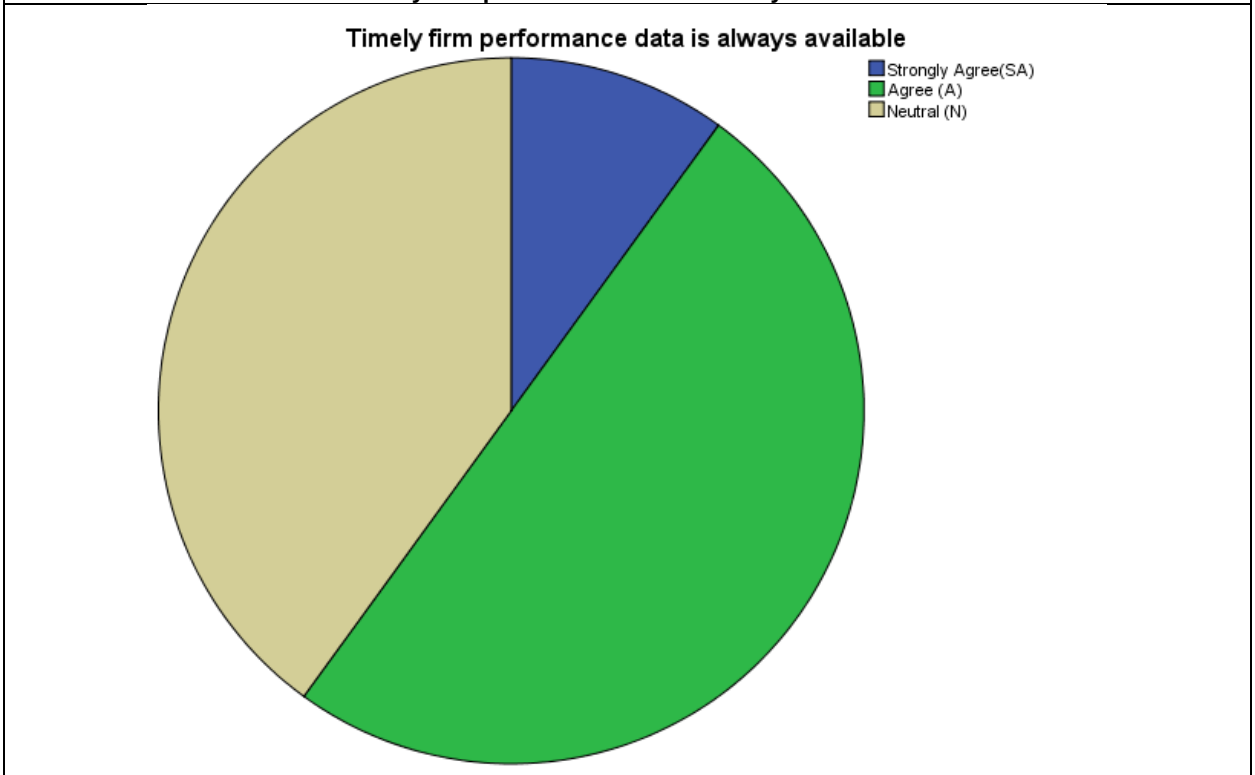


Figure 4-29 Timely firm performance data is always available

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree(SA)	2	10.0	10.0	10.0
	Agree (A)	10	50.0	50.0	60.0
	Neutral (N)	8	40.0	40.0	100.0
	Total	20	100.0	100.0	

Table 4-29 Timely firm performance data is always available

The result shows that timely firm performance data is always available is composed of various components. These result components are in procedural of strongly agree having a percentage of 10%, agree having a percentage of 50% and neutral having percentage of 40% participated for conduction of the study.

Quality of the products and services enhances the organizational performance, as it leads towards strengthening the relationship with the client

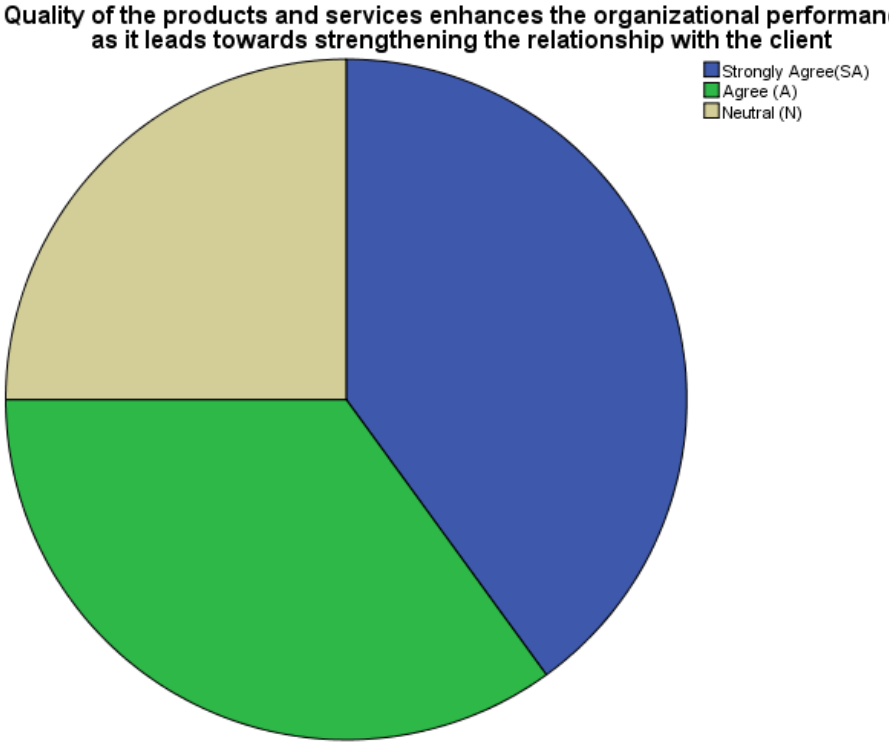


Figure 4-30 Quality of the products and services enhances the organizational performance, as it leads towards strengthening the relationship with the client

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree(SA)	8	40.0	40.0	40.0
	Agree (A)	7	35.0	35.0	75.0
	Neutral (N)	5	25.0	25.0	100.0
	Total	20	100.0	100.0	

Table 4-30 Quality of the products and services enhances the organizational performance, as it leads towards strengthening the relationship with the client

The result shows that quality of the products and services enhances the organizational performance, as it leads towards strengthening the relationship with the client is composed of various components. These result components are in procedural of strongly agree having a percentage of 40%, agree having a percentage of 35% and neutral having a percentage of 25% participated for conduction of the study.

Implementation of total quality management enhances the organizational performance.

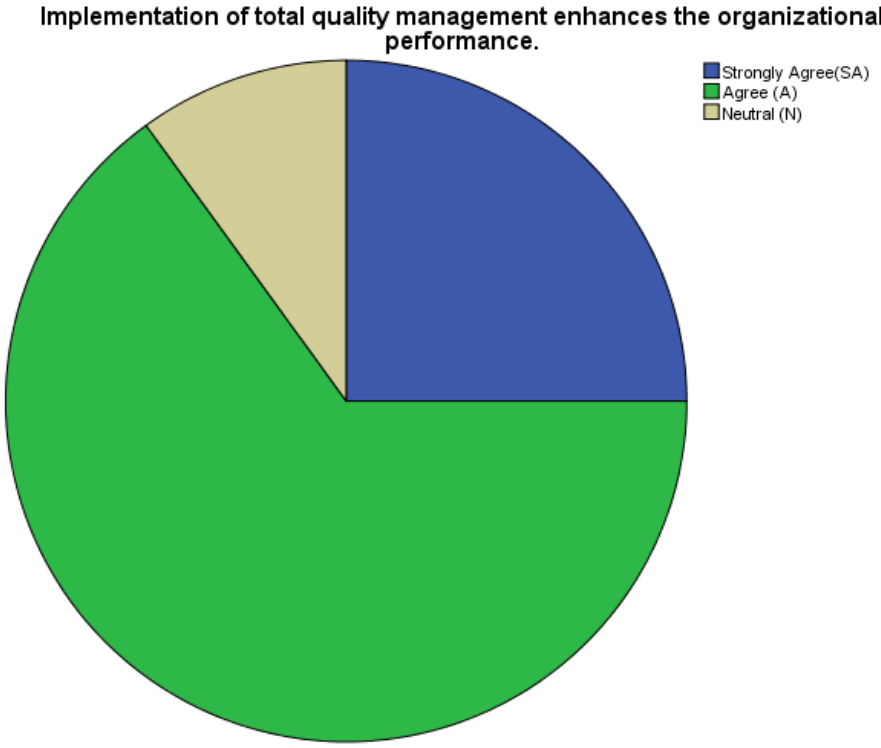


Figure 4-31 Implementation of total quality management enhances the organizational performance

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree(SA)	5	25.0	25.0	25.0
	Agree (A)	13	65.0	65.0	90.0
	Neutral (N)	2	10.0	10.0	100.0
	Total	20	100.0	100.0	

Table 4-31 Implementation of total quality management enhances the organizational performance

The result shows that Implementation of total quality management enhances the organizational performance is composed of various components. These result components are in procedural of strongly agree having a percentage of 25%, agree having a percentage of 65% and neutral having percentage of 10% participated for conduction of the study.

Due to quality circle processes are aligned in a better manner

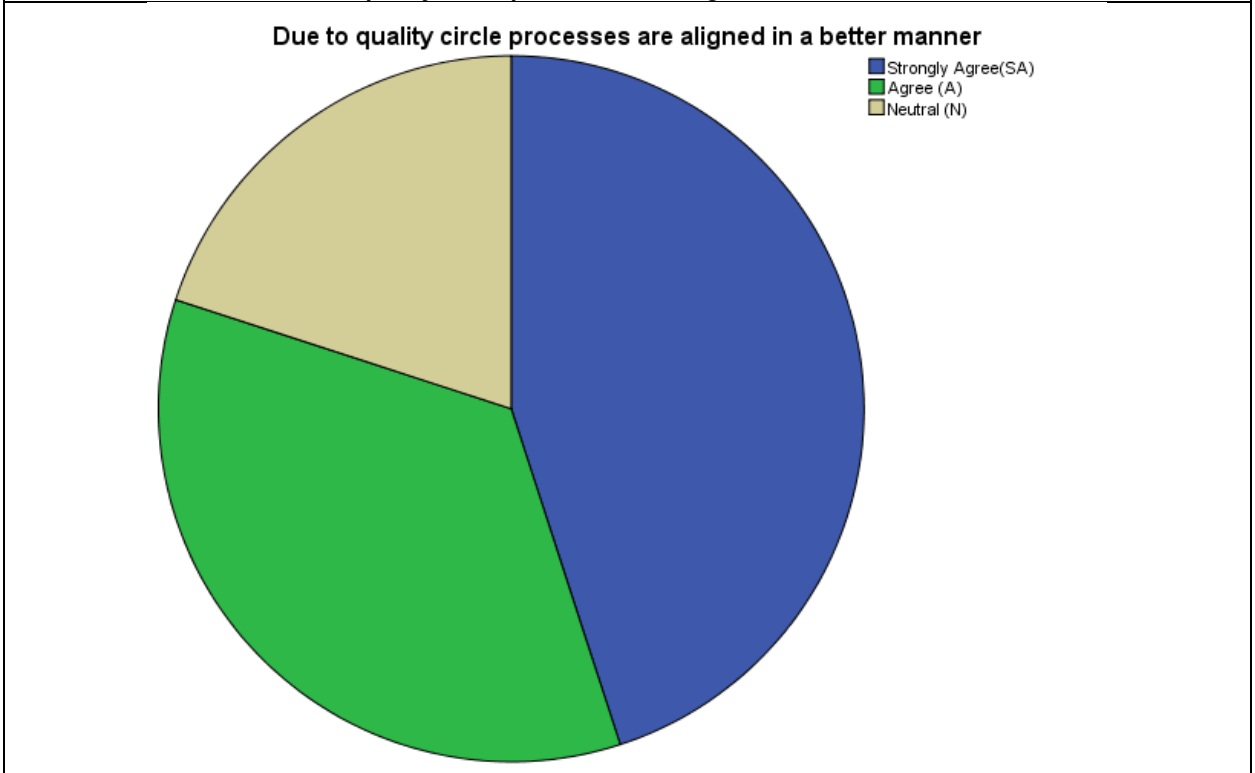


Figure 4-32 Due to quality circle processes are aligned in a better manner

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree(SA)	9	45.0	45.0	45.0
	Agree (A)	7	35.0	35.0	80.0
	Neutral (N)	4	20.0	20.0	100.0
	Total	20	100.0	100.0	

Table 4-32 Due to quality circle processes are aligned in a better manner

The result shows that Due to quality circle processes are aligned in a better manner is composed of various components. These result components are in procedural of strongly agree having a percentage of 45%, agree having a percentage of 35% and neutral having a percentage of 20% participated for conduction of the study.

There is increased accuracy of the information which is processed and circulated through the productions due to the implementation

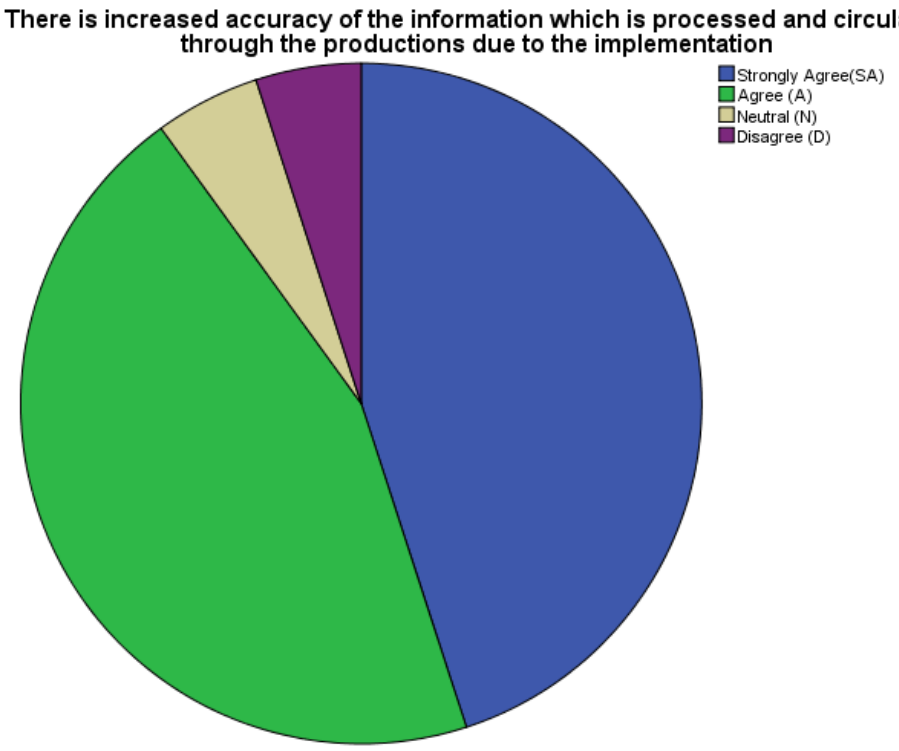


Figure 4-33 There is increased accuracy of the information which is processed and circulated through the productions due to the implementation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree(SA)	9	45.0	45.0	45.0
	Agree (A)	9	45.0	45.0	90.0
	Neutral (N)	1	5.0	5.0	95.0
	Disagree (D)	1	5.0	5.0	100.0
	Total	20	100.0	100.0	

Table 4-33 There is increased accuracy of the information which is processed and circulated through the productions due to the implementation

The result shows that there is increased accuracy of the information which is processed and circulated through the productions due to the implementation is composed of various components. These result components are in procedural of strongly agree having a percentage of 45%, agree

having a percentage of 45% and natural having a percentage of 5% and disagree having percentage of 5% participated for conduction of the study.

1.5 Approach Analysis

Finding out the best fit approach is always considered as the complex and time-consuming process. During the analysis it is observed that there are different types of techniques that have been suggested to respond to the problem. There are different sorts of parameters that are associated within the context of this researches and in the aspect of this approach and its measurement we considered the sending's, labor hours and KPI (key performance indicator). Based on our analysis and understanding this considered as one of the most complex task to find out that which of the methodology or approach fit best in responding to the problem. In this section of the effect of TQM on bulky goods, the comparison and the response time of the approaches that we utilized in the company have been presented.

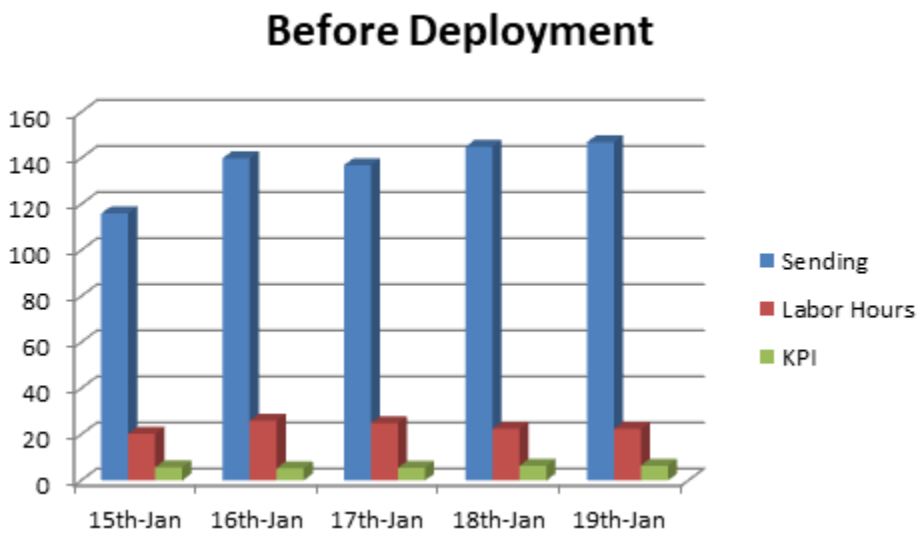


Figure 4-34 Before Deployment

In the figure above, you can witness that the labor hours are ranging from 20-30 hours, whereas the waybills are ranging from 115 to 115 at an average, whereas the KPI as an outcome results around 5.5 to 6.5. In the context of the proposed scenario we considered five days of the proposed

solution and the current deployed solution. During the analysis it is observed that three of the parameters has been considered and based on the real-time results it is observed that overall the improvement has been set in the context of the system. During the analysis it is indicated that the key parameters that are overall improved in the context of this research work are sending, labor hours and KPI (key performance indicator.

Jan-18	Sending's/waybills	Labor Hours	KPI
15th-Jan	116	20.25	5.7
16th-Jan	140	26	5.3
17th-Jan	137	25	5.5
18th-Jan	145	22.5	6.4
19th-Jan	147	22.45	6.5

Figure 4-35 After Deployment

As you can witness the figure above, which is after the implementation of TQM, it can be easily identified that the labour hours have been brought down to as low as 8 hours, with a maximum of 9 hours, the number of waybills averaging between 145 and 155, and comes with a resultant of KPI averaging between 15-19.5. its not hard to notice that the KPI has been shooting high due to less number of labour hours that are deployed for the production. This is a very noticeable and

positive change, as the goal KPI set by the management for bulky goods is 12, and it is over achieving after the implementation of TQM.

Jan-18	Sending's/waybills	Labor Hours	KPI
22th-Jan	146	8.5	17.1
23th-Jan	152	10	15.2
24th-Jan	138	9.5	14.5
25th-Jan	158	9.5	16.6
26th-Jan	155	8	19.375

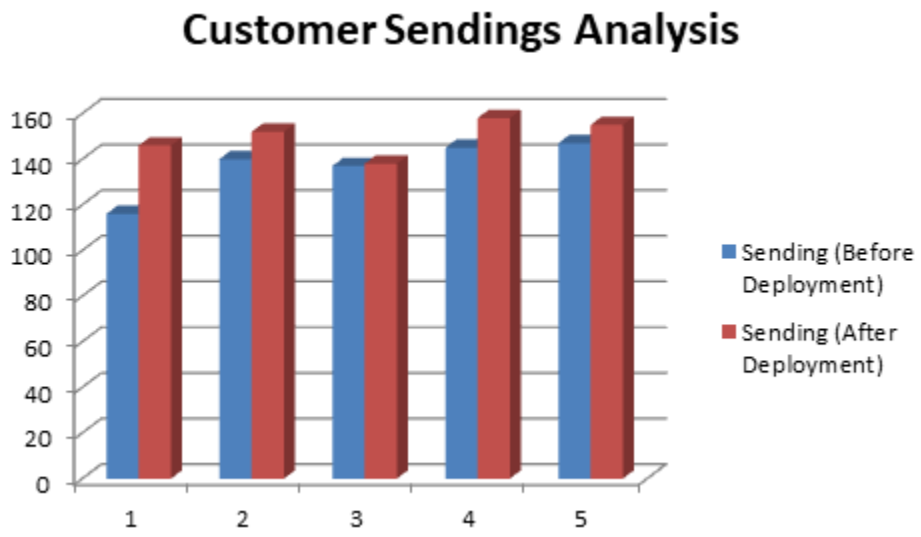


Figure 4-36 Customer Sendings Analysis

It is indicated that the analysis has been carried out in the context of the proposed solution and through the help of the analysis the comparison between the Customer Sendings Analysis before and after the deployment of the system or methodology. This graphical presentation shows the number of customer sendings before and after the deployment. The number of sendings has slightly increased as you can see, but as predicted by the management they were supposed to reach up to 250-350, however that was a tentative count. But, certainly a positive change is easily identifiable.

Sendings (Before Deployment)	Sendings (After Deployment)
116	146
140	152

137	138
145	158
147	155

Table 4-34 Sending

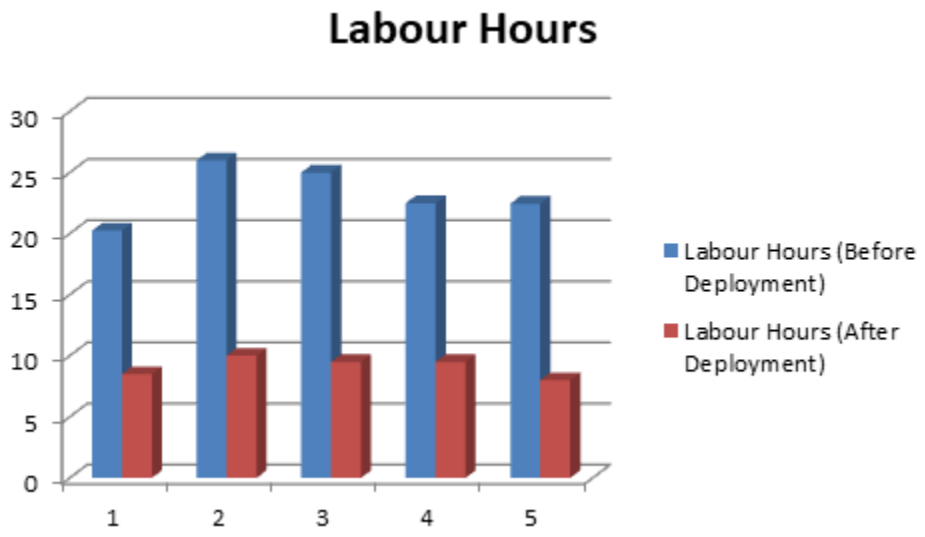


Figure 4-37 Labour Hours

It is indicated that the analysis has been carried out in the context of the proposed solution and through the help of the analysis the comparison between the labor hours before and after the deployment of the system.

After having a view at the figure above, it can be witnessed that the labor hours have dropped considerably, which is one of the main reasons for the increase in KPI. Earlier there were three people working full time, I.e. an eight-hour shift daily. But slight changes were brought to the production lately according to need. The number of people deployed at bulky goods was decreased to two, as another person wasn't needed any longer as the processes were aligned in a manner. Meanwhile, the second person wasn't required anymore due to further changes in the processes and only the coordinator of bulky goods, who has been working there for more than two years was permanently deployed there and catered for everything himself. And the outcome is quite visible, the KPI is way higher than the desired goal.

Currently there is only one person working at bulky goods, as per the earlier SOP, bulky goods can be allotted with personnel from parcel i.e. south side. So, the manager is making a good utilization of resources, and having one person helping the coordinator making things go smoother and more convenient for the production.

Labor Hours (Before Deployment)	Labor Hours (After Deployment)
20.25	8.5
26	10
25	9.5
22.5	9.5
22.45	8

Table 4-35 Labor Hours

It is indicated that the analysis has been carried out in the context of the proposed solution and through the help of the analysis the comparison between the KPI before and after the deployment of the system.

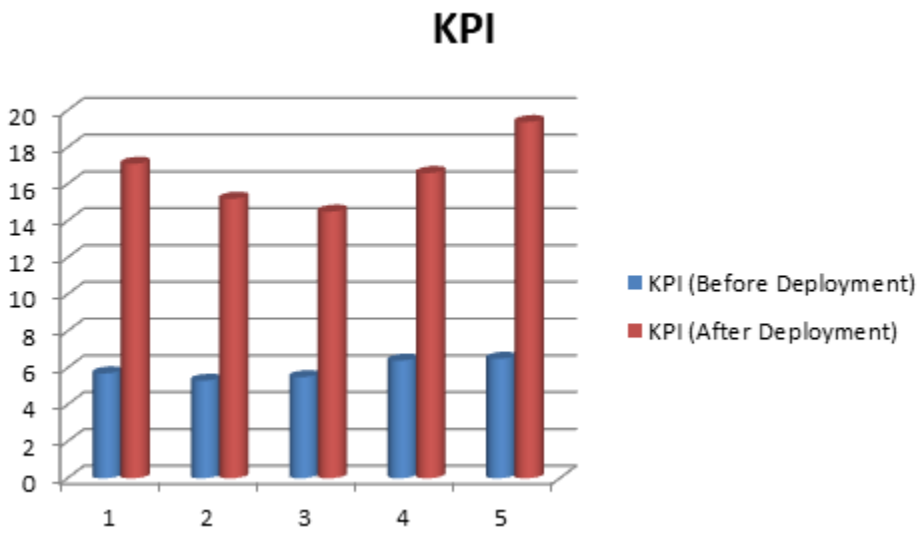
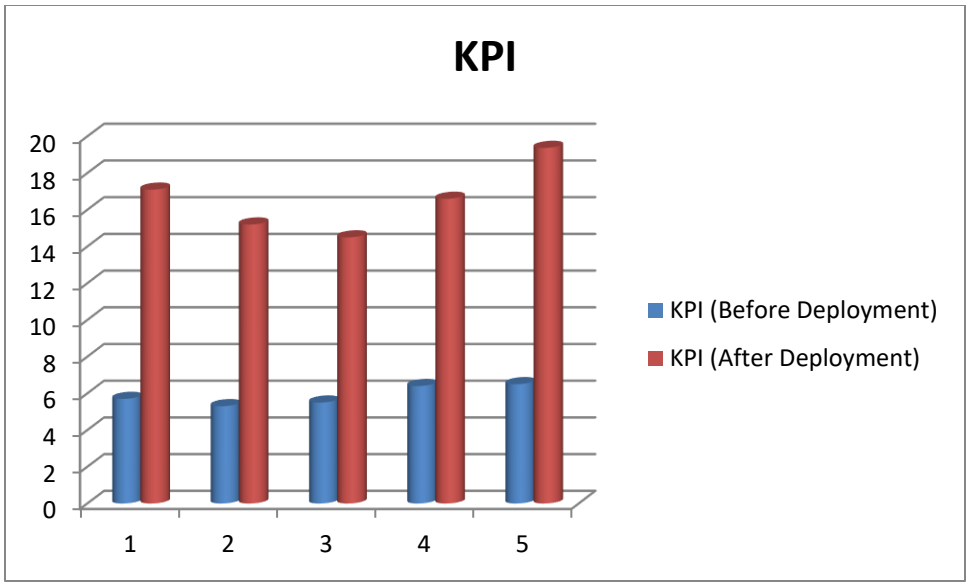


Figure 4-38 KPI



By having a look at the figure above it is pretty evident that a noticeable change has been brought to the KPI, from the highest of 6.5 before deployment to be the highest as 19.4 after deployment. The goal is seen to overachieve every day.

KPI (Before Deployment)	KPI (After Deployment)
5.7	17.1
5.3	15.2
5.5	14.5
6.4	16.6
6.5	19.375

Table 4-36 KPI

1.6 Correlation Analysis

In statistics the result of correlation analysis is used for testing of suggested hypotheses derived through theoretical framework model of the research. The result of correlation analysis is assumed below:

Correlations					
		Total Quality Management	Supply Chain Management	Operational Processes	Organizational Performance
Total Quality Management	Pearson Correlation	1	.234	.190	.398*

	Sig. (2-tailed)		.321	.422	.000
	N	20	20	20	20
Supply Chain Management	Pearson Correlation	.234	1	.537*	.323**
	Sig. (2-tailed)	.321		.015	.000
	N	20	20	20	20
Operational Processes	Pearson Correlation	.190	.537*	1	.215*
	Sig. (2-tailed)	.422	.015		.363
	N	20	20	20	20
Organizational Performance	Pearson Correlation	.398*	.323**	.215*	1
	Sig. (2-tailed)	.000	.000	.000	
	N	20	20	20	20
*. Correlation is significant at the 0.05 level (2-tailed).					

Table 4-37 Correlations

The key operative function activity of correlation analysis is used for testing of suggested hypotheses derived by research model. First research hypothesis is about total quality management which is positively associated with organizational performance. Correlation value of total quality management and organizational performance is .398*, which shows a positive relationship, level of significance is .000 and sample size n is 20.

Second research hypothesis is about supply chain management is positively associated with organizational performance. Correlation value of supply chain management and organizational performance is .323**, shows positive relationship, level of significance is .000 and sample size n is 20.

Third research hypothesis is about operational process is positively associated with organizational performance. Correlation value of operational process and organizational performance is .215*, shows a positive relationship, level of significance is .000 and sample size n is 20. Hence, these all hypotheses are approved and support research framework model of the study.

1.7 Regression Analysis

Regression analysis is recognized as the duration of statistical. Regression analysis plays a vital role for the regulation and examining the impact of all the independent variables on dependent variable. The result of regression analysis model is as follows:

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.375[a]	.141	-.021	.82596
a. Predictors: (Constant), Operational Processes, Total Quality Management, Supply Chain Management				
b. Dependent Variable: Organizational Performance				

Table 4-38 Model Summary

The key predictors of model summary are in procedural of operational processes, total quality management and supply chain management that leads towards organizational performance. In accordance to the results, it has been critically considered that regression is denoted by R i-e 37.5%, the value of R square is 14.1%, Adjusted R square is 2.1% and the standard error of estimation is .82596. Hence these values are considered as good for further proceeding of the study. The result of ANOVA analysis is assumed below:

ANOVA[b]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.785	3	.595	8.72	.000[a]
	Residual	10.915	16	.682		
	Total	12.700	19			
a. Predictors: (Constant), Operational Processes, Total Quality Management, Supply Chain Management						
b. Dependent Variable: Organizational Performance						

Table 4-39 Model Summary

The operative function activities of ANOVA analysis are to examine the variance in research model by using frequency analysis. In accordance to the results, it has been analyzed that frequency is denoted by F I-e 8.72% shows variance in the model, and the level of significance is .000. Further details of this table are associated with the values of regression and residual evaluated in terms of sum of squares and df i-e (1.785,10.915 and 3, 16), and the value of mean square is (.595 and

.682). Hence these values are considered as good for further proceeding of the study. The result of coefficient analysis is assumed below:

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients Beta	T	Sig.
		B	Std. Error		2.830	.012
1	(Constant)	2.380	.841		.792	.000
	Total Quality Management	.197	.249	.189	1.176	.000
	Supply Chain Management	.228	.194	.327	.273	.000
	Operational Processes	.056	.206	.075	2.830	.000

Table 4-40 Coefficients

The result of coefficient analysis is derived by using multiple regression analysis model. The key operative function activity of coefficient analysis is to examine the best predictors from research model. This coefficient analysis is composed of two key aspects. These key aspects are in procedural of unstandardized coefficient and standardized coefficient. For finding best predictor from research model, we use standardized coefficient associated with beta value. The result shows that first best predictor is supply chain management, having a beta value of .327, second predictor is total quality management, having a beta value of .189, level of significant is .000 and third predicator is operational process having beta value is .075, level of significance is .000. Hence these values are considered as good for further proceeding of the study. The result of residual statistics is assumed below:

Residuals Statistics					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.1569	3.3617	2.7000	.30647	20
Std. Predicted Value	-1.772	2.159	.000	1.000	20
Standard Error of Predicted Value	.200	.547	.355	.106	20
Adjusted Predicted Value	2.0947	3.7659	2.7611	.41424	20
Residual	-1.39747	1.51532	.00000	.75796	20
Std. Residual	-1.692	1.835	.000	.918	20
Stud. Residual	-2.154	2.057	-.031	1.048	20
Deleted Residual	-2.26595	1.90535	-.06108	1.00067	20
Stud. Deleted Residual	-2.476	2.323	-.036	1.124	20
Mahal. Distance	.166	7.392	2.850	2.197	20
Cook's Distance	.000	.721	.089	.168	20
Cantered Leverage Value	.009	.389	.150	.116	20
a. Dependent Variable: Organizational Performance					

Table 4-41 Residuals Statistics

The results of residual statistics are composed of various components. These residual statistical components are in procedural of minimum and maximum, mean and standard deviation. In accordance to the results it has been critically considered and analyzed that predicted value i-e (2.1 to 3.3), mean square is 2.700 and standard deviation is .30647, whereas standard predicted value is in procedural of (1.772 to 2.15), mean is .000 and std deviation is 1.00. Hence all the important residual statistics tests are measured as good for further proceeding of the study. In the following experiment the analysis in aspect of the organizational performance has been carried out.

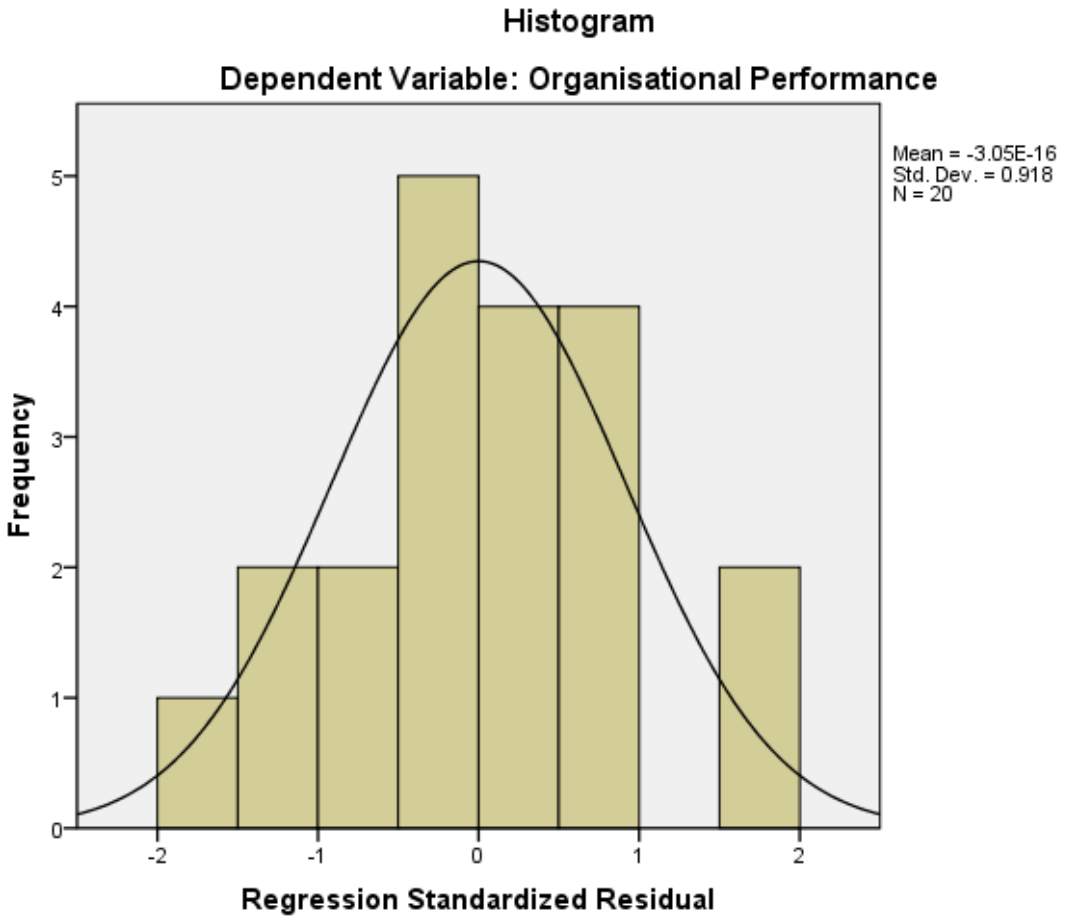


Figure 4-39 Analysis Performance

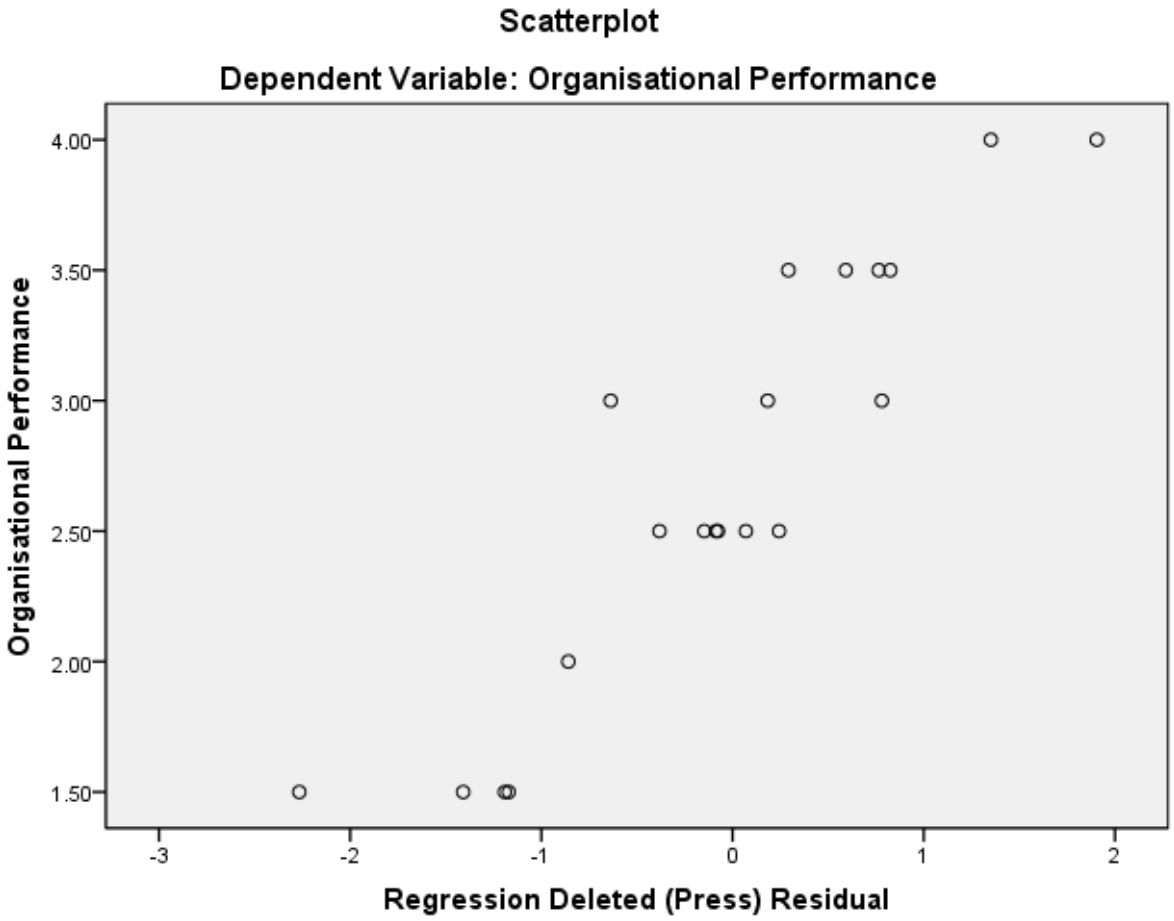


Figure 4-40 Scatter Plot

CHAPTER 5: QUALITY CIRCLE IMPLEMENTATION

Over the years organizations are becoming really active and vigilant in trying to engage grass roots employees in the process of the continuous improvement. It is considered that involving of the grass root employees in the process increases effectiveness, efficiency and productivity while enhances the activities, with the development of teams and creation of the environment that needs to be developed through which they can incredibly participate while improving and enhancing their product and service performance.

The main philosophy behind the quality circle is that it builds the people. Circle members and leaders are well trained in the simple resolving of the problem techniques and tools that identifies the development and causes of the solutions (Rerup Schlichter & Kraemmergaard, 2010). At appropriate time, the presentation is made by quality circles to management who decides of whether in accepting, modifying and declining proposals.

It has been considered that the significance of the quality circle in improving the employee participation tools and methods cannot be neglected at any instance, that it implies development of the capabilities, creativity and confidence of people through the cumulative educational, training, participation and work experience process (Dasgupta, 2014).

In accordance to the considerations, it has been marked that the case study organization is facing lot of complex problems in terms of the appropriate delivery of quality in the products and services. To resolve the issue of quality delivery and development in the products and services, it has been analyzed that the adoption and integration of the quality circle is considered to be one of the good options. This is mainly because, as mentioned in (Salimi, Hadjali, & Sorooshian, 2012) quality circle completely revolves around the involvement of people, which is really important. It is considered that when the people in organization are engaged, the focus on the innovation, creativity and maintaining as well as enhancing of the quality of the product and services.

Furthermore, it has been highlighted that the quality circle also considers and highlights the continuous improvement, which has become the major need of the organization and its significance in the real time scenario cannot be avoided at any instance. As mentioned in (Paul, Smith, & Blumberg, 2012) continuous improvement assists the organization to meet their profitability goals and maintain their superior performance and reputation in the environment.

Involvement of the organizational people the stakeholders have always remained center of the attention by the numerous successful organizations, as they believe that involvement and engagement of the people assists in making the right decisions and opting for the right opportunity within the right time span (Grove, Meredith, Macintyre, Angelis, & Neailey, 2010). It has been really necessary for the organization to adopt such total quality management technique and tool that not only focuses on the quality improvement but also to enhance the involvement of the people.

Similarly, on the other hand, it has been realized and identified that the case study organization is also facing the issue of the production. It is considered that the production wastages and efficiency of the process is very minimum, due to which overall productivity of the company is highly impacted and affected as considered in (Bosa, 2010).

5.1 Advantages of Quality Circle Implementation to Organization

It has been considered that numerous research works (Ngambi & Nkemkiafu, 2015) (Lieder & Rashid, 2016) have been conducted in context of the highlighting and identifying the benefits of implementing the quality circle to the organization. Quality Circles carries immense importance, not only in enhancing the quality of the products and services delivered to the consumers, but also focuses on continuous improvement as mentioned in (Mohiuddin, Rahman, & Jabar, 2015).

Research (Sahel, DeBrouwere, Dujardin, Kegels, Belkaab, & Alaoui Belghiti, 2015) identified that through the implementation of the quality circle in the organization, the probability of improving relationship amongst the employee's increases. The internal relationship within the organization

carries immense importance and in context of an organization, most of the issues are resolved, as when the relationship is strengthened, then communication barriers are bridged and accordingly, productive outcomes are generated. It has been indicated in (Ragunath, Velmourougan, Davachelvan, Kayalvizhi, & Ravimohan, 2010) that internal personal relationship assists the organization to gain competitive advantage against the competitors.

Secondly, it has been analyzed that one of the main benefit of the implementing quality circle is that it increases the self-confidence amongst the employees that assists in the resolving of the complex problems and issues in context to the production as mentioned in (Bosa, 2010). In accordance to the analysis and considerations, it has been reflected that the most of the complex problems occur within organization and might negatively impact on the overall working environment. Furthermore, if the right solution is not opted for the resolving of the problem, then it might directly as well as indirectly weaken the firm, and make it difficult and challenging to accomplish goals and objectives.

One of the key advantages to the implementation of the Quality Circle is that it enhances and increases the good team work as considered in (Rerup Schlichter & Kraemmergaard, 2010). It has been reflected that the good teamwork overall improves the credibility of the organization, and as the traditional working environment dynamically transforms into the digitalized and complex working environment, individual work is increasingly replaced by the team work. Thus, it is really important that such quality circle is implemented that overall improves the teamwork.

Fourthly, it is indicated that the main advantage of the Quality Circle Implementation to the organization is that it minimizes the material wastage as the result the organization gains the heavy monetary benefits. In accordance to the considerations, it has been reflected that most of the financial losses occur mainly because of the increase wastage and due to which lot of the inventory either scratches or is misused as considered in (Grove, Meredith, Macintyre, Angelis, & Neailey, 2010). Moreover, it is considered that the quality circles are focused on controlling the inventory, development and design of the codification and vendors.

Productivity enhancement, service improvement, reduction of wastages and quality enhancement as mentioned in (Mohiuddin, Rahman, & Jabar, 2015) reflects incredible importance. It is considered that quality circle really improves in the attending of breakdown as well as considering of the preventative maintenance, reduces the downtime for the searching of techniques and updating of drawing.

5.2 Results, Improvements and identified problems:

Significance of the integrating and adopting quality circle technique technically needs high consideration. Numerous research studies (Alfalla-Luque, Marin-Garcia, & Medina-Lopez, 2015) (Bal & Dorenbosch, 2015) (Fang, Gao, Sun, Xu, & Li, 2015) has been conducted within the perspective of reflecting whether the implying of the quality circles would be impacting on overall growth and improvement in the existing organization's or not. The specific had been laid on the increasing or enhancing of the product's quality or service. In accordance to (Ahmad Shamsuddin, Chew, & Shin, 2015) it has been reflected that if a really good and appropriated training and development had been provided to the employees that the outcomes of the integrating quality circle technique would be really different from the aspect or situation where the employees are not provided good level of training.

It has been summarized that the role of training and adequacy of the training in terms of the integration of quality circle technique in improving the overall quality of the product needs immense importance. It has been reflected that the organization's would gain productive outcome who have well trained their employees about the quality circle and have increasingly focus on training and developing the employees of how the productive outcomes through the implementation of the quality circle technique can be gained.

- **How does Quality circle improve the production?**

  By enabling the quality circle various positive changes have appeared in the production, there is a better circulation of information amongst the productions. Daily meetings are held at 17:45

where the appearance of all the crew members is mandatory. The meeting is held by the production manager, where he lays out the agenda for the day, and gives every inch of details and deviations about the production to the crew members so that everyone is on the same page and well informed to avoid any sort of errors. The communication pattern is kept precise and concise,

- **transparency of information**:

this causes the Chinese whisper to diminish. For example, if the Malmo goods are to be taken to the south side directly is announced, the prior crew member would know before hand and there would be no loss of time as they would be taking it to the usual place first, and then taking it to the south side, which leads to time saving as commuting from express to south side could consume up to 2 mins approximately. If the driving time is reduced, it directs towards the efficient usage of resources, hence more tasks are allotted to the south side of the terminal, where immense coordination leads to saving time, and making the processes more convenient. If there are a lot of Stockholm pallets at the designated drop off point, the trailer could be parked to the loading points at the north hall, the driver itself loads the trailers or either staff from south hall do it to clear the space and carry out dispatch orders for the prior destinations.

- **Eradication of bottlenecks:**

The working shift for the production used to be 19:45, and until that time the goods would have been unloaded and kept for processing and so on, but that used to cause a situation of bottleneck, as the goods must be scanned first, the papers had to be checked, stamped, copies had to be made, and then driven away to their prior destinations. But until all that was done, another trailer would appear, and there wouldn't be much space, which would cause more delays due to lack of space.

There's a slight change in how things work now, to make everything more convenient. Now the coordinator appears at 19:00, and proceeds with scanning and handling of papers goods, so that there is ample space to accommodate more for the expected incoming goods. One person does the handling of goods, whereas the other person drives them to their designated destination point. Most of the times, a quite sufficient part of the trailer is taken by the goods for parcel side i.e. south hall. Earlier they were driven out by the bulky goods department, where as now swift communication is enabled through the usage of walkie talkies. The notion of "being useful to other productions" is quite efficient as exterior help always speeds up the processes.

Uncertainty avoidance measures:

Due to the shrinking of labor hours there is a quite noticeable change in the KPI. To deal with deviances, back up personnel were trained to cope up with the situation when a crew member gets sick or doesn't appear at work due to any reasons. They were deployed for one month where they learned about all the processes to carry out the production in the most convenient conceivable way. They're hired through bemanning companies and are respondent to unusual/unscheduled work. Due to this, the production is more flexible and adaptive to change in nature. The manager keeps a good track of how to delegate tasks, to make the processes as smooth as possible. When a huge volume of a customer named BSH arrives, extra personnel used to be scheduled for that prior working day earlier, but now help is seeked from other productions i.e. white away, as they tend to specialize with the handling of white ware products om a daily basis, so they tend to pace up the production process while bulky goods personnel align the rest of the processes to ensure a good flow being agile enough.

Bigger think tank:

When the daily meetings are carried out, each and every member of various productions from the north hall i.e. express, appear and indulge in discussions to deal with the daily flow in the best

possible manner, and how to cope up with the daily schedules depending upon the ETA of the incoming trailers. One of the crew members came up with a very good idea which was implemented right away, the destinations which have been dispatched from the north side should be driven to the south side as there are trailers to be loaded till a later departure trailer. A note was pasted on half pallets and put right in front of the destination drop off points, which states that the pallets should be driven to the south side straight away. This lead to a decrease in the truck driving time allotted to the productions, which implied to all the prevailing productions, and the south side crew was informed about the dispatches and a great collaboration was initiated through the help of the coordinators of each side. This allowed to encourage the ideas of each and every crew member, turning to boost the sense of belongingness with the work place, a perfect example of good managerial leadership. Every day challenges and opportunities were accessed and highlighted the next day of the production, this was a good initiative as the crew members were on their toes and receptive to every sort of situation, having a clear sense of the processes. It was lately announced at one of the meetings that the coordinators would be swapped amongst productions so that they have the ability to ensure being useful at other productions as good as the one they are currently operating at. This allows the adaptability factor to kick in.

Ability to track and sustain performance level:

The KPI of earlier day was being brought in the context at every meeting, and it was assessed and contrasted with the correspondent results. The challenges and the opportunities started to be pondered upon, which tends to allow a great learning for the crew members, tasks which shouldn't be repeated are sought and made clear how to respond to certain situations. The KPI was highly transformed after the implementation of the quality circle, as the hours were minimized to a level which in turn resulted in reaching beyond the target, the goal being 12. Whereas bulky goods was at the highest KPI of 19.6 as recorded, and averaging 16 if taken on a weekly track of it. The deployment of one personnel from south side was the perfect example of efficient usage of resources, as the regular crew members were downsized and there was only one coordinator

working there, who had the most experience, and could delegate tasks in the best possible manner to get a get extract out of the production. It was tested and proved to give highly fruitful outcome.

Similarly, research (Gharakhani, Rahmati, Farrokhi, & Farahmandian, 2013) emphasized and indicated that the organization needs to be really well aware of what is the main purpose of implementing the quality circle technique. It has been indicated and reflected that the main purpose of the primary purpose of implementing the Quality Circles had been to enhance the quality and minimize the number of the working hours and focus on business process improvement, . It has been analyzed that increase productive as well as good perception of the company and management has been rated jointly to be one of the second important purposes of the Quality Circles. It has been indicated that the productive results can be only obtained if the employees and the organization is well aware of its primary purpose. The research (Gulati & Sytch, 2008) has indicated that numerous issues had occurred when the organization or corporates were not aware of the major purpose, most of the failures in the implementation occurred when focus had been laid on controlling the quality, rather than improving it.

Moreover, (Guo, Zhao, Zhang, Yan, & Sun, 2015) focused on highlighting and indicating that the employee's communication and collaboration in increasing the probability of the organizational outcomes within the context of the integrating and adopting the quality circle technique in their existing scenario had been really important. It has been analysed that if an organization has increasingly good level of the communication and collaboration between the employees that lot of productive outcomes can be extracted.

Appropriate adoption of the quality circle technique with the suitable consideration of the specified strategies and policies has an immense importance as mentioned in (Grove, Meredith, Macintyre, Angelis, & Neailey, 2010). It has been considered that the organization needs to significantly change the strategy when implying the quality circles technique in the organization. For instance,

it has been considered as putting forward (Jasti & Kodali, 2015) that the increasingly productive outcomes can be gained if the organization focuses on the putting of the similar strategies might not productively work.

The identified problems are listed as follows:

- The late arrival of trucks lead to planning issues as well as underutilization of resources. The trucks don't appear on time as they are dispatched late from the DIPS due some odd reasons or delays probably, or either they get stuck in traffic due to road accidents. As the trucks arrive late, the crew members are utilized and made helpful at other productions e.g. south side and driving pallets or helping in wrapping or scanning of goods at white away production. This surely helps in organizational performance, but the hours are allotted for bulky goods, so it brings down the KPI. If the trucks arrive after 01,30am they are not produced at all, and left for the next day. There have been instances when the truck arrived as late as 03,30am, when it was only unloaded.
- Goods appearing without papers create a lot of problem. Since they are deprived of all the necessary information, they cannot be produced. One alternative to it is to go in the system, and find the papers manually, get them printed and attach them, this is quite a time taking process which may lead to bottlenecks. Why do they appear without the papers? It usually human error, which can be pointed towards the workers from the DIP, or the drivers who forget to bring them along. Bulky goods is a production which works on just in time production, if the papers are not fixed they have to be produced the next day, or placed in UFO area, where the morning shift works on the tracking and dispatching of the goods. Earlier, about 30-40 goods used to appear without waybills, which would lead to allotting time for arranging the

documents in order to produce them or dispatch them the next day, but now after the implementation of TQM, its getting better every day as compared to earlier.

- There are various problems related with BSH, a customer which indulges in the provision of whiteware products. It arrives late normally, with missing papers. Without the prior information it can't be produced. Or either the labels are not pasted at the right place, they must be handled differently which take a lot of time while scanning and carrying out other processes. If that's fixed, a lot of time can be saved.
- There is a lot of paperwork involved in the processes, its 2018 and yet again, all the processes are carried out manually which is highly time taking and carries the room for human error. the goods vary in size, at times they appear to be long logs for fences, at times engines etc., so they must be measured in every dimension, as the customers are charged according to the space they occupy in the trailer, it's quite time taking and could be quite effective if there was an automated system for all this.
- at times, drivers putting pallets at wrong destination points create problem as well, as the bulky goods crew members must put them at the right destination then, which can be time consuming. The same amount of time could be allotted for other tasks.

5.3 Risk Factor

Risks are the major part of the implementation as mentioned in (Lieder & Rashid, 2016). There might be numerous risks that an organization faces during the implementation and execution of the quality circles. However, one of the most important aspects is to look beyond these risks and focus on how the occurrence of the risks and the consequences of the risks can be minimized and decreased. It is indicated that number of the risks can be faced during execution of the risks and there are also several factors that might lead to the increasing the probability of the occurrence of

the risks. In this section of the report, we have focused on discussing the several risk factors that can be posed by the integration and implementation of the quality circles.

It has been considered and identified that one of the major risk factor that might increase the probability of the failure of the quality circle technique is the weak strategic planning, as identified as (Kannan & Tan, 2005). It has been mentioned by (Aquilani, Silvestri, Ruggieri, & Gatti, 2017) that the strategic planning bears incredible importance. Basically, the strategic planning is highly imperative, and it assists in the providing of the appropriated framework for the proactive decision making in evaluating the performance that continuously and also assists in the assessment of what might go wrong, raising the probability of the risk occurrence. In context to strategies and the concerns of the evaluations, the environmental targets and goals need to align with the corporate goals and needs to be systematic deployment. It is considered that the strategies need to be developed and designed in the positive aspect.

Similarly, it is considered that the one of the major risk factor that might occur in the continuously in the existing process is the weak research and development. It has been really important to consider that if the organization does not consider the strong research and development, than there are the great number of the chances the productive outcomes cannot be generated. It needs to be considered that most of the risk of the failure mainly occurs in context to the implementation of the quality circles when the proper and appropriated research is not conducted. Accordingly, the issues of the failure occur.

Managerial Risk can occur in the organization as mentioned in (Lei, Wang, Zhu, Guo, & Wang, 2015). It has been indicated and highlighted that if the proper and effective management is not considered than there is the high probability that the risk of failure might occur. For instance, it includes that the management is not really strong, focused and committed in the integration and implementation of the quality circle. Furthermore, if an organization lacks the integration of appropriate skills that are needed for the implementation of the quality circles, than more risks would occur. In accordance to the (Prajogo & Sohal, 2003) it has been indicated that the weak

implementation skills that are needed for the deployment of the quality circle, if they are not present, then they might overall contribute to significance and major risk factors.

5.4 Risk Analysis

Risk analysis carries incredible important (Cooper & Ellram, 1993). In context to the consideration, it has been indicated and reflected that the proper analysis of risk can play a very important role in increasing the probability of making the success factors in implementing the quality circle. Analyzing the risk and accordingly developing and implementing the strategies that can decrease the probability of the risk occurrence should be highly considered. Uncertainty avoidance measures are pondered upon. During the implementation of the risks, it has been considered that there are variety of the risks that might be posed, whether on the quality of the product or within the process. However, it has been considered and analyzed that if all of these risks are accordingly analyzed and accordingly focused that lot of effective outcomes can be generated. Conforming to the situation,

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Simply, in the existence of dynamically complex and competitive environment, the integration of the advancements in information and communication technologies have made it really easy for the organizations to minimize the probability or even consequences of the risk occurrence. Main risks assessments need to be highly considered and the focus needs to be laid on the overall developing and integrating good technological based system that align the risk and accordingly minimize them.

5.5 Key Drivers of Quality Matrix

Today, most of the experts firstly develop the design, theoretical framework model; proper channels explain the origin and ending points of goods and services which, they delivered to their consumers. According to Markman & Krause, (2014) Supply chain should be to maximize to overall value generated is the difference between the final products is worth to the consumers and

cost effective incurs in the filling of customers request (Markman & Krause, 2014). It is observed that various key drivers of quality matrix such as facilities, effectively managing the inventory related to company production, provide best transportation system through the use of latest information technology, effectively managing the information and communication within and outside of the company, set sourcing and pricing of products and service leading towards the success of the company.

The supply chain operation department of the companies take decisions through centralized and decentralized decision-making skills. The process of centralized and decentralized decisions making skills are also very important to run the system of supply chain smoothly and control all the flow of the products, information, and funds are considered as the success of supply chain (Arndt & Holger, 2012). Most of these decisions are based on the supply chain strategy, supply chain planning, supply chain operations, processes of supply chain in term of consumers order, replenishment cycle, manufacturing cycle and procurement cycle that leads towards the accomplished logistic network optimization (Markman & Krause, 2014). Another important aspect is the network design in the supply chain is composed on the facility role, facility location, capacity allocation, use effective transportation network for promoting the market about offering products, brands due to supply allocation that influences the network design decision for betterment of the system.

The innovation behind the concept of conducting this research study is to identify and analyzed the improving supply chain management process with key drivers of quality matrix (Bughin, Chui , & Manyika , 2010). The project is to identify that how the issues of SCM can be addressed and improved in the organization and how the process of SCM can be automated by the help of different computing software's. The attentions in this project have been provided on the root optimization and logistics network. The process of quality matrix are exercised through different computer software's are used for promoting the concept of supply chain in the organization.

These businesses promoting computing software's is considered as new paradigm in the area of computing integration of information technologies. These processes business computing software's have gained much attentions due to the resources sharing, security, communication and coordination and many other features which are not available in the traditional computing environment (Vouk, 2008).

In these days, Cloud providers make sure that application offered over the cloud is more secure and reliable. There are number of different researches which are conducted at the different level to make the cloud more secure (Rimal, Admela, Dimitrios, & Yves, 2011). During the code's life cycle there should be some procedures taken in application security to stop the flaws in the security policy of those systems that are lie under their administration. Physical server are powerful so multiple virtual machine instance run on virtual servers, so providers does not depend on the secure data on virtual machine level, they provide user level security how they can proper handle these, when they use cloud services (Kontaxis, Polychronakis, & Keromytis, 2014). One of the most important aspect of supply chain is based on cloud computing. In simple words, cloud computing is considering as the general term for delivering the hosted services through internet. key drivers of quality matrix works through the use of computing information technologies has number of different feature which always attracts the enterprise customer including on-demand computing, Resources Sharing, No infrastructure deployed On-Premises, storage solution etc. (Okuhara, Tetsuo, & Takuya, 2010). Once of the main feature which is provided by the IT security is the protection of information system or solution from the unauthorized access. The organization policies can be implemented on the solution according through the utilization of the IT security (Buyya, Chee, & Srikumar, 2008).

5.6 Suggestions

The overall view of the implementation was quite clear about the far stretched benefits the quality circle has on bulky goods. Some of the important suggestions that have being provided to the organization, especially the case scenario is presented and indicated as follows:

The focus should be on increasing the communication and collaboration between the two flanks of the warehouse, since their operations coincide when they operate together, and effective information sharing makes the processes go quite swift.

It has been indicated that the significance of effective communication and effective collaboration between the departments cannot be avoided at any instance. In accordance to several researches (Newbert, 2007) (Ahmad Shamsuddin, Chew, & Shin, 2015) it has been indicated and analyzed that if good communication is integrated than lot of the productive outcomes can be generated in terms of the integrating and implying the quality circle technique. In simple terms, if the cross-production communication is increased, then every crew member would be aware of the major aim of the day and all the processes would be held without any possible deviances and implying the quality circle due to which, every employee would be working to the success of the quality circle.

The main suggestion is that the case organization should be really focused on its effective strategic planning. From the significant course of the action to the understanding of the strategic goals and reasoning of the implementation, everything needs to be very clear and intensely focused upon. It has been indicated that if the good focus is not considered than the productive outcomes cannot be extracted. It has been realized the strategic planning before and after the implementation of the quality circles needs increase consideration. Moreover, it has been considered and suggested that for effective outcomes, six to eight months of the good strategic planning are needed.

If there is an addition of a great system support, it could pave ways which lead to higher goals. There is a lot of paperwork that must be carried out, and honestly it is pretty time taking, if these processes are replaced with more digitalization, it could lead to a swifter process, with the eradication of human error as well. The coordinator of bulky goods mentioned in the interview that if the trailers arrive on time, things could be wrapped up earlier than expected, and lesser hours would be vested in the production. If there is enhanced cross communication with the line haul

and the sending parties, precise ETA would be generated and therefore timely execution of tasks would be planned.

The production manager mentioned during the interview that they are looking for ways to decrease the time and effort vested on the scanning and processing of goods, the consent has been taken to the higher management, and they're thinking of some production belt which would assist with lifting as well as scanning the goods by itself. That would lessen human intervention and human error.

There is a varied probability of the integration and implementation of the good risk assessment system. Risk assessment system can play a very important role in the success of the quality circle. It has been considered and in accordance to putting forward the argument by (Jirojwong, Johnson, & Welch, 2014) it is really important that the focus is on the integrating of the good risk assessment system that effectively assesses the risk and accordingly indicates the management of minimizing the risk occurrence consequences.

CHAPTER 6: CONCLUSION

Total quality management is one of the major concerns of organizations who tend to adapt with changing market trends. It has been realized that whether the organizations are big, small or medium, each one of them is increasingly focused on improving and enhancing their performance and does looks forward to TQM. During the research analysis and discussions, there were several total quality management tools and techniques that were brought under consideration and highly discussed to develop further understanding. With the presence of the variety of tools and techniques, the best possible TQM approach was implemented which had a very fruitful terminal outcome, leaving the management with green numbers.

In accordance to the results and outcomes, it has been concluded the impact of the total quality management on the bulky goods cannot be neglected at any instance. It has been considered and evaluated that the processing, handling and delivery of the bulky goods is incredibly difficult to bring adjacent to with what the management requires out of the production. thus, it is important that the effective TQM approach and tools are integrated, so that the quality of the bulky goods can be improved and is continuous in nature. In accordance to the existing problem that the current real time company had being facing was issues was due to jumbled up processes, taking the example of the time when the trailers don't arrive in time and the crew members have to be useful in other productions in order to have organizational performance in the loop at least. The decision of downsizing the personnel from three to one was quite an efficient and effective move, earlier all the three scheduled personnel would be present for eight hours, but later on only the coordinator was working. This was a wise move since the work being done by three people was being done by one person, who has a hefty amount of experience due to the course of time deployed there. His work being to report directly to the production manager, the daily challenges and strong points were discussed, and contingency plans were drafted out. The number of labor hours had been high, which brought down the productivity of the production straight away. earlier the KPI used to be 5-6, but after the implementation, it raised up to an average of 16, the highest being 19.6, this reflects on a fabulous change as the goal set by the management was 12. Over achieving of goals is always a desire for an organization. Here was an underutilization of resources earlier, as the trailer doesn't arrive on time, the labor is made helpful to other productions, it leads towards organizational performance, but we had bulky goods under the spot light. Increased focus was levied on the communication and collaboration with he south side to enable timely dispatch of goods, and to have capacity utilization. This overall results in a spike in the efficiency and productivity of the production. In accordance to the outcomes obtained and findings reflected that lot of the improvement in the case scenario of the company was brought.

The approach of TQM is not foreign to the organizations, as continuous improvement is an intriguing factor . However, during the research process, it was founded that the companies had lot of difficulties in the appropriate selection and integration of the adequate and suitable TQM approach. It was considered that if the approach fails, overall organizational performance doesn't go in favor. Because one of the main disadvantages is the loss of time. However, we are saving the labor hours in our case, which is vice versa. Thus, in the case scenario, the major issue was identified and highlighted, in accordance to that Quality Circle was recommended to the manager and was hence implemented which in turn assisted in deriving positive and productive outcomes.

In the upcoming times, we would be highly obliged to work on TQM again in order to come across with other approaches and situations to have an in-depth insight of the study and the industry closely, in return to assist the organization in their growth, development and to chase the quest of enhancing the performance.

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CHAPTER 7: APPENDIX

Variables Entered/Removed[b]			
Model	Variables Entered	Variables Removed	Method
1	Operational Processes, Total Quality Management, Supply Chain Management	.	Enter
a. All requested variables entered. b. Dependent Variable: Organisational Performance			

7.1 Questionnaire

7.2 Part 1: Personal Information

Gender			
○	Male	○	Female

Age									
○	17-25	○	26-34	○	35-44	○	44 or above	○	

Job Position							
○	Manager	○	Team leader	○	coordinator	○	Crew member

Production							
○	Bulky goods	○	White away	○	City mail	○	Other productions

7.3 Part 2: Instructions

Please read each of the following items carefully and fill in the answer that best corresponds to your agreement or disagreement.

Strongly Agree(SA)	Agree (A)	Neutral (N)	Disagree (D)	Strongly Disagree(SD)

1	2	3	4	5

7.3.1 Section A: Total Quality Management

S/N		SA	A	N	D	SD
1	top management (senior executives and supervisors) view improvement in service quality leading to increase profits	1	2	3	4	5
2	top management has objectives for quality performance	1	2	3	4	5
3	top management evaluates organizational performance through provision of quality services	1	2	3	4	5
4	TQM assists in alignment of company's goals as well as individual goals	1	2	3	4	5
5	There is an uplift in the stature of the organization and the morale of employees through quality measures	1	2	3	4	5
6	In case of deviances in processes, solutions are drafted out in the best feasible way	1	2	3	4	5
7	Uncertainty avoidance measures are taken into consideration	1	2	3	4	5
8	With the provision of precise and concise information, the best result could be extracted	1	2	3	4	5

7.3.2 Section B: Supply Chain Management

S/N		SA	A	N	D	SD
1	The Supply Chain Management is completely based on the integration of quality-based processes	1	2	3	4	5
2	The clients have an effective system to ensure quality of the services	1	2	3	4	5

3	We emphasize on quality and delivery performance rather than price in selecting clients	1	2	3	4	5
4	The clients are involved in our quality training	1	2	3	4	5
5	We work closely with clients to improve each other's processes	1	2	3	4	5
6	the clients are actively involved in our new product development process	1	2	3	4	5
7	Employee involvement and suggestions are highly valued and taken under consideration, as they have a closer look with the hand held operations	1	2	3	4	5

7.3.3 Section C: Operational Processes

S/N		SA	A	N	D	SD
1	Quality and Reliability of our services are high	1	2	3	4	5
2	There is increased transparency in the communication amongst productions	1	2	3	4	5
3	We deliver our services on time to customers	1	2	3	4	5
4	We design processes in our firm to be "mistake-proof" to minimize the changes of errors	1	2	3	4	5
5	We make extensive use of statistical techniques to reduce variation in processes	1	2	3	4	5
6	We give clear, comprehensive, and standardized documentations and instructions about work methods and process instructions to employees	1	2	3	4	5
7	Crew members have the right to contribute to the think tank, in order to achieve continuous improvement	1	2	3	4	5

7.3.4 Section D: Organizational Performance

S/N		SA	A	N	D	SD
1	the firm has an effective performance measurement system to track overall organizational performance	1	2	3	4	5
2	Quality data (error rates, defect rates, scrap, defects, rework rates, cost of quality, etc.) are available	1	2	3	4	5
3	Timely firm performance data is always available	1	2	3	4	5
4	Quality of the products and services enhances the organizational performance, as it leads towards strengthening the relationship with the client	1	2	3	4	5
5	Implementation of total quality management enhances the organizational performance.	1	2	3	4	5
6	Due to quality circle processes are aligned in a better manner	1	2	3	4	5
7	There is increased accuracy of the information which is processed and circulated through the productions due to the implementation	1	2	3	4	5

7.4 Interviews

1. What is your viewpoint of total quality management and its implementation in the organization?
2. Do you think that employee training and development enhances the performance of the organization?
3. The accuracy and timely availability of information deems to be an integral part while carrying out SOP?
4. Do you focus on uncertainty avoidance measures? How?
5. While deviances occur in between certain processes, how do you cope up with that?
6. Do you have a well drafted solution for dealing with returns?
7. Do you think that your organization is able to well endorse the total quality management and what is the role of executives and top management regarding the implementation of TQM?
8. Do your team members and employees consider the significance of the implementation of TQM?
9. To what extent does the organization endorse and integrates TQM in supply chain processes?
10. How many complaints you have obtained from the consumers regarding the quality of product?
11. What initiatives do you think that the organization should implement in context to the total quality management?