

Factors Determining The Quality Management In Supply Chain Management: An Empirical Study Logistics

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ABSTRACT

Supply chain management is an important aspect of the business world. Supply chain management is a systematic approach, which focuses on optimising and improving the flow of materials, information and finances in order to maximise business performance and make it sustainable for the long-term. It focuses on how work is done within an organisation rather than what is done. The quality management in supply chain management could flow from one level to another. Quality management at the individual level is important because it ensures that each individual person performs his or her job well and makes sure that they are able to handle any unexpected problems that arise during their work. This paper aims to investigate the factors determining the quality management in supply chain management. 243 people were surveyed from quality management department of supply chain management to know the Factors that determines the Quality Management in Supply Chain Management. The study concludes that there is significant influence of quality management in supply chain management.

Keyword- Supply Chain Management, Quality management, Supply chain quality

INTRODUCTION

The success of a company depends on the quality of its supply chain management. A company's supply chain is the series of activities that are involved in the production and distribution of goods and services. The management of a supply chain involves many factors such as the quality management of a company's products or services.(Cox, 1999) Quality management is an important factor that influences the success or failure of a supply chain because it impacts customer satisfaction and relationships with suppliers.when we talk about quality in logistics, we can refer to several different aspects: from the condition of products to their delivery time and cost. These criteria are often used by companies when choosing a supplier or subcontractor.

However, this does not mean that these factors are mutually exclusive. In fact, they are interconnected and can affect each other. (Lambert & Cooper, 2000) Therefore, there is a need for a clear definition of what quality means in relation to logistics. The another factor is related to the complexity of logistics processes themselves. The main objective of any company engaged in logistics activities is to ensure maximum efficiency and profitability at all stages of delivery (i.e., from production through transportation until the completion of its destination). At the same time, it should be noted that there are many factors that affect these indicators: they include environmental conditions, climate changes (seasonal), economic conditions (state subsidies), political instability (war), etc. The supply chain management is the process of managing, planning and controlling the flow of materials, information and funds from the point of origin to the point of consumption in order to meet customer requirements.

It basically connects raw materials, suppliers, manufacturers, distributors and finally end users.(Cooper et al., 1997) Quality management is an important part of supply chain management which can be defined as a systematic approach to providing value to customers through product quality (internal) and service quality (external).The process of managing quality in supply chains starts with establishing a common understanding of what quality means to all the partners in the supply chain. Next, it involves designing processes that are capable of consistently delivering products that meet these expectations. (Fernandes et al., 2017) Finally, there must be incentives for each partner to perform its part in this system effectively.

The success of any business depends on the quality and reliability of its products, services, and processes. Quality management ensures that these are consistent with customer expectations. Supply chain management is a complex process that involves many factors. Some of these factors are external and some are internal to the organization. The external factors include customers, suppliers, competitors and government regulations. Internal factors include management policies and procedures, organizational culture and structure as well as

employees' attitude towards quality management. All these factors play a significant role in determining the quality management in supply chain management. Customer's perception of quality is an important factor that influences the success of any business organization. Customers expect high quality products at affordable prices from their suppliers or vendors.

Literature review

Quality management is a critical component of supply chain management. The quality of the products and services delivered by the supply chain determines the success of a business. Therefore, it is necessary to understand factors that determine the quality management in supply chain management. (Cox, 1999) Quality has been considered by many as the most important element that determines the success of an organization. There are various factors that determine quality, including supply chain management (SCM). It is important to ensure that these factors are well managed so as not to affect the performance of businesses. Quality management is an important factor in supply chain management.

Quality management can be significantly affected by the effectiveness of communication and collaboration between all members of the supply chain, including suppliers, manufacturers, transport companies, and retailers. Supply chain management relies heavily on quality management. A supplier's, manufacturer's, transportation company's, and retailer's ability to communicate and collaborate effectively can play a significant role in determining the overall quality of their products. Supply chain management requires a thorough understanding of what factors contribute to high-quality products and services.

(Fernandes et al., 2017) Communication plays an important role in quality management because it allows members of the supply chain to exchange information about production methods, costs and other factors that affect quality. (Sila et al., 2006) Collaboration is also important for improving quality because it allows different parties to work together in developing solutions that meet their individual needs while improving overall efficiency. The use of technology and data analysis to track and monitor the quality of products and services throughout the supply chain is an important part of quality management.

The quality management process begins with the identification of customer needs, requirements and expectations. This can be achieved through a variety of methods, including customer surveys or focus groups. The next step in this process is to identify potential risks associated with delivering the product or service to meet these needs and requirements. These risks may include environmental factors such as weather conditions or human factors such as employee training levels.(Talib et al., 2011) Once these risks have been identified, appropriate mitigating measures can be put in place to ensure that they do not negatively impact delivery performance. The final stage involves implementing controls throughout the supply chain so that any issues that arise can be detected quickly and addressed before they become serious problems for customers or suppliers alike. Technology has enabled companies to track their products as they move from one stage of production to another.

They can use this information to identify any problems that may be occurring along the way, so that they can be corrected before it reaches the end user. Data analysis helps companies determine how well they are meeting customer expectations, which allows them to improve their processes over time. Quality management in supply chain management depends on the implementation of quality assurance measures, such as inspections and testing, at various stages of the supply chain (Lin et al., 2005). These measures help to ensure that products are not damaged during transit or storage, and that they meet required specifications. In addition to implementing these measures, the organization should also ensure that it has sufficient resources to conduct quality testing and evaluation. This can be done by hiring additional staff members or outsourcing some of these services.

Quality assurance measures are used to ensure that products meet certain specifications and standards. In addition, they help to prevent defects from occurring. Quality management requires that organizations establish processes for managing customer satisfaction and ensuring product quality. It is an ongoing process that involves monitoring the effectiveness of quality control methods and improving them when necessary. The availability of skilled and knowledgeable personnel to manage and oversee quality control processes is one of the most critical factors that determine the success or failure of a company's supply chain management.(Wijewickrama et al., 2020) This is because it is difficult to maintain high-quality standards if the company does not have enough employees who know how to implement them.

For example, in order for a company to maintain high-quality standards in its supply chain management, it must have employees who are capable of ensuring that all products meet these standards. These employees should also be able to detect any problems with current practices and come up with solutions for them so that they can be fixed before they become more serious issues. In addition, companies must be able to coordinate their efforts with suppliers and customers in order to ensure that they are receiving high-quality raw materials and products on time. If a company has poor communication skills, then delays may occur that could result in shortages or product recalls.(McAfee et al., 2002) In order to ensure that their supply chain management system is working smoothly, companies should ensure that they have a team of experienced professionals who can manage all aspects of the process. This can be achieved by hiring individuals with relevant qualifications and experience in this field. Quality management is an important part of supply chain management. The success of a business depends on its ability to deliver goods and services with high quality and reliability.

The integration of quality management into the overall strategy and goals of the organization is one of the most important factors that determine whether or not quality management is successful in supply chain management. This means that the organization must have a clear idea of what it wants to accomplish, and it must be able to communicate these goals to all employees in a way that makes sense for them. The availability of sufficient resources for

implementing quality management at all levels of an organization.(Keller et al., 2020) An effective system for collecting data about defects and other problems in manufacturing processes or distribution networks can help improve efficiency and reduce costs by identifying potential problems before they become too serious.

The integration of quality management into the overall strategy and goals of the organization. Quality management should be incorporated into all levels of decision-making within an organization, from strategic planning to day-to-day operations. The aim of implementing quality practices is to achieve a competitive advantage over other firms in an industry, so it is important that these practices be aligned with the overall strategic goals of the company. The commitment to continuous improvement and the willingness to make necessary changes to improve quality are two factors that affect the quality management in supply chain management.

This means that the company is willing to make necessary changes to improve its processes, products, and services so that it can be more effective at meeting customer needs. The second factor is a company's willingness to make changes in order to improve the quality of its products or services. (Yazdani et al., 2017) These factors both contribute greatly towards achieving high levels of customer satisfaction, which leads directly towards increased profits. A company that is committed to improving its quality management will have a strong desire to improve and will make time for this purpose.

Supply chain design, including the choice of suppliers and the distribution of products, can affect the quality of the products delivered to customers. This is because this process determines how closely companies are working with their suppliers to ensure consistent quality. If a company has chosen poor suppliers or does not have a good distribution system in place, it will likely have more problems with maintaining consistent quality over time than if it had chosen better suppliers and had a more efficient distribution system.

When choosing suppliers, it is important for companies to use those with a proven track record for quality. Companies should also have clear policies and procedures for dealing with suppliers who do not meet quality standards. (Lim et al., 2022) The distribution of goods affects quality in several ways. For example, if goods are shipped without enough time to allow for any defects or damage, then they may not meet customer expectations upon arrival. Also, if goods are shipped too late, they may be outdated by the time they reach their destination.

Another factor that impacts this is whether or not there are multiple layers in between customers and suppliers. If there are multiple layers in between customers and suppliers, then it is more likely that there will be less consistency across products because each layer in between customers and suppliers may have different standards for quality. Any business relies on effective planning and coordination of activities, such as production, transportation, and distribution, to ensure goods are delivered on time and in the right quantities. Managing a

company's supply chain can be more complicated than just planning for deliveries. (Lim et al., 2022) A company must make sure that each step in their supply chain is well planned. This will help them meet their goals for delivery time and quantity. In order to achieve quality management goals, it is necessary for businesses to understand what their customers want from them. This involves conducting market research so that you know what your target audience wants from your company. The adoption of sustainability initiatives at different levels within an organization's supply chain can create a positive impact on customers, employees, suppliers and other stakeholders.

Sustainability initiatives can also help companies to reduce their overall costs and risks while they improve their competitive advantage with customers who are seeking products that have been produced with less impact on the environment. The use of safety procedures and practices to ensure that no injuries occur during the transportation of products through the supply chain. The quality management system needs to be aligned with the organization's strategy, vision and values. A robust quality management system will enable an organization to sustain its competitive advantage by delivering superior value to its customers, employees and shareholders. Inventory management is a significant factor in determining quality management in supply chain management. It is important because it impacts both customer service levels and costs for companies. A company needs to keep an adequate inventory on hand to meet consumer demand and avoid unnecessary costs due to shortages or overstocking. The efficiency and effectiveness of the logistics processes are key to the supply chain's success. This includes the transportation, warehousing, and inventory management processes, as well as the technology and systems used to support these processes. The quality of goods and services provided by suppliers can have a direct impact on customer satisfaction. In order to ensure that goods are delivered quickly and at an appropriate cost, it is important for businesses to be able to evaluate how well their suppliers are performing at each stage of production.

Objective

1. To explore the Factors that determines the Quality Management in Supply Chain Management.
2. To know the influence of quality management in supply chain management.

Methodology

In the present study 243 people were surveyed from quality management department of supply chain management to know the Factors that determines the Quality Management in Supply Chain Management. The survey was conducted with the help of a structured questionnaire. The researcher had collected the primary data through convenient sampling method. Data was analysed and evaluated by mean and t-test.

Findings

Table below is sharing respondent's general details in which it is found that in total 243 respondents males are 79.8% and rest 20.2% are females. 30.0% are below 35 years of age, 44.9% between 35-42 years of age and rest 25.1% are above 42 years of age group. 21.0% of the respondents are working as inventory manager, 20.2% are logistic planner, 27.6% are working as facility manager, 24.3% are supply chain specialist and rest 7.0% are working as other positions in quality management department of supply chain management.

Table 1 General Details

Variables	Respondents	Percentage
Gender		
Male	194	79.8
Female	49	20.2
Total	243	100
Age (years)		
Below 35	73	30.0
35-42	109	44.9
Above 42	61	25.1
Total	243	100
Designation		
Inventory manager	51	21.0
Logistic planner	49	20.2
Facility manager	67	27.6
Supply chain specialist	59	24.3
Others	17	7.0
Total	243	100
Work experience (years)		
Less than 8	82	33.8
8-12	98	40.3
More than 12	63	25.9
Total	243	100

Table 2 Quality Management in Supply Chain Management

S. No.	Statements	Mean Value	t value	Sig.
1.	Inventory management in supply chain management is important for both customer service levels and company costs	3.11	1.745	0.041

2.	Implementation of quality practices in supply chain to achieve a competitive advantage	3.14	2.235	0.013
3.	Integration of quality management into the overall strategy and goals of the organization	3.09	1.460	0.073
4.	Skilled and knowledgeable personnel to manage and oversee quality control processes	3.21	3.337	0.000
5.	Quality assurance measures to meet product’s specifications and standards	3.18	2.907	0.002
6.	To address environmental factors (weather conditions) and human factors (employee training levels)	3.12	1.905	0.029
7.	Use of technology and data analysis to track and monitor product’s quality and services	3.16	2.565	0.005
8.	Identification of potential risks associated with delivering products or service	3.10	1.610	0.054
9.	Collaboration to improve the quality & overall efficiency and allows different parties to work together in developing solutions	3.17	2.704	0.004
10.	Communication to exchange information about production methods, costs and other factors that affect quality	3.19	3.075	0.001

Table above is showing the factors that determines Quality Management in Supply Chain Management. The respondent says that for quality management in supply chain management, Skilled and knowledgeable personnel to manage and oversee quality control processes with mean value 3.21, Communication to exchange information about production methods, costs and other factors that affect quality with mean value 3.19 and Quality assurance measures to meet product’s specifications and standards with mean value 3.18. The respondent also believe that it is important to have Collaboration to improve the quality & overall efficiency and allows different parties to work together in developing solutions with mean value 3.17, Use of technology and data analysis to track and monitor product’s quality and services with mean value 3.16 and Implementation of quality practices in supply chain to achieve a competitive advantage with mean value 3.14. The respondent also says that it is necessary to address environmental factors (weather conditions) and human factors (employee training levels) with mean value 3.12, Inventory management in supply chain management is important for both customer service levels and company costs with mean value 3.11, Identification of potential risks associated with delivering products or service with mean value 3.10 and Integration of quality management into the overall strategy and goals of the organization with mean value 3.09. Further t-test shows that all the statements are significant (with the value below 0.05) except Integration of quality management into the overall strategy and goals of the organization (*significance value 0.073*).

CONCLUSION

The quality management in the supply chain is perceived to be the major driver of resulting business in an organization. There are numerous factors that are imperative for the quality management to get effective and fruitful results, which include: the collaborative approach, seamless integration among business units, accessible technology and information, effective communication with employees and buyers, use of web-enabled technology, measured excellence in processes and procedures, employee engagement and intelligence quotient of employees. To manage the supply chain effectively it is necessary several tools and steps to achieve the required quality management. This can be achieved through integrating the best practices in line with latest global and regional trends. In this case, we have always focused on comparing and presenting solutions that would be helpful to achieve high quality standards and performance. The above analysis leads to the following conclusions – Under the influence of cost reduction, most companies focus more on cost reduction than quality management; under the pressure of fierce competition, many companies pay more attention to the enhancement of market competitiveness, but ignore a series of factors determining the quality management in supply chain; although the quality management concept is recognized by all levels in enterprise, it is still far from being perfect.

The study had explored the Factors that determines the Quality Management in Supply Chain Management and found that for quality management in supply chain management, Skilled and knowledgeable personnel to manage and oversee quality control processes, Communication to exchange information about production methods, costs and other factors that affect quality, Quality assurance measures to meet product's specifications and standards, it is important to have Collaboration to improve the quality & overall efficiency and allows different parties to work together in developing solutions and Use of technology and data analysis to track and monitor product's quality and services. The study concludes that there is significant influence of quality management in supply chain management.

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