

# Predictable and Precautionary Measures of Risk in Relation with Supply Chain Management (SCM)

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**Abstract:** The concept of Supply Chain Management (SCM) deals with the chain of delivery of goods or services from the production to the consumption. The core part of the Supply Chain Management system is the integration of different procedures including Planning, Purchasing, Manufacturing, Distribution, and Marketing. It also focuses on three levels that includes; Strategy, Tactics and Operations. But apart from all these, risk is a major component in doing all the above mentioned procedures and levels and it also important to understand that risks are inevitable and unavoidable. That's the reason the concept of Supply Chain Risk Management (SCRM) emerged. This paper explains about the measures to predict and precaution the companies regarding the risk to a certain extent.

**Keywords :-** Supply Chain Management (SCM), Supply Chain Risk Management (SCRM), Threats, Control, Risks, Uncertainty, Monitor

## 1. Introduction

"Supply chain is the network of organizations that are involved through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services in the hands of the ultimate consumer" (Martin, 1992, p. 320). Earlier, supply chain wasn't a separate topic or a subject to be discussed as a whole. Instead, it was just a part and part of a business by all the business concerns regardless of size and complexity of the business. But, this emerged as a management study (Supply Chain Management) when the focus was inculcated on the aspects such as marketing, customer satisfaction, packaging etc., In other words, it can also be stated as, due to increase in technology and communication, this concept has also been widened which wasn't present for the past 30 years. The other aspect of this study is risk and the definition of risk is as follows: "Risk refers to the uncertainty that surrounds future events and outcomes of operations" (Waters, 2011, p. 14-16). All the major decisions are taken by the top executives keeping in mind about the risk factors. Because its unavoidable, uncertain and inevitable in all the business concerns. The talent of the managers or the decision makers lies in minimising, controlling the risk and increasing the profit. The real challenge is prioritizing the risk factor and understanding its consequences. For instance; In a cold storage warehouse, floods are being forecasted by the meteorological institute on the other hand there is a communication from the electricity board that, there will be shut down for the upcoming week. How will you prioritise? What will you decide? All these are a part of this SCRM. Hence it is vital to know how about the measures and preventability in controlling threats and risks by both natural and man-made disasters.

## 2. Significance of the Study

The wholesome idea is to amalgamate both risk and supply chain management and to provide an outcome based on precautionary and predictable measures based on the level of risk which is being inculcated in the supply chain management. It also signifies the different levels of risk and the solutions for it in prior to its economic and social instability/loss.

### 3. Objective

- To identify the precautionary measure of the risk in Supply Chain Management (SCM)

### 4. Review of Literature

A systematic literature review identifies, analyses and summarises previous research including research trend, focus and issues (Rousseau et al., 2008). As suggested by the Fischl, M., Scherrer-Rathje, M., & Friedli, T. (2014), the contents were dug deeper to get the resources through different articles such as; google scholar, Omega, Research gate, Hazard publications. The reviewed journals are related to the categories of operations management, supply chain management, business reviews and operations research. To achieve a high level of relevance and a better quality of the review, this research study excluded unpublished material, magazines, web pages, master and doctoral dissertation and news articles as of Ghadge, Dani, and Kalawsky (2012) and Ho, Zheng, Yildiz, and Talluri (2015)

#### Conceptual Framework

The concept of this SCRM (Supply Chain Risk Management) is classified into four broad categories which includes,

- Risk Identification
- Risk analyses
- Risk Mitigation
- Risk Control

Risk Identification: This explains widely about pinpoint where the problem in the linking chain occurred. Risk identification is the process of determining risks that could potentially affect the company. The sooner these risks are identified, the better actions can be taken to mitigate or manage them. If the company does not identify the risks, they are not able to analyse or mitigate these. There are three components in identification of risk; a) Quality b) Inventory and c) Natural disasters.

Risk Analyses: Berg (2012, p 85) and Waters (2011, p. 129-130) describes the two main approaches to analysing risks. The first one is the qualitative technique. This approach can be used, for example, when the likelihood of the events is very difficult to estimating such as a fire in the warehouse, or when the risks are being subjected to more expensive techniques Another and more sophisticated approach is to use quantitative analyses. With this technique, the likelihood of the event and the impact should be quantified. Although it is really difficult to measure and evaluate the likelihood of such complex scenarios such as a fire in a warehouse or earthquake, many probabilities from different events can be quantified or at least one appropriated approximation can be found.

Risk Mitigation: After the analyses, the decision of priority comes into existence. We cannot give importance to all the factors of risk. That might lead to different focus and divert us from making profit. Thus, the company needs to define the most appropriate way of dealing with these risks (Vilko, 2012, p. 47-48).

Berg (2012, p 86-87) presents the most traditional ways of mitigating risks:

- Avoid the risk
- Reduce the likelihood of the event
- Reduce the impact

- Transfer the risk
- Accept and ignore the risk

**Risk Control:** Because supply chains are very dynamic and can change very fast, the risks' impact or likelihood can change as well. It is essential that the risks are regularly monitored. Changes in the organization and the environment in which the company operates must be identified and the appropriate changes actualized on the system. Another important point is that in the future, more data and information will become available and other will become obsolete. Therefore, it is also possible that the company will have a better understanding of the risk scenario and decide to undertake another strategy to face it. (Berg, 2010, p 87).

## 5. Research Methodology

This paper is compiled of secondary data taken from different journals, articles and website data. These data and information are true and liable. The sources and references are given at the end of this paper.

## 6. Discussions and Findings

Types of Risks/Problems	Measures
Floods	Avoid
Minor & Medium sized risk	Accept
Livelihood	General Reserves
Internal Production/Inbound Components	Buffer Stock atleast 10%
Solid internal component of a product	Replace
Lack of Employees in one area	Diversify
While implementing New plant/Machinery	Flexibility in supply Chain
Disruption	Insurance
Before Disruption	Good Relationship
Human errors/Flaws	Quality Check
Quantifying Risk	Increase the buffer stock
Risk of New Responsibility	Organising
After an Interruption	Back up Plans
Likelihood of interruptions	Protecting (Eg: Burglary alarm etc.,)
Likelihood of Disruptions	Right Education
Finance	Transfer of accounts
Lack of Employment	Take some extra employees in prior

## 7. Conclusion

The avoidance of risk is impossible in all business concerns but, reduction of risk is possible. Therefore, the risk factors which are mentioned above can be a measure in reduction of risk but definitely not the avoidance of risk. For instance; if there is a natural calamity, we cannot control it instead we can protect to a certain extent. Thus in conclusion these measures are the most precautionary and the most reliable measures in protecting the supply chain from risk.

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