

Assessment of risks in the purchase process of construction companies

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ABSTRACT

This paper is apprehensive with the measurement of risk in the purchase progression of a construction company. Risk has been defined as a measure of the probability, the severity, and the exposure of all hazards of an action. Risk management is at the core of any production or group. This is central to any business regardless of size, activity, or sector. Construction industries can lose considerable sums of money as a result of breakdown to identify and calculate risk in time. Industries may even sacrifice their opportunity to take improvement of potentially useful opportunities arising in the course of their activities if risks are not recognized in good time. Risk management is, therefore, as much about looking ahead to identify further opportunities as it is about avoid or mitigating losses.

KEY WORDS: Supply chain administration, purchase process, data analysis, interpretation, likert-scale.

1. INTRODUCTION

Construction source risk engage each of the entity in the purchase process: the proprietor, designer, main contractor, subcontractors, and supplier in the construction industry. The possible for problems and mistake is overstated by the mutual relationship between these entities. The risks include:

- Inner monetary issues
- Functioning investment trouble
- Payment issue from project holder
- Substandard plans and condition
- Inadequate technological capability
- Lack of contact between supply chain partners
- Work feature issues

Among these difficult proceedings separately and collectively lead to the entire purchase process to go destroy. Risk management involve identify and assess different strategy for eliminate and reduce supply chain sourcing risks. Perhaps the most significant component of risk management is the documentation, qualification, and monitor of all supply chain participants.

Purchase process:

Definition: Purchasing is the formal process of buying construction materials. The Process usually starts with the Demand.

Importance of Purchase process in Construction: The requirement of construction materials is fulfilled in the purchase process. Effective purchase process leads to profit and the time delays are reduced.

Problems in Purchase process in Construction: There are several problems usually occurs in the purchase process, some of them are:

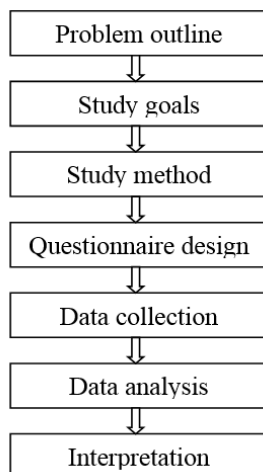
- Quantity Estimation inaccuracies
- Lack of pre-purchase review
- Payment delay
- Pilferage of materials
- Damage of materials
- Miscommunication within the Company
- Miscommunication between Company and Vendor

Aim of study: The aim of the study is to find the areas of occurrence of risks in the purchase process. The highest priority risks are identified in the purchase process and the cause of occurrence of risk is also assessed.

Objectives: The specific objectives are:

- To classify the risks that are present in the purchase management process of a construction companies.
- To find areas of concern in the PM process based on risk perception among managers.
- Scope of project

The project is done to assess the risks that are present in the purchase process of a construction company. The risks are identified by forming questionnaire based on the purchase process problems and the questionnaire is distributed to 43 different Construction companies and the response are drawn out from an officials of each company. The collected data from different companies are analyzed and a bar chart is prepared for each and every questions that are framed.

2. METHODOLOGY**Figure.1.Flow chart Methodology****Questionnaire design:**

Likert-Scale type: A psychometric response scale primarily used in questionnaires to obtain participant's preferences or degree of agreement with a statement or set of statements. Likert scales are a non-comparative scaling technique and are one-dimensional (only measure a single trait) in nature. Respondents are asked to indicate their level of agreement with a given statement by way of an ordinal scale.

Questionnaire: Questionnaire is designed based on the common risks that occurs in the purchase process of the construction company. 30 different questions are framed based on the risks occurs with 5 number rating.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Eliciting Response: The framed Likert scale questionnaire are distributed to 43 different construction companies of India and the response are collected from the officials of each company.[18-19] The data entry is done based on the drawn out responses and the data analysis is done using MS-Excel.

Data analysis: Data analysis is done to find the risk perception from the responses that were collected from the officials of 43 different construction companies. Response % for all 30 questions are shown graphically. Using the responses got from the officials the maximum priority risks that often occurs in the purchase process are identified.

Interpretation: The responses are drawn out from 43 different construction companies in India. Those companies are classified and arranged into 3 categories. They are:

- Large scale construction companies (28 Nos)
- Medium scale construction companies (6 Nos)
- Small scale construction companies (9 Nos)

Risk in Large scale construction companies: Maximum average % of strongly agree given by large scale Construction company is 37.50% for the payment delays which leads to delay in supply of materials. Maximum average % of agree is 71.88% for the miscommunication between the company and vendor which leads to delay in purchase of the materials.

Risk in Medium scale construction companies: Maximum average % of strongly agree given by Medium scale Construction company is 50% for the payment delays which leads to delay in supply of materials. Maximum average % of agree is 100% for the pilferage at site that cause loss of purchased materials.

Maximum average % - agree - 83.33%.

- Hurried purchases lead to variations in specifications of materials.
- Loss of purchased materials due to site storage conditions.
- Inadequate storage results in loss of purchased materials.
- Rectification of custom-fabricated materials results in increased costs.

Risk in small scale construction companies: Maximum average % of strongly agree given by small scale Construction companies is 55.56% for the payment delays which leads to delay in supply of materials. 33.33% - strongly agree - Small scale construction company -Rectification of custom-fabricated materials results in delays. 77.78% - agree

- Delays in payments result in delays in supply.

- Price escalation of materials leads to delays in the purchase approval process.
- Change in government regulations leads to delays in the purchase process of certain basic materials such as sand and coarse aggregate.
- Rectification of custom-fabricated materials results in increased costs.

Overall Maximum risk:

- Overall maximum % of strongly agree by the construction companies is 42.55% for the delay in the payment which leads to delay in supply of the materials.
- And the overall maximum % of agree by the construction companies is 65.96% for the inadequate storage which results in loss of purchased materials.

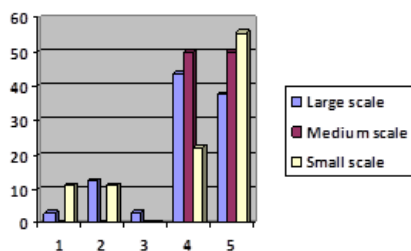


Figure.2.Payment delays leads to supply delay

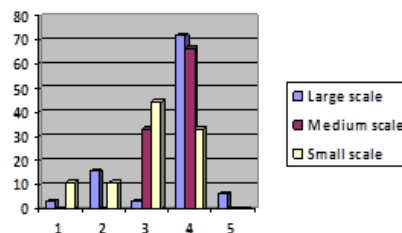


Figure.3.Miscommunication between company and vendor lead to purchase delays

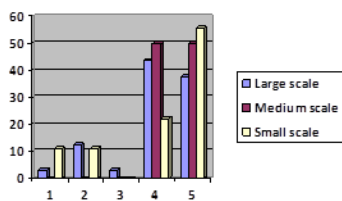


Figure.4.Payment delays leads to supply delay

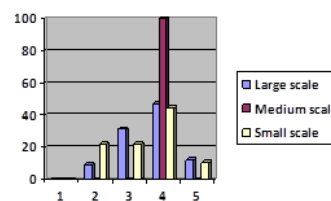


Figure.5.Pilferage at site

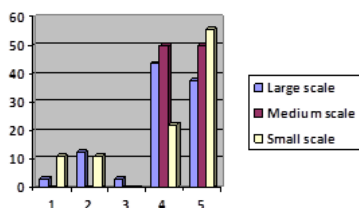


Figure.6.Payment delays leads to supply delay

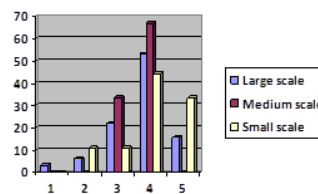


Fig 7:Delays due to rectification of custom fabricated materials

3. CONCLUSION

The risks that occur in the purchase process of a construction company are assessed for all types of companies and the highest priority risks are identified.

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