Achieving Procurement Excellence Through A Bayesian Network Modelling Approach

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Abstract

Procurement as one of the activities in Supply Chain Management has recently received great attention from researchers due to its not just being a support function, but a key strategic tool for organizations to build their competitive advantage. Although different approaches that come under the purchasing process (such as initiatives, planning, and monitoring) have been studied, the literature extensively, they are done in isolation and not by taking the overall purchasing goal into consideration. This research and the interdependency and ineffectiveness of the current purchasing policies are highlighted in the literature by several reports and research publications and they stress on the need to have better procurement practices to achieve savings of millions of dollars per year. Considering the inefficiency of the current fragmented approach towards improving purchasing positions, the research aims to take a different approach towards this strategic activity by including all the key variables that affect the quality of purchasing into one single mathematical model. Using such an approach, the objective is to elevate a buyer with the required attributes by which informed procurement decisions can be taken and transform him/her into a smart buyer. This mathematical approach towards purchasing will enable us to understand the key variables that affect purchasing, as well as their interdependencies and how they affect the level of a buyer’s smartness. The research will provide a smart buyer enablement framework towards improving purchasing positions in supply chains.

Method

My research method includes the following stages which have also been described in Fig. 4.

Stage 1: Quantifying the current level of smartness
Stage 2: Adjusting the KPIs to achieve an optimum level of smartness given the current resources
Stage 3: Recommendations and scenario planning towards achieving procurement excellence

Model

In the first stage of the methodology, the relevant KPIs and the interdependencies between them have been mapped as follows:

Results

By measuring the current values of the KPIs into the model, the current level of smartness is obtained and needs to be interpreted through our performance matrix. The current performance is not good.

Conclusions

• Procurement KPIs have different levels of impact in achieving procurement excellence. Some KPIs are more effective and critical while others have a smoother impact on the overall outcome.
• Procurement excellence doesn’t necessarily require excellence in all KPIs. A proper combination of excellent, competent and good KPIs will result in a satisfactory level of procurement performance.