Supplier Performance Management in Higher Educational Institutions

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Abstract - ***Due to diversity of Supply Chain Management (SCM), it could be applied at various industries, including manufacturing and service industries. This paper reveals the Supplier Performance Management activities in the educational institutions, one of the very common sectors in the service industries. This research is significant in view of the need in ensuring that the supply chain activities at the education sector is aligned with the objective to provide the best service to the stake holders especially the future human capital resource, which is the graduates. The research has successfully been carried out at University Kuala Lumpur (UniKL) Strategic Business Unit (SBU) or campuses. This research analysed Supplier Performance Management practice between the campuses, criteria used for supplier performance and identify barrier elements in applying supplier performance management. Data collection has been carried out by the primary data, i.e. using questionnaires and interview session. The study revealed significant finding which contributed to the Supply Chain Knowledge and practices. There is a gap between the supplier assessment criteria adopted by the campuses as compared with literature review. There are differences in supplier evaluation criteria between the 7 campuses involved in the research. ISO certification, top management commitment and poor knowledge on benefits of Supplier Performance Management system are barrier factors. The research found variances of supplier evaluation criteria among the campuses. It is suggested to explore further on the connection/relationship between Quality Management System (QMS) or ISO 9001 certified organization and Supplier Performance Management adoption.***

Keywords: Supply Chain Management (SCM); Supplier Performance Management (SPM); Quality Management System (QMS); Supplier Evaluation; Evaluation Criteria.

1. Introduction

The aim of this research is to reveal more information related to Supply Chain Management (SCM) in education sectors. Three main objectives are established to drive the research. The first objective is to analyse Supplier Performance Management practice between the campuses. The second objective is to reveal the criteria used for supplier performance among campuses. The third objective is to identify barrier elements in applying supplier performance management.

The interest of this study is to reveal the SCM at the education sectors. This research limits the scope to Majlis Amanah Rakyat (MARA) higher education institutes which concentrate at Universiti Kuala Lumpur (UniKL) campuses. There are 12 campuses of UniKL in total. However, 7 campuses participated in this research due to time and geographic limitations. Refer figure 1.

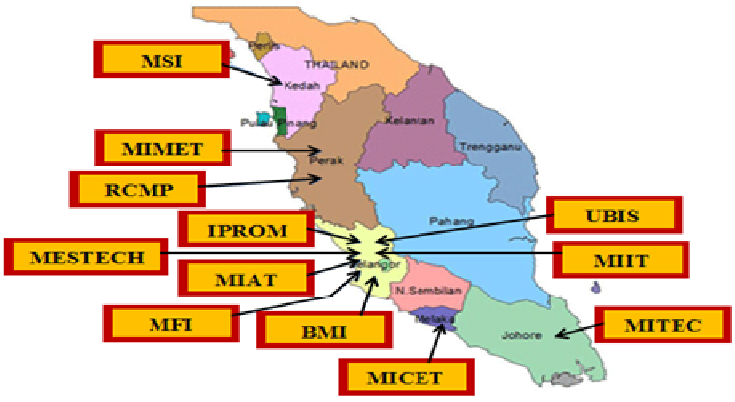

Figure 1: UniKL campuses

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2. Literature Review

The SCM widely covers the process of input-process-output. This research focuses on the input stage. In this stage, it is vital to investigate how universities measure the performance of the supplier through the concept of Supplier Performance Management (SPM). Through past journals and books, the SCM model is widely applied by the commercial organizations especially the manufacturing sectors.

The SCM model depicts three major stages; namely input-process-output stages. In the context of manufacturing, the inputs are referred to the raw material supplied to the factory for processing. Several stages are involved prior reaching to the customer such as distributors, wholesalers and retailers. There is information flow from customer to suppliers. There are two terms in SCM terminology which are supply chain and supply chain management. Supply Chain refers to all process chains and organizations that are involved in making a product for customers [1]. In other word, it can be defined as a thing that connects suppliers with its customers. Meanwhile, supply chain management is defined as the management of process and control. This study focuses at the stage of input.

This is where supplier performance is evaluated through adoption of supplier performance management. Supplier evaluation is well defined as the process of evaluating the supplier's process and practices performance.

The performance is monitored along aiming at the cost of reduction, risk mitigation and driving continuous performance. The supplier measurement can well be said as extremely complicated matters due to very large number of criteria to be considered. The differences occur because of the necessity and purpose of the criteria [2]. To enhance more visualized criteria, table 1 shows the authors (sources) and the Supplier Performance Criteria. Based on 19 authors, 13 criteria have been frequently mentioned. The most popular criteria are quality, price, delivery performance and services. This is followed by financial strength, lead-time, technical ability, flexibility, production capacity, development, management attitude, fill rate and geographic location. [3] Refer table 1.

Table 1: Supplier performance criteria

Criteria/ Source	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Total
Quality	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	19
Price/Cost	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X		17
Performance Delivery	X	X	X		X	X	X	X	X	X			X	X	X	X	X	X		15
Service	X			X	X	X		X		X	X		X		X		X	X		11
Financial strength	X	X		X				X				X		X	X		X		X	9
Lead-time			X		X	X	X			X		X				X	X			8
Technical ability	X	X		X										X	X	X		X	X	8
Flexibility	X		X			X	X					X				X				6
Production Capacity		X										X			X	X	X		X	6
Development				X		X	X				X				X					5
Management attitude				X										X			X		X	4
Fill rate		X				X														2
Geographic location		X													X					2

Supplier Performance Management aims to establish and align goals, indicators and metrics,

enable benchmarking of the suppliers, encourage collaborative agreements, team problem resolution and two-way continuous learning [4]. The most important is to drive supplier ability to provide leading edge products and services. The Supplier Performance Management brings benefits to the organization in several aspects [5].First, the organization will be able to manage the supplier in accordance to the expectation by the end customers. Second, the suppliers will continuously improve themselves when they realize that they are measured. Third, the organization will be able to increase the competitiveness by shrinking order cycle time and inventory level [6].

Ref [7] refers that the additional views of the supplier performance criteria which is Prices (Stability and competitive), Quality (durability and reliability), Service (Technical Support and Emergency Support) and Delivery (Lead time and Quantity). The implementation of supplier performance monitoring is also depend on the policy and management commitment. In the context universities the emphasis of supplier monitoring might be different from manufacturing industries. The implementation of supplier performance management also might be related with the adoption of Quality Management System (QMS) through ISO 9001:2008. The organization shall evaluate and select suppliers based on their ability to supply in accordance with organization requirements [8]. Maintaining the performance of the whole supply chain at a high level requires integration, cooperation, communication, participation, and sharing of information between supply chain partners. One of the means of achieving this objective is to apply Quality Management (QM) techniques to support the supply chain activities. Since the ultimate objective of both QM and Supply Chain Management (SCM) is continuous improvement and customer satisfaction, it makes sense to join their forces in order to improve the performance of the whole supply chain [9].There are other challenges in implementing Supplier Performance Management. Evaluating suppliers can be challenging, costly, inefficient, and inconsistent. From an analytics perspective, many approaches are inadequate and unable to provide the insight needed to drive better decision making and performance improvement. They tend to provide after-the fact results rather than identifying root causes of performance issues, without which improvements are difficult to drive. Understanding supplier performance can both prevent problems and facilitate performance improvement [10].

3. Methodology

This research is conducted based on interviews and survey questionnaires. To conduct the investigations, this research identified seven campuses as sample for the study. The rest of campus is yet to implement Supplier Performance Management. The questionnaires has been divided to two sections. Section A focused on the demographic information: Gender, Age, Campus, Position level and experience. Section B focus on the Supplier Performance Adoption. The interview is also conducted to get response on the challenges in implementation of Supplier Performance Management.

4. Findings

4.1 Demographic analysis summary

Due to time and geographic limitation, only 7 campuses were involved in data collection which is MESTECH, MFI, MIAT, IPROM, BMI, MIIT and MITEC. 43% of respondents were male and 57% of respondent were female. The respondents were from several ranks which is senior executive, executive and officers. The number of staff responsible at the procurement unit for each campus ranges between 2 to 3 staff. According to feedback during the interview, the number of staff should be added to match the amount of workload.

4.2 Supplier Performance Management practice among UniKL Campuses

A total of 7 campuses have been analyzed. The research found that there were consistencies of practices among the campuses where 58% (4/7) of campuses adopted Supplier Performance Management while 42% (3/7) campuses did not. Campuses adopting Supplier Performance Management were MESTECH, MFI, BMI and MITEC while the other 3 campuses which did not adopt Supplier Performance Management were MIAT, IPROM and MIIT. In addition to the adoption level, relevant input also has been obtained such as the documentation practice - whether the Supplier Performance Management has been carried out through a formal process or informal process. The formal process was governed with a proper documentation approach. The frequency of performance evaluation was also obtained through interview sessions.
Table 2 summarizes the findings.

Table 2: Supplier Performance Adoption

NO	Campus	Supplier Performance Management Adoption	Frequency of Evaluation
1	MESTECH	Yes. However, there is no proper documentation	Once a year (November-December)
2	MFI	Yes. There is a proper documentation.	Once a year (October-December)
3	MIAT	No. There is no monitoring of supplier performance.	Not applicable
4	IPROM	No. The campus is yet to reach that level	Not applicable
5	BMI	Yes. The adoption is formal with a proper documentation	Once a year (December-January)
6	MIIT	No. The supplier evaluation is yet to be decided.	Not applicable
7	MITEC	Yes. There is a proper documentation.	Once a year (November-December)

4.3 Comparing Criteria adopted among the campuses.

Based on literature review, many authors emphasize on the quality, delivery, price and service. Research objective 2 intended to compare criteria of evaluation and number of criteria. Table 3 provides the summary of comparison. Research found that there is inconsistency between campuses in terms of performance assessment criteria and the number of criteria. The number of criteria ranges from 3 to 7. MFI has the highest number of supplier performance criteria which is 7. This is followed by MESTECH and MITEC with 5 criteria respectively. The campus with the least number of supplier performance criteria is BMI which only has three criterias. The most selected criteria for supplier performance by the campuses is Delivery (4), Price (3), Technology (3), Quality (3) and Responsiveness (2). The remaining criteria such as experience, request, technical support, documentation and service were selected by only one campus. Refer table 3.

Table 3: Supplier Performance Management Adoption.

Campus/Criteria	MESTECH	MFI	BMI	MITEC	Total Items
1.Delivery	Yes	Yes	Yes	Yes	4
2.Price	Yes	Yes		Yes	3
3.Technology	Yes	Yes		Yes	3
4.Experience	Yes				1
5.Request	Yes				1
6.Quality		Yes	Yes	Yes	3
7.Technical Support		Yes			1
8.Responsiveness		Yes		Yes	2
9.Documentation		Yes			1
10. Services			Yes		1
Number of criteria per campus	5	7	3	5	20

4.4 Identify barriers from adopting the Supplier Performance Management.

There are seven criteria has been selected to be analysed which is (1)ISO Certification, (2) Commitment from Top Management , (3)Knowledge of Staff, (4) Long and complex system set up, (5)Unclear benefit, (6)Rotation system and (7) Less experience. To achieve the third objective, data collection was carried out at 3 campuses which were yet to adopt the Supplier Performance Management. The campuses involves are MIAT, IPROM and MIIT. Seven factors have been identified as barriers for the adoption.

The most significant factor is ISO certification (3), followed by Commitment from Top Management (2), Knowledge of Staff and organization on Supplier Performance Management (3), Long and complex system set up (2), Unclear benefit of adopting the Supplier Performance Management (2), Rotation System (1) and less experience (0). Apparently there is a strong connection between Quality Management System (QMS) which referred to ISO 9001: 2008 and the adoption of Supplier Performance Management. The commonality between the 4 campuses is they are yet to be ISO certified.

5. Conclusion

The objectives of this research are met with several significant findings which contribute to the knowledge in the area of Supplier Chain Management at a broad perspective and Supplier Performance Management in more specific perspective. This research revealed the inconsistency of adopting Supplier Performance Management among the respondents in terms of number and performance criteria. Delivery appears as the most common criteria selected by the four campuses who adopted Supplier Performance Management. All findings aligned with most of the previous studies in the literature review. Quality Management System (QMS) which referred to ISO 9001: 2008 appears as a major reason causing the respondent to discover that there is no pushing factor to implement the Supplier Performance Management on top poor commitment by top management and knowledge.

This research is limited to 7 UniKL campuses only due to time and geographic limitation. Hence, future research is suggested to be extended to bigger sample size considering all universities and colleges. It is also suggested to compare the trend between public and private universities. It is also worth exploring further deep analysis on the connection/relationship between Quality Management System (QMS) or ISO 9001 certified organization and Supplier Performance Management adoption.

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