THE MODERATING ROLE OF TOTAL COST OF OWNERSHIP IN DYNAMIC PROCUREMENT TRANSFORMATION

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ABSTRACT

Government Linked Companies (GLCs) were underperformed due to various factors including a lack of focus on the bottom line, ambiguous social responsibilities, ineffective boards and poor talent management among many others. Besides, the Asian Financial Crisis which was happened in 1997 also has severely hit the performance of GLCs. Apart from the underperformance of GLCs, the urgent need for transformation was announced by the former Prime Minister, Tun Abdullah Ahmad Badawi which lead to the official launch of the Government Linked Companies Transformation (GLCT) programme on 29 July 2005. In the GLCT programme, there are 10 initiatives have been structured to the GLCs which including enhance board effectiveness, strengthen director capabilities, enhance GLICs monitoring and management, improved regulatory environment, clarify social obligations, review and revamp procurement, improve capital management, manage and develop human capital, intensifying performance management and enhance operational improvements. With respect to that, it is clear that managing procurement become a part of transformation for GLCs via the The Red Book, Procurement Guidelines and Best Practices. Hence in transforming their procurement management and promote a strong platform for implementing best practices of procurement, GLCs were encouraged to adopt The Red Book as their primary reference. One of the five best practices of procurement is minimise Total Cost of Ownership (TCO).

Keywords: cost efficiency, financial performance, Government Linked Companies, procurement, total cost of ownership

1 Introduction

More than a decade ago, Government Linked Companies (GLCs) were underperformed due to various factors including a lack of focus on the bottom line, ambiguous social responsibilities, ineffective boards and poor talent management among many others. Besides, the Asian Financial Crisis which was happened in 1997 also has severely hit the performance of GLCs. The Government, as a major shareholder and has direct controlling stake on GLCs, is quite worried about the situation since GLCs formed the backbone of the economic structure of the Malaysian economy. GLCs represented 4 per cent of total listed companies in Malaysia with a market capitalization of 54 per cent of Kuala Lumpur Composite Index. GLCs contributed to approximately 16 to 18 per cent of the nation's gross capital formation and accounted for 9 to 10 per cent of GDP (Bhatt 2016). GLCs and their controlling shareholders, Government Linked Investment Companies (GLICs) constituted a significant part of the economic structure in Malaysia. GLCs in Malaysia are the main service providers to Malaysia in key strategic industries and services including electricity, telecommunications, postal services, airline, airports, public transport, banking and financial services.

Hence, for the GLCs to sustain in contributing to the National income, the business performance of GLCs should be above par and outstanding. There are several National agendas that have been arranged by the Government to the GLCs. Apart from the underperformance of GLCs, the urgent need for transformation was announced by the former Prime Minister, Tun Abdullah Ahmad Badawi which lead to the official launch of the Government Linked Companies Transformation (GLCT) programme on 29 July 2005. In the GLCT programme, there are 10 initiatives have been structured to the GLCs which including enhance board effectiveness, strengthen director capabilities, enhance GLICs monitoring and management, improved regulatory environment, clarify social obligations, review and revamp procurement, improve capital management, manage and develop human capital, intensifying performance management and enhance operational improvements.

With respect to that, it is clear that managing procurement become a part of transformation for GLCs via the The Red Book, Procurement Guidelines and Best Practices. In more dynamic and competitive market environment, managing the procurement become more complex. Procurement management is becoming a strategic priority of firms for their sustainable competitive advantage either in normal times or in turbulent times. In today's dynamic market environment, procurement is positioned as a critical integrative business process and its focus has been extended from short term cost minimisation to long term value creation and delivery (Hong and Kwon, 2012). Hence in transforming their procurement management and promote a strong platform for implementing best practices of procurement, GLCs were encourage to adopt The Red Book as their primary reference. One of the five best practices of procurement is minimise Total Cost of Ownership (TCO).

In relation, managing the procurement very well in the company is about managing the cost of the company itself. Procurement management is the procedure firms use to buy economic resources and business input from suppliers or vendors. It includes the broad management functions of planning, organization, and leadership, staffing, controlling, and communicating procurement processes and activities across the spectrum of the 'upstream' supply chain activities of both public and private organizations (Nantege 2011). Particularly, TCO has been introduced to the GLCs in managing their procurement and thus can reduce the cost of the company. The benefits of practicing TCO in the procurement management to enhance the financial performance of the company has been proven by

Telekom Malaysia (TM) as they saved approximately RM130 million or an average of 20% in 2005 (The Red Book, 2006). Other than TM, Tenaga Nasional Berhad (TNB) also realized TCO is giving many benefits in terms of reducing the cost. In 2015, TNB has come out with the TNB Total Cost of Ownership Implementation Guideline in 2015 even there are certain limitation in practicing it (Alli Rahman & Fadzil 2016) (Alli Rahman & Fadzil 2016). With this guideline, the procurement management in TNB becomes more clearly defined and guided to practicing TCO.

Despite of that, cost management and procurement cannot be separated in managing the business. Malaysian Airlines System (MAS) who suffered a tough time in couple years before has to agree that managing costs is a key component in reaching the projections under the approved Malaysia Airlines' Business Plan (www.talaviation.com). A key performance indicator for the entire organization was cantered around cost management with a focus on managing to budget and improving procurement. MAS believed that one of the areas that can help company to save cost is their procurement because some of MAS supply contracts are above market rates. They were successful in the quarter after they are practicing minimizing the TCO through the key lever of negotiation.

The importance of managing procurement has been emphasized by the former Prime Minister in his speech during the launched of The Red Book, Procurement Guidelines and Best Practices on 26 April 2006. According to him, procurement is a key cornerstone of the GLCT programme to create learner and more efficient corporations. He also stated that such guidelines in the Red Book are crucial to encourage cost efficiency, which will lead to a higher level of competitiveness for the GLCs. By following the guidelines in the Red Book, the potential cost savings are substantial. This potential cost savings could be utilised for human capital development programmes to establish a solid knowledge and skills base for future competitiveness. Due to that, minimizing the TCO as an enhancer to improve the performance of GLCs are including in the Red Book.

In other words, TCO has been verified by the Government as moderator in enhancing the performance of GLCs. By practicing the TCO concept in procurement management, GLCs can achieve the initial and ongoing costs savings by reducing the total costs of products procured. The elements of total costs are including initial product costs which including handling and processing costs, operating costs such as maintenance and user support and business impact costs which including for example costs associated with low productivity or user dissatisfaction. Then, in achieving cost efficiency in the procurement management, GLCs should consider all the costs associated with choosing a particular product or service, not just the initial price paid. It is therefore clear that utilising only initial purchase price as the sole commercial criteria can lead to poor procurement decisions.

Currently TCO concept is widely used by company in every procurement. A case study on a company operating in the service company by Hurkens, Valk, and Wynstra (2006) shows TCO assist company in making the best decision regarding procurement. This company traditionally made their procurement decision based on purchase price only. However, with the application of TCO concept in the procurement as the role to enhance the performance of the company, the best suppliers were selected in the contract and they can focus on the cost savings that are concealed in the contractual terms, which affords opportunities for both the company and supplier to improve their business.

Therefore, the motivation of this study come after the preliminary research which surprisingly study has found out that not all the GLCs are practicing TCO concept in their procurement management. The GLCT Programme Graduation Report (2015) also stated the overall adoption rate for the Red Book is only about 77%. This statistic is not quite favourable since the TCO has been recognized by the Red Book as one of the best practices in increasing the operating expenditure (OPEX) and expenditure expenses (CAPEX) savings.

1.2 Total Cost of Ownership Concept

Typically, in current procurement practice, the procurement decision will look into the purchase price only. However, in making procurement decision, the company should look beyond that in ensuring the objective of the company which is minimizing the cost can be achieved successfully. So in procurement practicing, the thorough analysis should be applied by the company in ensuring they get the best supplier with the best price offered. Hidden cost can actually increase what the company pay for something they procure. By practicing TCO concept in the procurement management, it requires to study and evaluate all the direct, indirect and intangible costs when considering an asset acquisition, thus reducing the risks of failing to recognize the real costs of acquiring an asset.

In relation to the TCO as the moderator in improving the financial performance of the companies, Ellram and Siferd (1998) have explained that the TCO is a purchasing tool and philosophy that aims at understanding the relevant cost of buying a particular goods or service from a particular supplier. The TCO concept suggests that the purchase price of a goods or service is actually only a small portion of the cost of owning it. TCO analysis is not looking at the purchase price alone but all the most relevant cost in the acquisition, possession, use and subsequent disposition of a good or service will take into thought before any procurement decision been made. In analysing the TCO, the elements of the TCO are showed at Figure 0.1 below.

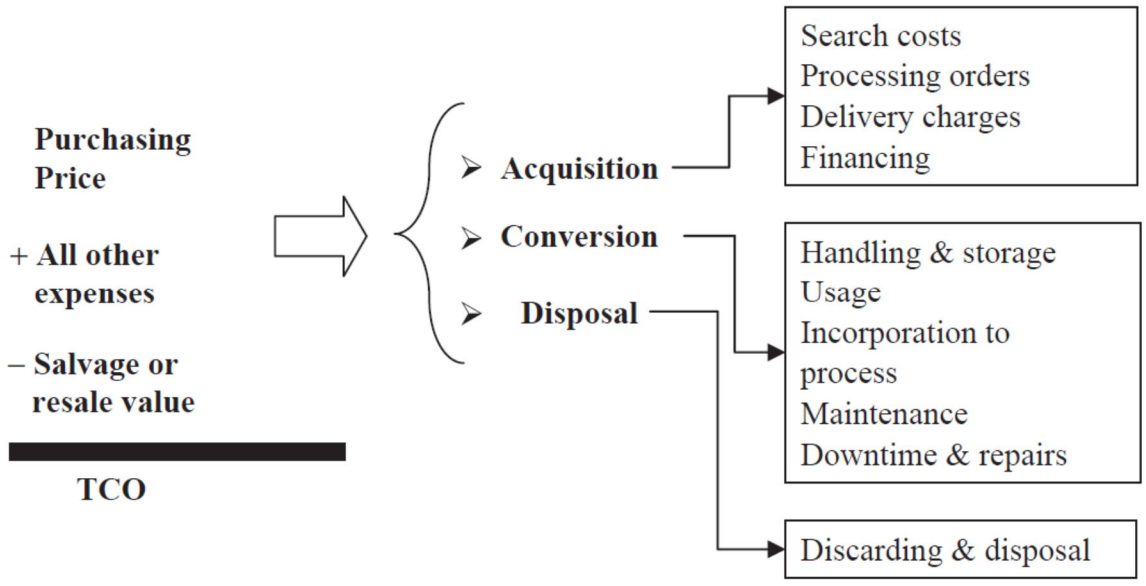

Figure 0.1 : Element of Total Cost of Ownership

Figure 0.1 shows TCO should take into consideration of all the costs in acquisition, conversion and disposal. In calculating the TCO, depreciation value must deducted from the total costs. Costs that should be taken into consideration when calculating TCO are pre-transactional, transactional and post-transactional. Pre-transactional costs occur before the acquisition. Transactional costs are costs related to the purchase of an asset while post-transactional cost are costs that can be associated with the usage of asset during its lifetime and the cost associated to the disposal of the asset (Bladh and Ström, 2008). It is important to know that TCO concept is not only about the purchase price but including the whole costs associated to the procurement involve.

Provided that managing cost is always be procurement responsibility and in uncertain times, it is the priority. In many government and commercial organisations, procurement has now become recognised as a fundamental enabler of business strategy and a preferred method for achieving sustainable cost reduction. Significant cost savings can be realized by effectively managing total costs and determining optimal procuring. By understanding the relevant cost of buying a goods or service, TCO as a tool may assist company gain a long-term, system oriented understanding of the true cost of doing business such that profit and efficiency may increase.

Therefore, in increasing the financial performance of GLCs, this study will look at the managing cost particularly in procurement cost moderated by TCO concept.

1.3 Statement of Problem

A 10-year journey in the GLCT programme, the performance of GLCs are expected to grow beyond the economic and financial benefits to the shareholder, including to benefits all stakeholders and contribute to the nation's future. Even though the market capitalization of GLCs (G20) grew by 2.9 times and total shareholder return grew 11% per annum, but the performance of GLCs are still lower in comparing with non GLCs. Since GLCs are the backbone of the economy of Malaysia, their performance should be at par or more than non GLCs as they are many professional inside the companies (Najid and Rahman, 2011).

With this intention, for the GLCs to outstanding in their business performance, one of the matter to transform is the procurement management. One of the initiatives mentioned earlier is the Red Book, Procurement Guideline and Best Practices. There are five best practices outlined and one of the best practices is minimize the TCO. TCO concept will play the moderator role in enhancing and improving the business performance of GLCs especially in terms of their financial performance. But surprisingly, the preliminary data gathering for the research from the GLCs and PCG, not all GLCs are practicing the TCO concept in their procurement management.

Furthermore, as reported by National Institute of Governmental Purchasing (NIGP) Business Council, a valuable approach that is widely used in the private market procurement remains underutilized by government agencies is Total Cost of Ownership (TCO). Even though TCO allows purchasers to move toward sustainable and long-term cost savings strategies rather than short-term benefits and the lowest price, many agencies still select suppliers based on price without looking at the full value a supplier can offer. So, this study will identify the benefits of managing procurement particularly on TCO perspective as a role to enhance the financial performance of the GLCs.

Moreover, to relate the TCO in procurement, the procurement has an important strategic role in the value chain, it is also a major driver in the extended supply chain. Strategic procurement has been proved by the previous researcher can improve the financial performance of the organization (Sobhani et. al,, 2014). Procurement is not functioned as medium to procure only anymore. But procurement is the medium for the company to control and manage their cost effectively. In other words, the company should look at their procurement management and transform the process to make it more effectively. Procurement department in the company do not generate revenue, they improve performance by reducing products cost or staff or both. TCO is the part in th procurement process. The importance of TCO as an enhancer to improve the performance of the company has been reported in The Deloitte Global Chief Procurement Officer (CPO) Survey 2017. The survey was done among CPOs in North America, South America, Europe, the Middle East and Africa (EMEA) and Asia Pacific stated that CPOs are primarily focused on reducing the TCO to deliver value. CPOs believe that, by practicing the TCO in their procurement management, they can manage their cost efficiently. This is in line with their top priority to support growth in uncertain market, that is cost reduction.

Comparatively, there are also abundant of previous researches about the performance of GLCs in Malaysia with regards strategic management accounting (Rosli, Said, and Mohd, 2014), corporate governance (Amran et, al, 2014; Bhatt, 2016; Janang, Suhaimi, and Salamudin, 2015; Shawtari, Mohammed, Abdul Rashid, and Salem, 2015) and knowledge management initiatives (Rahman and Mohd Shariff, 2015). In addition, previous research by (Mohamad, Rashid, and Shawtari, 2012) also look at the impact of corporate governance mechanism (which is embedded in Green Book) on the practice of earning management. However, there is less previous researches about the procurement management particularly in managing the cost and performance of GLCs. There is also less study about TCO and financial performance in quantitative study. Most of the researches are in qualitative and cases studies.

Therefore, in contributing to the academic and the industry itself, this study will look at the relationship between cost efficiency in procurement moderating by TCO concept in enhancing the financial performance of the GLCs. The role of TCO as an enhancer to boost up the performance of the GLCs will be identified.

2 Literature Review

2.1 Cost Efficiency and Financial Performance

Cost efficiency has become an essential emphasis in today's highly competitive business environment. Productivity and quality are the watchwords of today's business competitions. Companies are not only measuring productivity and insisting on improvements but also insisting that quality means to bring to market products that satisfy customers, improve sales and boosts profits. Efficiency can be measured in three ways; maximisation of output, minimisation of cost, and maximisation of profits.

According to Drury (2004), cost efficiency focuses on cost reduction and continuous improvement and change rather than cost containment. The term cost reduction could be used, rather than cost efficiency. Cost efficiency tends to be applied on an ad hoc basis when an opportunity for cost reduction is identified. It is also consisting of actions that are taken by the companies to reduce costs.

However, a study by (Shieh, 2012) shows the major findings of the study is cost efficiency in the hotel industry is insignificantly associated with the financial performance. This study adopts data envelopment analysis (DEA) approach to measure the cost efficiency of international tourist hotel. The findings of this study do not support the long-held belief that cost efficiency is a critical positive factor for a financial performance.

In related to the cost efficiency, ratio analysis is a part of financial analysis of a supplier and may be undertaken as part of supplier appraisal, category plan or in negotiating planning. Using data from published financial statements such as balance sheet and profit and loss statement, ratio analysis allows for comparison between companies or between the same company's results in one year compared with previous years.

Basically, ratio analysis is used in determining several things. Nuhu (2014) explained the usefulness of ratio analysis is to identify the short-term and long-term liquidity of a firm or the ability of the firm to meet its short-term (current) and long-term financial obligations, the riskiness or long-term solvency of a business which is, the level of gearing or leverage or the extent the firm is financed by debt, the performance, profitability or overall earning power of a business, the assets utilization or efficiency in the use of assets of a business to generate sales revenue and the potential return and risk associated with owing shares or investing in the stock a company.

On top of that, efficiency ratios are used to analyse how well a company uses its assets and liabilities internally (Hazarika, 2015) . The ratios included in the efficiency ratios are asset turnover ratio, inventory turnover ratio and receivable turnover ratio. The efficiency ratio is calculated by dividing overhead expenses by the sum of net interest income and non-interest or fee income. Efficiency ratios are subject to controls of overhead expenses as implemented by senior management and the board of directors. Economic theory assumes that managers will seek to reduce overhead expenses in an attempt to maximize profits.

In measuring the financial performance, Return on Asset (ROA) can measure on how effectively the company's asset are being used to generate profits. ROA is a key profitability ratio that measure o the amount of profit made by a company per dollar of its asset (Schuster, 2015).

A part form the cost efficiency ratios, Inventory Turnover (ITO) measures the number of times in which the average inventory or stock is sold in a given period of time. This is importance to management because for a business to generate greater sales volume for the year, it must buy, sell and replenish its goods or stock as rapidly as possible. A study by Nuhu (2014) regarding role if ratio analysis in business decision, ITO is an attempt to measure whether or not the firm has excess funds tied in inventory. A higher ITO is better in that it implies doing business with fewer funds tied up in inventory. A low inventory turnover figure can mean some old inventory is on the books that being used. Holding inventory costs money-it involves the cost of storage, pupillage, obsolescence, etc (Nuhu, 2014).

Besides ITO, Total assets turnover (TATO) is also one of the measurement in efficiency ratios. The TATO measures how efficiently assets are being used to generate revenue (Crane, 1998). It is a measure of the magnitude of net sales generated by the assets of the firm. The higher the assets

turnover rate, the better the firm is using its assets to generate sales. In other words, the larger the total assets turnover, the larger will be the income invested in the assets of the busing (Nuhu, 2014).

Fixed assets Turnover (FATO) is another measurement in cost efficiency. FATO measures the capacity of fixed assets in producing sales. It shows the relationship between fixed assets and sales. A higher FATO ratio indicates that the company has been more effective in using the investment in fixed assets to generate their sales (Warrad and Omari, 2015).

Another measurement of cost efficiency is Account Receivable Turnover (ARTO) (Nuhu, 2014). ARTO ratio also can be used in measuring asset management ratio. ARTO can give the information of the how many times the company's account receivable are generated and collected during the year. However, the analysis of receivables turnover ratio in terms of credit policy management is two-tier in nature (Gorczynska, 2011).

Besides the ITO, TATO, FATO and ARTO above, capital expenditure (CAPEX) and operating expenditure (OPEX) is another measurement of cost efficiency. As stated in The Red Book, Procurement Guidelines and Best Practices (2006), these two ratios (CAPEX and OPEX) were used to measure the cost saving of the GLCs in their performance after using TCO in their procurement process. In fact, (Ritsma, Tuyl, and Snijders, 2009) put the CAPEX and OPEX in defining the TCO. In order to excel in OPEX and CAPEX management, full cost transparency must be established in order to identify, prioritize and optimize additional saving measures (Little, 2009).

2.2 Total Cost of Ownership and Financial Performance

There are many literatures about the TCO. But most of the previous researches are in case study method. Most of the previous researches also about relation of TCO in procurement and supply chain.

The phrase 'Total Cost of Ownership' was originally developed by Bill Kirwin, director in Gartner Inc., by referring to all the costs associated with the use of computer hardware and software (Uyar, 2014). These costs are including the administrative costs, license costs, deployment and configuration, hardware and software updates, training and development, maintenance, technical support and any other costs associated with acquiring, deploying, operating, maintaining and upgrading computer systems in organizations.

Notably, Total Cost of Ownership (TCO) analysis had been widely used in purchasing of computing system since late 1980s. During that time, Information Technology (IT) industry analysts began publishing studies showing very large difference between IT systems prices and systems costs. Today, TCO analysis supports purchase decisions for a wide range of assets, not only focusing on IT assets. These include especially assets with large maintenance and operating costs across ownership life. TCO is therefore centre stage when leaders face purchase decisions, for examples for large IT systems, vehicles, buildings, laboratory equipment, medical equipment, factory machines and private aircraft.

There are several definitions for Total Cost of Ownership (TCO) in the academic researches but most of them have a common denominator. In essence, the broader view of TCO is used to identify the true cost of purchasing and using a product or service from a supplier. As the main goal of TCO

analysis is to better purchasing decision, so the company should consider the cost issues beyond the price. Anna Bladh (2008) defined TCO as all costs categories such as cost of acquisition (COA), cost of ongoing production (COP), cost of maintenance (COM), cost of downtime (COD) and cost of disposal (CVOD). Generally, she defined TCO = COA + COP + COM + COD + CVOD.

Another definition of TCO are (Ellram, 1994) defines TCO as "an innovative philosophy aimed at developing an understanding of the true cost of doing business with a particular supplier for a particular good or service", Degraeve and Roodhoft (1999) define TCO as attempting "to quantify all of the costs related to the purchase of a given quantity of products or services from a given supplier." Alternatively, Wouters et al. (2005) see TCO as "an application of activity based costing (ABC) that quantifies the costs that are involved in acquiring and using purchased goods and services.", with Garfamy (2006) stating that TCO "focuses on the true costs associated with the entire purchasing cycle, thus it considers all costs related to the acquisition, usage, maintenance and follow-up of purchased goods or service as well as purchasing price."

In the event that TCO is considering all the costs involved in procuring items, a thorough analysis before the selection of suppliers may increase the performance of the company. A case study by Uyar (2014) showed by applying TCO concept in the purchasing, the company experienced increasing in gross profit margin, net profit margin and earning per share. Thus it shows TCO affects firm profitability performance positively and total costs are minimized.

In more understanding about TCO, there are several components in the TCO. The components or costs involve on the TCO are installation and maintenance (in case of equipment acquisition), training, inventory, handling, and disposal at the end of life (H. Tran, 2017). These components are simplified in the **Error! Reference source not found.** below.

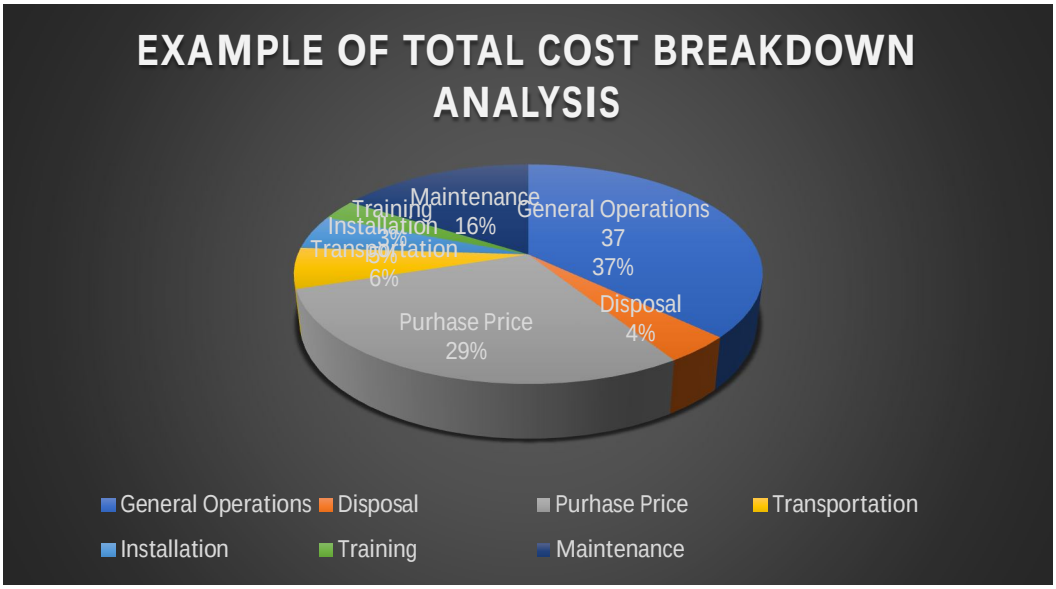

Figure 0.2 : Example of Total Cost Breakdown Analysis

TCO should include both direct and indirect costs, in addition to all monetary benefits correlated with all aspects in the initial purchase, continual use and maintenance, when applicable, of the good or equipment or service. These costs are considered standard costs, which have been planned for a particular manufacture at a pre-defined point of time. They are used as benchmarks for determining the operational budgets, as well as setting goals for cost reduction (Tran, 2017).

TCO has been nominated for the assessment and selection of suppliers (L. M. Ellram, 2005; Garfamy, 2006; Zachariassen and Arlbjoslashrn, 2011), since this method looks beyond the purchase price and encompasses a broader range of direct, indirect, as well as contingent and less quantifiable costs in procurement decisions, providing a more inclusive overview of all costs associated with the acquisition of a particular product or service. TCO concept provides many benefits to the companies. Ellram (2005) has summarized the benefits of adopting a TCO approach are that TCO analysis may provide a consistent supplier evaluation tool, improving the value of supplier performance comparisons among suppliers and over time; helps clarify and define supplier performance expectations both in the firm and for the supplier; provides a focus and sets priorities regarding the areas in which supplier performance would be most beneficial (supports continuous improvement), creating major opportunities for cost savings; improves the purchaser's understanding of supplier performance issues and cost structure; provides excellent data for negotiations; provides an opportunity to justify higher initial prices based on better quality/lower total costs in the long run; and provides a long-term purchasing orientation by emphasizing the TCO rather than just price.

As explain before, TCO is one of the accounting tool in managing and analysing the cost. Previous research has been proved by Wahdan and Emam (2017) that the use of responsibility accounting leads to the efficient use of the budget and better control over the direct costs variances. Therefore, an accounting tool which is TCO is needed by the company as moderator or enabler in managing the costs efficiently.

On top of that, TCO concept can reduce the cost and hence increase the financial performance of the company. A case study by (Bangalore, 2004) found that by implement the TCO concept in the procurement of wagon, the cost of ownership of wagon for six years is almost eight times its initial procurement price. It shows the impact of using TCO before procurement decision can be made and not only depend on the procurement cost only.

3.0 The Conceptual Framework

For this study, the dependent variable is financial performance which will be measured by Return on Asset while the independent variable is cost efficiency which consist of Total Asset Turnover, Fixed Asset Turnover, Inventory Turnover, Account Receivable Turnover, Capital Expenses and Operating Expenses. Moderating variable which consider the contribution to this study is Total Cost of Ownership.

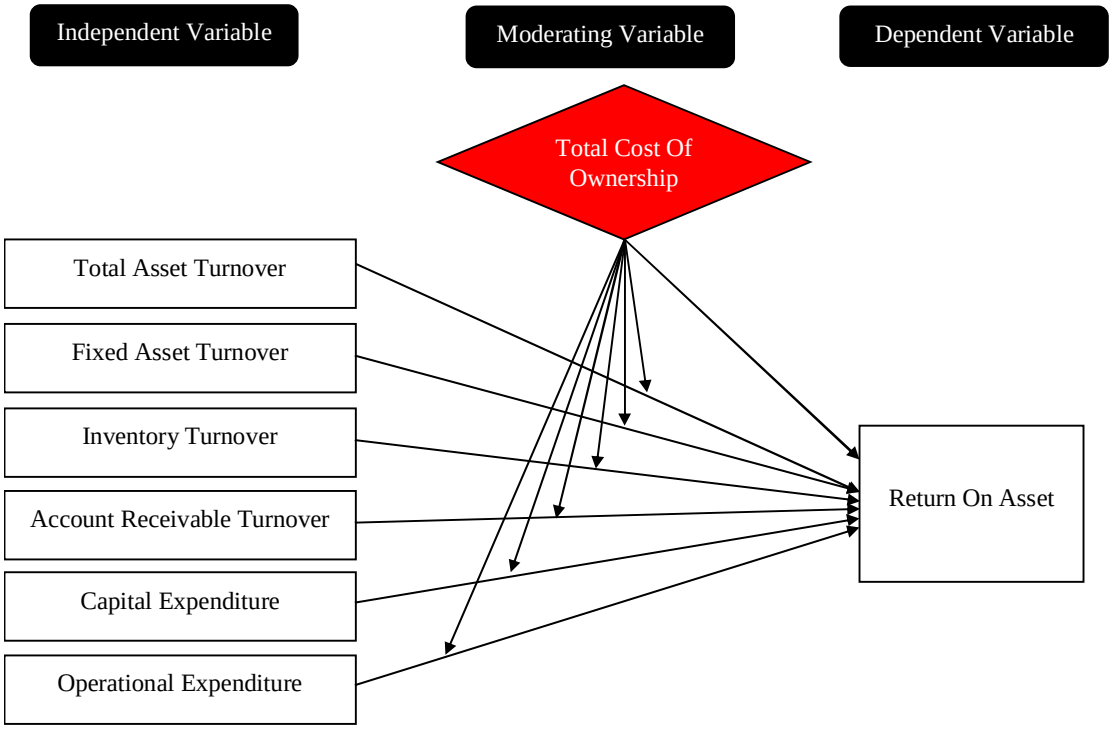

Figure 3.3 : Conceptual Framework

4.0 Summary and Concluding Remarks

This paper has reviewed the relevant literature and the considerable argument about the role of TCO in the performance of GLCs. In ensuring the increasing of their performance especially in related to the procurement, TCO should be considered in making their cost efficient.

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