



Supply chain management, activity-based costing and organisational factors

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ABSTRACT

In today's intense global competition, supply chain management (SCM) is as a vital tool for helping managers to improve productivity, profitability and the performance of their organisations. In doing so, SCM requires more accurate cost data regarding all activities and processes within the organisations. Given the above, activity-based costing (ABC) can significantly contribute to global supply chain management as it is suggested to fulfil the above requirements by providing more accurate, detailed and up-to-date information on all activities and processes in organisations.

Contributing to the SCM and ABC literature, current study first identifies different types of improvements which ABC can offer to SCM and the performance of the organisations, then it examines the extent of association between business size as well as business industry (as organisational factors) affecting the adoption of ABC in New Zealand (NZ) through using a survey questionnaire and targeting NZ qualified CIMA members. To improve SCM and organisations' performance by increasing the adoption of ABC in organisations, one of the main implications of the findings is that the adoption of ABC in smaller firms needs more attention compared with the larger firms regardless of their industries (manufacturing versus non-manufacturing firms). However, when the decision is made to implement ABC, non-manufacturing firms (rather than manufacturing firms) need more attention to proceed with a higher level of adoption of ABC.

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1. Introduction

Supply chain management (SCM) can be considered as a key component of competitive strategy to enhance organisational productivity, performance and profitability (Gunasekaran et al., 2004). Given the above, according to Gunasekaran et al. (2004), managers in many industries are trying to make better use of SCM by implementing a variety of different techniques such as just-in-time (JIT), total quality management (TQM), lean production (LP),

computer generated enterprise resource planning schedule (ERP), Kaizen and activity-based costing (ABC). Among recently developed techniques (such as above), ABC can be considered as one the most talked about techniques for improving SCM and performance in organisations (Baykasoglu and Kaplanoglu, 2008; Ben-Arieh and Qian, 2003; Gunasekaran and Sarhadi, 1998; Kee, 2008; Qian and Ben-Arieh, 2008; Singer and Donoso, 2008; Tornberg et al., 2002; Tsai et al., 2008).

Integrating ABC and SCM, Lin et al. (2001) describe ABC as a complex costing system that assists managers in making important strategic business decisions. They emphasise that every aspect of decision making process in SCM requires cost data. This highlights the significance of the relationship between ABC and SCM. Given the current intense global

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competition, they also believe that the extent of the importance of cost data in SCM filed as well as the integration between ABC and SCM will increase in the near future.

Highlighting the extent of the integration between ABC and SCM, an accumulated body of literature have specified a variety of contributions which ABC is providing to SCM in organisations such as: 'cost reduction', 'cost estimation', 'performance measurement', etc. (Baykasoglu and Kaplanoglu, 2008; Charles and Hansen, 2008a,b; Homburg, 2005; Qian and Ben-Arieh, 2008; Satoglu et al., 2006; Thyssen et al., 2006). However, despite the vital role of ABC in improving the organisations' performance and their SCM, the adoption of ABC is not highly prevalent after almost 25 years since its introduction (Al-Omiri and Drury, 2007b; Askarany and Smith, 2008; Askarany and Yazdifar, 2007). Adopting the diffusion of innovation theory, a number of studies have investigated the relationships between the adoption of ABC and a variety of contextual factors. However, very few studies examined the adoption of ABC as a process (e.g. a set of different adoption levels) and paid adequate attention into the detailed adoption steps of ABC (Brierley et al., 2006). Indeed, the adoption of ABC include performing a number of different activities (such as activity analysis, allocation of costs to cost pools, and allocation of cost pools to products/services), while most of the literature on SCM and ABC have looked at the ABC adoption as one stage process (e.g. adoption versus not adoption) and made no distinction between different adoption levels. So, it is not clear if any particular stage/level of adoption of ABC need more attention (in order to facilitate its diffusion in organisations).

Furthermore, though very few studies have dealt with the relationship between adoption stages/levels of ABC and organisational factors (such as size and organisational industry), their findings have been mixed and inconsistent (Al-Omiri and Drury, 2007b; Baird, 2007; Brown et al., 2004; Cohen et al., 2005; Innes and Mitchell, 1995; Libby and Waterhouse, 1996).

Considering the contribution of ABC to SCM in organisations, examining the extent of the relationship between adoption stages/levels of ABC and organisational factors (such as organisational size organisational industry) could lead to the recognition of factors facilitating or hindering different adoption stages/levels of ABC and therefore could result in improved organisational productivity, performance and profitability. In doing so, current study examines the extent of the association between business size as well as business industry and the diffusion of ABC (stages/levels) in New Zealand through using a survey questionnaire and targeting more or less similar respondents (qualified CIMA members). The remaining of this paper is organised as follows: Section 2 provides a background to the research questions. Section 3 discusses research method, Section 4 presents our empirical results and Section 5 concludes the study.

2. Background

Contributing to the SCM and ABC literature, this section first highlights different types of improvements

which ABC can offer to SCM and the performance of the organisations. Following the significance of the integrations between SCM and ABC, the current section demonstrates the controversy on the extent of association between business size as well as business industry (as organisational factors) and the adoption of ABC. Given the above, then it suggests relevant propositions which their examinations could lead to the recognition of factors influencing the adoption of ABC and therefore could result in improved organisational productivity, performance and profitability by contributing to the higher levels of the adoption of ABC.

An accumulated body of the literature suggest that ABC can contribute to SCM and organisational performance from many different perspectives (Baykasoglu and Kaplanoglu, 2008; Charles and Hansen, 2008a,b; Homburg, 2005; Qian and Ben-Arieh, 2008; Satoglu et al., 2006; Thyssen et al., 2006). For example, Baykasoglu and Kaplanoglu (2008) suggest that ABC can improve organisational performance as follows: helping organisations to become more efficient and more effective; providing organisations with a clear picture of where resources are being spent, customer value is being created, and money is being made or lost; offering organisations a better alternative to volume-based product costing; identifying value-added activities and eliminating or reducing non-value added activities.

Supporting the above suggestions, Tsai et al. (2008) explain that ABC provides organisations with an understanding of cause and effect relationship between costs and the demands for activities within a process leading to better organisational performance. They further emphasise that traditional cost accounting can distort product costs in advanced manufacturing environments especially when overhead costs are a significant portion of total costs of products or services. According to Tsai et al. (2008), ABC can improve the accuracy of processes and products' cost data and obtain the highest long-term profit by exercising complete control over overhead resources in organisations.

Kee (2008) suggests ABC can be used as a tool for decision making especially for product mix costing and pricing decisions. Further to the above advantages, Qian and Ben-Arieh (2008) consider ABC as a more accurate cost-estimation method. They argue that ABC can help managers to become aware of original parameters that create demands on indirect and support resources and therefore can identify and remove non-value-adding activities. According to Ben-Arieh and Qian (2003) and Qian and Ben-Arieh (2008), the ABC approach has demonstrated to be more accurate than the traditional cost estimation. Testing the validity of ABC cost estimation, Singer and Donoso (2008) examined the accuracy of ABC in terms of real indirect cost versus its forecast with ABC and concluded that the accuracy of estimation of costs made by ABC was valid.

With regards to the current competitive environment and product diversity, there should be no doubt that accurate product-cost information is critical for decision makers in organisations. In line with the above argument, Charles and Hansen (2008b) recommend ABC as true

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