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Analysis of Strategic Costing Effect towards University Performance with Competitive Advantage as Mediating

E Marlina[1], H A Ardi[2] and S Samsiah[3]

Faculty of Economics and Business, Muhammadiyah University of Riau

*Corresponding Email : evimarlina@umri.ac.id

Abstract. This study aims to examine the effect of Strategic Costing on organizational performance through competitive advantage as moderating variables in private universities in the city of Pekanbaru. The samples in this study are 39 universities in the city of Pekanbaru. This research deploysa survey by distributing questionnaires to the head of the finance department and then the data is processed using path modeling analysis techniques with PLS tools. From the research conducted, the researchers found that strategic costing directly affects the performance of universities and indirectly competitive advantage mediates the strategic costing relationship to the performance of universities in the city of Pekanbaru.

1. Introduction

1.1 Background

Higher Education is an institution engaged in educational services to produce quality human resources, where the management process must take into account various aspects of its resources, one of which is the financial aspect. The financial aspect is about income and costs. In principle, to be able to operate properly, the income earned by universities must be greater than the costs incurred.

In general, university income is easy to predict, but not the cost. To anticipate cost uncertainty, an instrument is needed which is known as strategic costing. Through strategic costing, universities will be able to carry out educational, teaching, research and community service activities effectively and efficiently as competitive advantages that can ultimately improve the performance of universities.

According to Aykan and Aksoylu (2013), strategic costing is part of the SMAT. Strategic costing is the use of market-oriented strategies and costs to prioritize and develop strategies that can provide sustainable competitive advantage. Strategic costing itself can be measured through 5 indicators; including activity based costing, target costing, value chain costing, quality costing, and lifecycle costing (Cadez and Guilding, 2008).

Research on the relationship of strategic costing to performance shows some contradictory results. This study aims to determine the direct effect of strategic costing as a strategic management accounting directly on the performance of universities and the indirect effect of strategic costing on the performance of universities with mediating variables of competitive advantage.

2. Conceptual Framework and Literature Review

2.1. Contingency theory

The basic thesis of the contingency approach is that there is no concept or design of the entity that will be applied universally anywhere or under any conditions effectively (Otley, 1980). An entity design is only suitable or fit for a particular context or condition. The use of a contingency approach encourages researchers to identify suitable conditions for the design of certain entities and develop theories that support them (Riyanto, 1999). Contingency theory identifies optimal forms of entity control under different operating conditions and explains how operating procedures control the entity.

2.2. Institutional Organization Theory

To achieve competitive advantage, paying attention to external factors of the entity is a must. In the I/O theory, it is explained that external factors (industry) are more important than internal factors in the entity to achieve competitive advantage. The main concern in I/O theory is competition. Strength structure analysis in competition, which is better known as the Five Forces Model (Porter, 1985) becomes an important thing. There are five things in the Five Forces Model, namely: (1) Competition among similar entities, (2) Possibility of new competitors to come, (3) Potential of developing substitute products, (4) Bargaining strength of sellers/suppliers and (5) Bargaining strength of buyers/consumer.

2.3. Strategic costing relationship with university performance

Strategic cost management is defined as the use of market-oriented strategies and costs as well as data to prioritize and develop strategies that can provide sustainable competitive advantage (Cadez and Guilding, 2008). Aksoylu and Aykan (2013) divide strategic costing in 5 dimensions, namely:

1. *Activity based costing* (ABC)
   Activity Based Costing is an analytical technique that allocates factory overhead costs to production activities (Alnawayseh, 2013).
2. *Value chain costing*
   Value chain costing is an analytical technique to add value to customers by reducing costs, and understanding the relationship between company business and customer needs (El-Dyasty, 2007).
3. *Target costing*
   Target costing is a cost that can be charged to the company in accordance with competitive prices, which can be used to achieve the desired profit (El-Dyasty, 2007).
4. *Lifecycle costing*
   Lifecycle costing technique is defined as the result of the calculation of all costs of a product during the product life phase
5. *Quality costing*
   Quality costing is the cost of detecting and improving the quality of goods and services (Hansen and Mowen, 2006). Jaju and Lakhe (2009) in the journal of (Kirlioglu and Cevik, 2013) divide quality costs into 3 main parts, namely PAF (Prevention-Appraisal-Failure).

If the higher education institution has a strategic costing, of course the operational costs of both the direct cost group and indirect costs are issued based on the activity so that it is easier to control. Thus the costs that have no added value will be lost on their own so that operational costs are more efficient and effective and ultimately the performance of the organization will increase. This is in line with research findings where costing strategies have a positive effect on organizational performance (Zaman, 2009; Arasteh and Dalfard, 2011; Griffith, 2006; Saaydah and Khatatneh, 2014: Aykan, E and Akso, 2014; Shinta and Devie, 2015)
H1: Strategic costing has a positive effect on university performance.

2.4. Strategic costing relationship with competitive advantage

Strategic costing is the use of strategies and costs as well as calculated data that is customer oriented so that the organization can maximize its resources to produce quality products or services that can ultimately meet customer satisfaction. Thus the strategic costing can maintain the sustainability of the organization because the product or service provided is superior in competition. This is in line with the results of research that costing strategies have a positive effect on competitive advantage (Gecevska, 2010; Reed, Lemak and Mero, 2000; Ghafeer et al, 2014; Ghatebi et al, 2013; Shinta, and Devie 2015).
H2 : Strategic costing affects the competitive advantage

2.5. Competitive advantage relationship with university performance

Competitive advantage is the advantage gained from competitiveness by giving consumers a higher value, either at a lower price or providing greater benefits and services at a higher price (The International School of Management, 2012). According to Porter (1985), there are 2 strategies that can be used to create competitive advantages, namely:

1. *Cost leadership*
   Cost leadership can be defined as the company's efforts to produce excellence by achieving the

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lowest costs in the industry.

2. *Differentiation*

   Porter (1985) said that competitive advantage is related to the development of attributes that can give characteristics to the company and provide different values from competitor products.

Competitive advantage is giving more value than the product or service provided to the customer so that the product or service gives satisfaction to the customer. Thus, it will guarantee the sustainability of the organization and ultimately can improve organizational performance. This is in line with the results of competitive advantage research that has a positive effect on organizational performance (Tuan and Yosi, 2010; Shinta and Devie, 2015; Aksoylu and Aykan, 2013)
H3 : Competitive advantage affects the university performance

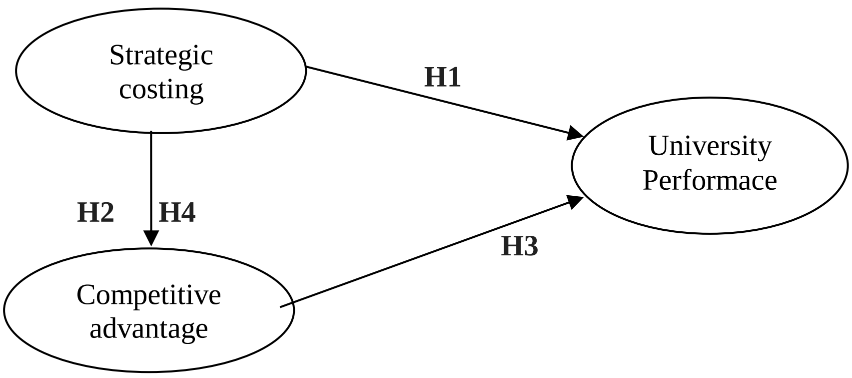
2.6. Competitive advantage mediates the relationship of strategic costing with university performance
Integrating the logic of the argument above, the researchers hope that the strategic costing will occur positively related to competitive advantage, and so will the excellence of competition with university performance. In addition, the researchers place mediation between the strategic costing relationship, competitive advantage, and university performance.

Regarding mediation offer, Hayes (2013) as well as Baron and Kenny (1986) explained that mediation tests determine the existence of a significant intervention mechanism (in our case it is a competitive advantage) between a predictor variable (strategic costing) and a result variable (university performance). Thus, mediator variable (ie, competitive advantage) contributes to a significant proportion of the relationships between predictors and variable (outcome) criteria. As discussed above, the competitive advantage perspective provides a theoretical explanation for the mediating effect of the costing and university performance relationship. Strategic costing offers opportunities for organizations to manage their resources more effectively and efficiently so that operational activities are more directed and in line with the targets to be achieved both short and long term. In addition, strategic costing provides learning to organizations in managing costs considering the potential and weaknesses they have. The learning in organizational management is very valuable because every cost incurred will provide added value for the quality of the product or service so that customer satisfaction will increase. Thus strategic costing encourages organizations to realize quality products or services that will enhance competitive advantage and ultimately improve organizational performance.

Empirical research provides evidence for the mediating effect of competitive advantage between strategic costing and university performance. Research findings revealed that competitive advantage affects performance (Tuan and Yosi, 2010; Shinta and Devie, 2015; Aksoylu and Aykan, 2013. Based on the previous researches, it can be concluded that this relationship could also apply to competitive advantage. As previously mentioned, competitive advantage has a positive effect on competitive advantage, and strategic costing is positively related to competitive advantage. Therefore, it can be said that the implementation of competitive advantage can provide an organizational management to interprete the strategic costing effect on university performance.

H4 : Competitive advantage mediates the relationship of strategic costing with university performance.

The conceptual framework is as follows:



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3. Research Methodology

3.1. Contex of Study

Pekanbaru is a very appropriate context to test the hypothesis of this research, because the number of private higher education in the city of Pekanbaru has increased every year, which has caused competition. The high impact of the number of tertiary institutions is the emergence of a level of competition that in the end, in order for the tertiary institutions to continue to exist, there needs to be an effort or strategy in management to be effective and efficient, which in turn can improve the performance of the university, especially in the cost called strategic costing. In implementing the strategic costing as a strategic management accounting technique, the institution strives to realize operational costs consisting of education and teaching, research, service and other operational costs effectively and efficiently. Here we discuss briefly some strategic costing attributes including actvity based costing, life cycle costing, quality costing, target costing, and value chain in managing organizational costs by considering the resources that are owned to run more effectively and efficiently so as to increase competitive advantage and the university performance.

3.2. Population and Sample

The population of this study is the leaders, heads of finance and financial staff at private universities that are included in LL Dikti Region X. While the samples we choose are private universities in the city of Pekanbaru totaling 39 universities. Data was collected using questionnaires and online surveys targeted at the head of the finance department. Data collection took place between February 2018 and April 2018. The main respondents are the head of finance. The questionnaires were distributed directly and online surveys were conducted. Questionnaires sent were 117 while received back as many as 100 (84.47%). From the questionnaire received, not all questionnaires can be analyzed because as many as 3 questionnaires returned are incomplete or returned empty. Questionnaires that can be further processed are 97 questionnaires or 82.90% of the total questionnaires distributed. We tested the conceptual model proposed using variance-based structural equation modeling (SEM).

3.3 Measurement

We build three latent variables, namely strategic costing, competitive advantage and university performance, using a multi-item scale. The validity and reliability of the steps are supported by a comprehensive literature review, interviews with university leaders. Based on feedback and insights from interviews with leaders, the words of some items are slightly modified to adjust items to the Kopertis Region X situation and condition. To measure strategic costing, Aksoylu and Aykan (2013) with 9 point Likert-type 5 scale questions 5- points ranging from "strongly disagree" (1) to "strongly agree" (5) is adopted. Competitive advantage is measured by seven items, adapted from porter (1985) 5 on a 5-point Likert-type scale question starting from "strongly disagree "(1) to" strongly agree "(5). Furthermore, to measure the performance of universities, we adapted from Loddy 2014 with a 6-point Likert scale question ranging from "strongly disagree" (1) to "strongly agree" (5). All multi-item scales are reported.

3.4. Data Analysis

The focus of this research is to examine the effect of competitive advantage on the relationship between strategic costing and university performance. Tests carried out include direct testing and indirect testing for each variable.

3.4.1. Direct Effect Test

The direct effect test is intended to test the relationship between strategic costing and university performance.

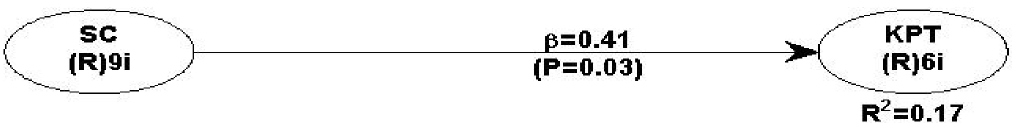

Figure 1 : Direct relationship model of strategic costing and university performance

In Figure 1 the resulting path coefficient is positive that is equal to 0.41 with p-value less than 5%. This means that SC has a significant positive effect on KPT, namely the better the SC, the better the KPT. Therefore, the H1 hypothesis is accepted. Meanwhile, the value of the Effect Size produced is 0.17 which indicates that SC has an influence on KPT which means that SC has a role to increase KPT. The magnitude of the effect of SC on KPT can be seen from the value of Rsquared Coefficients that is equal to 0.17 which means that the influence of SC on KPT is 17%.

3.4.2. Indirect Effect Test

The indirect effect test is intended to test the relationship between strategic costing and university performance through mediating variables of competitive advantage

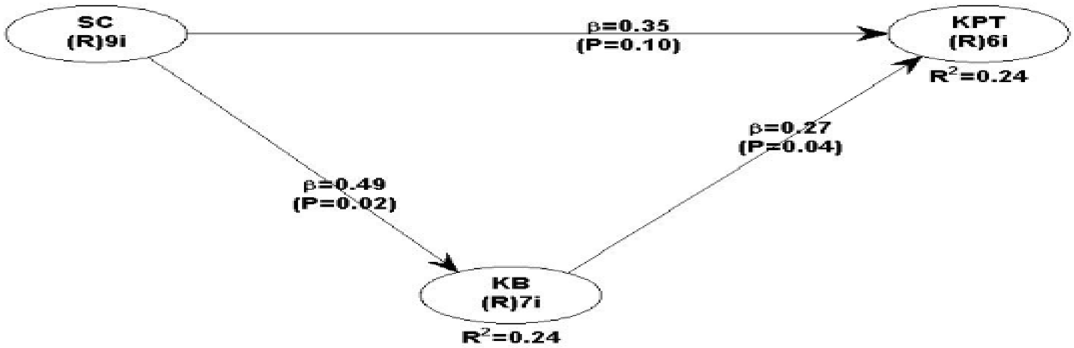

Figure 2 : Competitive advantage mediates the relationship of strategic costing with university performance

The indirect effect model shown in Figure 2 shows that the direct effect of strategic costing on university performance is statistically p-value greater than 5% with the path coefficient value decreasing to 0.35. From the identification of these three pathways, competitive advantage (KB) mediates simultaneously the relationship between costing strategies (SC) and university performance (KPT). This is because the significant mediation pathway is competitive advantage and the relationship of costing strategies to university performance is insignificant. Next, testing the mediation effect for the hypothesis is proposed in this study. If one mediating variable relationship or both is not significant, then it is said not as a mediating variable (Solimun, 2011; Hair et al., 2010; Kock, 2010, 2011, 2014).

The hypothesis in this study is that strategic costing affects the performance of higher education that is mediated by competitive advantage. The mediating effect of competitive advantage on the relationship of strategic costing (SC) with higher education performance (KPT) statistically at the 5% significance level can be seen from the following path:

(a) Strategic costing (SC) affects competitive advantage (KB) and is statistically significant at the 5% level with a coefficient of 0.49.
(b) Competitive advantage (KB) affects the performance of university (KPT) statistically at a significance level of 5% with a coefficient of 0.27

Therefore the hypothesis of H1 and H3 is accepted.

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