

# Relationship between Management Accounting Innovations and Cost Performance in University

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**Abstract**—This study aims to examine the effect of management accounting innovation variables on cost performance in private universities in the provinces of West Sumatra, Riau, Riau Islands and Jambi in Indonesia. This study uses a quantitative approach in explaining the relationship between variables. Data is obtained through questionnaires from 167 heads of higher education finance and then is processed using partial least square (PLS). The results of the study indicate that management accounting innovation significantly influences the cost of performance diversity. This research contribution develops research related to cost performance and management accounting innovation. The implication of the research provides input for the management of higher education costs, especially private tertiary institutions, in improving their cost performance through management accounting innovation. The limitation of this research is only focusing on private universities in West Sumatra, Riau, Riau Islands and Jambi. Therefore, the results cannot be generalized in other regions.

**Keywords**—*Cost performance of university, management accounting innovation*

## I. INTRODUCTION

Education reform is quite successful. This can be seen from the increasing number of tertiary institutions, both public and private. On the one hand, there are many choices for consumers and on the other hand, especially in private universities, this will certainly emerge competition. The development trend of private universities today is quite a concern. Based on data from LL Dikti X, there are 22 private universities that have been deactivated (Antara News, 2015). In addition, the number of student admissions in active universities from year to year tends to decrease. This is of course a major problem for universities in carrying out its operational activities because the majority of income sources for private universities come from student contributions. The decreasing number of students certainly results in reduced income for the tertiary institution, while the amount of operational costs incurred from year to year tends to increase. Therefore, private tertiary institutions need to be improved both internally and externally to maintain the sustainability of the organization. Externally tertiary institutions need to improve quality in its services in producing human resources who are able to compete in the

labor market, while internally the management of higher education resources must be effective and efficient, especially in managing the organization's operational costs.

One of the effective and efficient management of organizational operational costs can be seen from the cost performance. Cost performance is the ability of organizations to reduce costs in operational activities (Esfahbodi, Zhang, & Watson, 2016; Love, Zhou, Edwards, Irani, & Sing, 2017; You & Jie, 2016). Higher education which is an education industry engaged in the field of educational services certainly have expenses to finance the main activities of the organization namely teaching, research and community service. Furthermore, supporting activities include administration, library and others. The cost of higher education will be seen from the ability of organizations to reduce operational costs related to the main activities and supporting activities of higher education.

In improving the cost performance of the university, tips on optimally managing organizational resources are certainly needed in that conventional management accounting has limitations in dealing with the conditions of information technology that continues to develop. Therefore, a new way of managing information in organizations called management accounting innovations (MAI) was introduced. MAIs such as activity based costing, the balanced score card, strategic management accounting, target costing, and the beyond budgeting approach, have succeeded in producing impressive research on performance improvement (Ax & Greve, 2017; Chiwamit, Modell, & Scapens, 2017; Foster, 1992; Maiga, Nilsson, & Ax, 2015). The innovative accounting management approach is very helpful for the optimal achievement of university cost performance which must be directly proportional to the achievement of the organization's vision and mission.

Our study results in contributing to the perspective of organizational learning (Levitt & March, 1988), where we found that management accounting innovations have a positive effect on cost performance and the research findings have theoretical and practitioner relevance. Theoretically, the research findings enrich the literature on management accounting innovation and cost performance in tertiary institutions. In this study, cost performance is defined as organizational cost performance, measured

through indicators such as cost reduction measured from the educational, research and community service aspects. Practically, this research contributes in providing initiatives to private universities, especially in LL Dikti X to implement management accounting innovation. In addition to increasing the cost performance of the organization, it can develop strategies to improve sustainability in the management of higher education.

## II. CONCEPTUAL FRAMEWORK AND LITERATURE REVIEW

### A. Contingency theory

The basic concept of the contingency approach is that no entity concept or design can be universally applied anywhere or under any conditions and effectively (Otley, 1980). An entity's design is only suitable for a particular context or condition. The use of a contingency approach encourages researchers to identify conditions that are appropriate for the design of a particular entity and then develop theories that support it. Contingency theory identifies optimal forms of entity control under different operating conditions and explains how the operating procedures are for such control (Hariyati&Tjahjadi, 2018).

Otley (1980) stated that the contingency approach can explain why accounting systems can differ from one condition to another. Based on his research findings, it was concluded that there are three concepts that affect the effectiveness of the accounting system, namely (1) technology, (2) entity structure, and (3) environment. Contingency approach to accounting management is based on the premise that no universal accounting system is always appropriate to be applied to every entity, but this depends on conditions or situations that exist in the entity.

### B. Relationship between management accounting innovation and cost performance

We develop hypotheses about the relationship between management accounting innovation and cost performance. Management accounting is an accounting information system about the organization's economic activities to those involved in the organization's operational activities for decision making where the cycle consists of input in the form of transaction evidence, the process of recording and summarizing and output in the form of a budget, product costs, etc. Along with the development of information technology, management accounting that is more oriented only to the internal organization is considered irrelevant. Therefore, an innovation is needed which is recognized as an opportunity to achieve profits and decision makers believe that innovation has the potential to do so (Love & Cebon, 2008) called Management accounting innovation. Management accounting innovations include activity based costing, the balanced score card, strategic management accounting, target costing, and the beyond budgeting approach (Ax & Garave, 2017).

Likewise, cost performance is the ability of organizations to reduce costs in operational activities (Esfahbodi et al., 2016; Love et al., 2017; You & Jie, 2016). Next, we turn the general conceptual model into a hypothesis. Cinta and Cebon (2008) reported that

compatible companies generally adopt innovations earlier than incompatible companies. This literature provides some support for this observation that management accounting innovation influences cost performance. For example, because the BSC emphasizes the importance of analyzing cause-effect relationships (Ax & Grave, 2017), the implementation of BSC is more possible to provide data for decision making compared to companies where management accounting is conventional so that cost performance increases (You & Jie, 2016). Based on this reason, the following hypothesis is tested:

H: Management accounting innovation influences cost performance

The conceptual framework is as follows:

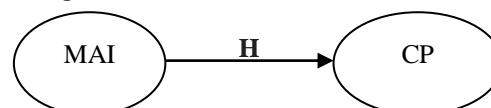


Figure 1 : conceptual framework

## III. RESEARCH METHODOLOGY

### A. Context of Study

Indonesia especially LL Dikti X is a very appropriate context to test the hypothesis of this research because it has succeeded in carrying out reforms in the field of education which can be seen from the large number of higher education, especially those owned by the private sector. As a result of the high number of tertiary institutions, the emergence of a level of competition that ultimately in order for the tertiary institution to exist still needs an effort or strategy in managing the organization to be effective and efficient, which in turn can improve the performance of the tertiary institution, especially in terms of costs called cost performance. In implementing the strategy of higher education organizations especially in realizing operational costs consisting of education and teaching, research, service and other supporting operational costs effectively and efficiently, management accounting innovation plays its role. Here we briefly discuss several management accounting innovation approaches, namely activity based costing to determine costs, balance scorecards to measure performance, target costing to determine tuition fee, and beyond budgeting approach for matters related to activities to be carried out at the tertiary institutions.

### B. Sample

The study population was the head of finance at private universities throughout Indonesia, while the sample chosen was private tertiary institutions included in the LL Dikti region X covering the provinces of West Sumatra, Riau, Riau islands and Jambi which amounted to 247 tertiary institutions. Data were collected using online questionnaires and surveys targeted at the head of finance. Data collection took place between March 2018 and May2018 where the respondents were the head of finance. Delivery of questionnaires consists of directly to 21 universities in the city of Pekanbaru and online to 226 universities. Furthermore, from 175 (70.85%) returned questionnaires, only 167 questionnaires or 67.61% of the total

questionnaires that can be further processed. We tested the proposed conceptual model using variance-based structural equation modeling (SEM).

### C. Measurement

We construct two latent variables, namely management accounting innovation and cost performance, using a multi-item scale. The validity and reliability of the steps is supported by a comprehensive literature review and interviews with university leaders. Based on feedback and insight from interviews with leaders, the words of some items were slightly modified to adapt the items to the Indonesian context. Management accounting innovation is measured by five items, adapted from Christian (2014) 5-point Likert-type scale questions ranging from "strongly disagree" (1) to "strongly agree" (5). Furthermore, to measure cost performance, we adapted from Zhu et al (2014) with 5-point Likert scale questions ranging from "strongly disagree" (1) to "strongly agree" (5) and all multi-item scales were reported.

## IV. DATA ANALYSIS

The focus of this study is to examine the effect of management accounting innovation on cost performance. Tests carried out include testing data and testing hypotheses.

### A. Assessing the Outer Model or Measurement Model

An indicator is said to meet convergent validity if it has a loading value above 0.5. The following results of convergent validity for the variable management accounting innovations and the highest cost performance can be seen in the appendix of management accounting innovations and the cost performance where from each of the 5 indicators, only 4 above 0.5. Then the indicator is continued to the next step.

### B. Discriminant Validity

The measurement of discriminant validity is assessed based on the measurement of cross loading with the construct of management accounting innovations with indicators (MAI1, MAI2, MAI3, MAI4) in which it is also higher than the cost performance indicator. This also applies to the university cost performance construct correlations (CP1, CP2, CP3, CP4) which show higher results in management accounting innovations. Therefore, it can be said that the latent construct of management accounting innovations and cost performance can predict indicators on their blocks better than other block indicators.

In addition, the validity discrimination test can also be assessed with the root average variance extracted (AVE) for each construct and compared with correlations between constructs.

Table 1: Correlation between constructs and AVE

	MAI	CP	AVE	√AVE
MAI	1.000		0.524	0.723
CP	0.037	1.000	0.462	0.679

Source: PLS processed data

Based on table, it can be seen that the root value of AVE management accounting innovation is 0.723 higher than AVE which is 0.524. This also occurs with the AVE cost performance root of 0.679 which is higher than AVE of 0.462 and higher than the construct correlation of 0.037. Based on the explanation above, the model has good

discriminant validity because the AVE roots of each construct are greater than the correlation between constructs and other constructs.

### C. Composite Reliability

Composite reliability tests the value of reliability between the indicator blocks of the construct that forms it.

Table 2: Composite reliability

	Composite Reliability
MAI	0.773
Cost performance	0.770

Source: PLS processed data

Based on table 2, it can be seen from the output that the composite reliability for variable management accounting innovations is 0.773 and variable cost performance is 0.770, where both values are greater than 0.6. Thus the model in this study has met the Composite reliability.

### D. Structural Model/Inner model

The inner model or structural model is then performed by looking at the percentage variance described by looking at R<sup>2</sup> for the latent dependent construct, the Stone-Geisser Q-square test and also the magnitude of the structural path coefficient. Based on data processing by PLS, the determinant coefficient (R-square) is produced in the table below:

Table 3: R-Square

	R-Square
Cost performance	0.167

Source: PLS processed data

In table 3, it can be seen that this research model with the R - square value generated at cost performance is 0.167 which means that the influence of management accounting innovations on cost performance is 16.7%.

### E. Hypothesis Testing

Test the influence of management accounting innovation on cost performance can be seen in Figure 2 as follows.

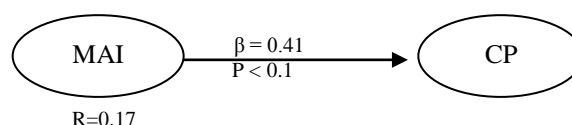


Figure 2: Relationship model between MAI and CP

In Figure 2 the resulting path coefficient is positive which is equal to 0.41 with a p-value of less than 5%. This means that MAI has a significant positive effect on CP, where the better the MAI, the better the CP. Therefore, the hypothesis is accepted. This shows that management accounting innovation has an influence on cost performance, which means that management accounting innovation has a role to increase cost performance. The magnitude of the influence of management accounting innovation on cost performance can be seen from the value of R-squared coefficients that is equal to 0.17, which means that the influence of management accounting innovation on cost performance is 17%.

## V. DISCUSSION

The research results show that management accounting innovation has a significant effect on cost performance. In

other words, management accounting innovation is related to the advantages of competitive advantage, and improvement in organizational performance. Competitive management in private universities, management accounting innovation is a way to manage organizations effectively and efficiently. For example, activity based costing is a way to calculate more accrual costs because indirect costs are charged based on the activity consumed (Marlina, E, 2017). Balance scorecard is a method of measuring organizational performance not only from financial aspects but also from non-financial aspects so that organizational leaders are not only motivated to improve organizational performance in the short term but also the long term (Ax & Greve, 2017; Maiga et al., 2015). Based on previous research, we prove the theory and text of a more complex model, and find universities that apply management accounting innovation to have better cost performance.

## VI. CONCLUSIONS

This research presents empirical evidence that management accounting innovation as an accounting information system used by management in making decisions can improve organizational cost performance. Based on the findings of this study, we uphold the view that adoption of management accounting innovations cannot be ignored when realizing effective and efficient tertiary management. Maintaining the sustainability of the organization today is an important component of the strategy of every private university operating in Indonesia, and one of the efforts taken is the adoption of management accounting innovation. Our research findings emphasize the important role of management accounting innovation and suggest that innovations in management accounting must be adopted and integrated in organizations to improve the performance of higher education especially in cost management effectively and efficiently.

Furthermore, the results show that management accounting innovation has a positive effect on organizational cost performance. This lesson has important implications for private universities to manage organizations and maintain their existence in global competition. Based on the results of our research, we emphasize that government policy mechanisms contribute to regulating tertiary

education so as to produce better performance especially private tertiary institutions so that organizational sustainability is maintained.

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