

Interactive Use of Performance Measurement Systems and its Impact to Firm Performance: Evidence from West Java Province Local-Owned Enterprise, Indonesia

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Abstract

We analysed the influence of the interactive use of performance measurement systems (IPMS), organizational commitment (OC), and effectiveness innovation type (EIT) on the firm performance. Then, the extent to which that who have organizational commitment and effectiveness innovation type as an intervening variables. We study the West Java Local-Owned Enterprise, Indonesian. From 146 distributed questionnaires, we obtain 69 usable data points which we analyse using Path-Analysis. We indicated that IPMS, organizational commitment, effectiveness innovation type have positive and significantly effect on firm performance. Other word, we suggested that organizational commitment and effectiveness innovation type as an intervening variable in the relationship between IPMS and firm performance. This result implies that managers can open communication linness to subordinate to increase IPMS that lead to the improvement of OC and EIT in order to generate operational effectiveness and performance. This research confirms that IPMS and OC should be increase implementation of EIT to encourage the employee's motivation to creation by day to day in gaining firm strategic competitiveness. This research have confirmatory the importance employed of IPMS, OC, and EIT at middle to lower level employees in the Government Local-Owned Enterprise. I thing that less seriously in the decade were field of management accounting/performance measurement systems.

Keywords: Interactive use of performance measurement systems; Effectiveness innovation type; Organizational commitment; Local-owned enterprise; Firm performance.



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1. Introduction

Increasingly, local-owned enterprise will focus of government support in order to as supplier of city car transportation, water treatment, healthy care facility of hospital, carbage clean of city, financing low cost, social security, public services, financing performing unit business, etc. That's would be continued of performed extent to which for the community at West Java Province. So its is government liability by year to year because governmental will responsibility and consistence to be for any people. But sametime its is liability the nature provides few unsertaint and incontinue.

Simons R. L. (1995a) argue that, damage a company integrity could be affecting by a fundamental problem facing managers and how to exercise adequate control in organizations that demand flexibility, innovation, and creativity. Much of the empirical research to date has focus on the role of accounting as a diagnostice tool for assessing and rewarding managerial performance despite the recognition that accounting can serve as a dialogue, learning and idea creation machine Burchell *et al.* (1980).

Simons R. L. (1990) offers one possible explanation for the apparent inconsistencies in the literature. He argues that prior research has been preoccupied with studying the extent to which the importance of MACS in their traditional role of performance evaluation, or what he refers to as their diagnostic role Simons R. L. (1990), Simons R. L. (1991). Simons R. L. (1992); Simons R. L. (1995a) argue that, managers rely on accounting information useful to their decision making and control functions and managers promote innovation. Ongoing the firm will evaluation for the feedback of the innovation effectiveness and strategic implemetation (Abernethy and Brownell, 1999). For example, extence to which: *how to measure of performance, when the interactive use of performance measurement systems implies*. Diagnose the practical problems a government organization encounters when implementing a performance management and performance budgeting system in public services (Webb and Candreva, 2010).

Innovations is a key strategic attribute of organizations and has the potential to create competitive advantage (Subramaniam and Mia, 2003). The more rapid the competition in markets and change in technoloty, the greater is the need for innovation within organizations that's a potential challenge. Interactive use of performance measurement systems and effectiveness of innovation would like encounter on top management its is call organizational commitment persue that to competitive advantages of the management performance and firm performance will increase.

2. Literature Review and Hypothesis Development

2.1. Interactive Use of Performance Measurement Systems

Based on [Abernethy and Brownell \(1999\)](#) and [Simons R. L. \(1995a\)](#); [Simons R. \(2000\)](#) prior researcher to suit in order to measurement of instruments construct of interactive use of performance measurement systems argue that extensively conceptualize has defined and used. In this study our adopted of the perceptions and encounter will explanations.

The interactive use of budgeting provides a vehicle for the top management to reveal their values and preferences to organization members ([Simons R. L., 1991](#)). It enables the interchange of information concerning the opportunities, threats, strenght and weaknesses that exist as the organization reorientation itself in the market. The interactive use of budgets, with its focus on dialogue, communication and learning, between top management and subornates as well as among manager at the same level, is consistent with the operation of cross-functional liason groups.

[Simons R. L. \(1995a\)](#); [Simons R. \(2000\)](#) claims that the interactive use of performance measurement leads to improvement in learning for the organizational members. Analysis of this claim leads us to acknowledge that the use of interactive performance measurement system within the organization serves as a stimulus for the members of the organization to pursue learning in their field of expertise and enhance their professional dexterousness; the organizational members professional and skills development, in turn, guides them to deduce a more effective business strategy and better reorient it to their customers.

As [Abernethy and Brownell \(1999\)](#) to suit this study's requirements and asked questions about the performance management system these organizations employed, the nature of interaction between different levels of management, and the level of communication and debate between these levels of the organizational hierarchy.

2.2. Organizational Commitment

Definning of organizational commitment in this study adopted the attitudinal view of organizational commitment; it was defined as identification with and acceptance of their organizational goals and value, their willingness to exert considerable effort on behalf of the organization and their desire to maintain organizational membership ([Iftikhar et al., 2016](#); [Monday et al., 1982](#)). Thus, for the variable operationalization our refer by [Meyer and Allen \(1991\)](#) argue that have three component conceptualization of organization commitment, these dimensions of affective commitment, normative commitment, and continuance (rational) commitment.

2.3. Effectiveness of Innovations Type

[Gunday et al. \(2011\)](#). argue that innovativeness has been touted as one of the fundamental instruments of growth strategies to enter new market, to increase the existing markert share and to provide the company with a competitive edge. Motivated by the increasing competition in global markets, companies have started to graps the importance of innovation, since swiftly changing technologies and severe global competition rapidly erode the value added of existing products and services.

Innovations is driven by the ability to see connections, to spot opportunities and to take advantage of them ([Tidd and dan Bessant, 2014](#)). Four dimensions of innovation space will focus on broad categories in this study: product innovation, changes in the things (products/services) which an organization offer; process innovation, changes in the ways in which they are created and devivered; position innovation, changes in the context in which the products/services are introduced; and paradigm innovation, changes in the underlying mental model which frame what the organization does ([Shafiq et al., 2018](#)).

2.4. Firm Performance

Evaluation and control information must be relevant to what is being monitored. One of the obstacle to effective control is the difficulty in developing appropriate measures of important activities and outputs, and then performance is the end result of activity ([Wheelen et al., 2015](#)). In according with previous research ([Gupta and Govindarajan, 1984](#); [Mahoney et al., 1963;1965](#)) a long multiplicity of dimension rahter than on any single dimension, in arriving at a measure of overall effectiveness. Thus, in this study measurement instruments our refer to develop by ([Mahoney et al., 1963;1965](#)).

2.5. Hypothesis Development

According to research questions and lterature review, our would like concluded that have positive and significant the relationsip between interactive use of performance measurement systems, organizational commitment, effectiveness of innovation and firm performance. Performance measuremen systems can improve of the organizational commitmen, will create of the innovation effectiveness in the organization, and ongoing the organizations in order will reciept of the target and firm performance. Previouw research has suggested have correlation between innovation type and firm performance ([Atalay et al., 2013](#); [Kalkan et al., 2014](#); [Mensah and Acquah, 2015](#); [Ting et al., 2012](#)) . Using tool of interactive use of budget and performance measurement systems would be increase effectiveness and top management commitment in the organization ([Abernethy and Brownell, 1999](#); [Monday et al., 1982](#); [Simons R. L., 1990;1991;1992](#); [Subramaniam and Mia, 2003](#)). In the conterparth of the organization should be to promote outside on the market have important implications for designing appropriate manangement commitment, because, that's would like encourage and encompass of the firm to be effectiveness of the operations. [Simons R. L. \(1992\)](#); [Simons R. L. \(1995a\)](#); [Simons R. L. \(1995b\)](#) argue that, managers rely on

accounting information useful to their decision making and control functions and managers promote innovation. In relevant research, [Russell and Russell \(1992\)](#) contend that as organization promote more innovative value, employees prefer more organic structures and participative management processes. Organizational commitment which relates to an employee's feelings, identification, work hard and involvement in a particular organization ([Meyer and Allen, 1997](#); [Porter et al., 1976](#)). An employee's loyalty to the firm relates to genuine acceptance and preparedness to work hard so as to attain the firm's goals.

This reasoning suggests the following hypothesis relating to the interactive use of performance measurement systems, organizational commitment, effectiveness of innovation and firm performance is formulates:

Ha: There is a positive relation between interactive use of performance measurement systems, organizational commitment, effectiveness of innovation and firm performance,

3. Methodology

Data were gathered by a survey research method that involved the administration of a written questionnaire to a sample and units analysis of finance manager and operational manager. Questionnaires were distributed and returned by mail. The potential respondents were Local-Owned Enterprise, West Java Province, Indonesian of 73 firms, that are strategic business unit have fully support by government. From 146 distributed questionnaires, we obtain 69 usable data final and Path-Analysis were used. The reliability and validity test of the questionnaires instruments and measurement of construct would be employed and referencing by [Nunnally \(1978\)](#) and [Kaiser and Rice \(1974\)](#). The questionnaires instruments and measurement of construct were formulated as follow:

Interactive Use of Performance Measurement Systems. The questionnaires instruments and measurement of construct were adapted the questionnaire used by [Abernethy and Brownell \(1999\)](#) to suit this study's requirements and asked questions about the performance management system these organizations employed, the nature of interaction between different levels of management, and the level of communication and debate between these levels of the organizational hierarchy. Respondents were asked these questions of five items on the 5 point Likert scale (very disagreed to very agreed). Because, according to [Simons R. L. \(1995a\)](#); [Simons R. \(2000\)](#) interactive control system is resorted to by managers to communicate, debate and question decision-making within the organization at both horizontally and vertically, and interactive use of performance measurement system was measured by a multi-scale instrument developed by [Abernethy and Brownell \(1999\)](#), which has been extensively used.

Effectiveness Innovation Type. The questionnaires instruments and measurement of construct were adapted from the four dimensions of innovation space: product (service) innovation, process innovation, position innovation, and paradigm (mental model) innovation by [Tidd and dan Bessant \(2014\)](#). The four dimension will develop and adjust to relevant within the local-owned enterprise, through we compile and were asked these questions of six items on the 5 point Likert scale (very low to very high).

Organizational Commitment. The questionnaires instruments and measurement of construct were adapted from the three component conceptualization of organization commitment, these dimensions of affective commitment, normative commitment, and continuance (rational) commitment by [Meyer and Allen \(1991\)](#). After develop and adjust to relevant within the local-owned enterprise were asked these questions of six items on the 5 point Likert scale (very disagreed to very agreed).

Firm Performance. The questionnaires instruments and measurement of construct were the extent to which the organization have accomplished their job effectively, and the following organization activities developed by [Mahoney et al. \(1963\)](#); [Mahoney et al. \(1965\)](#). The measure provides eight sub-dimension of performance and a ninth dimension as an overall rating. That's were asked these questions of nine items on the 5 point Likert scale (very poor to excellent).

4. Results and Findings

Based on statistic data were analyzed correlationship between among variable show in tabel 1 and attachment too of discriptive statistics mean and standard deviation.

Table-1. Descriptive statistics and correlation matrix^a (n=69)

Variables	Min (Max)	Mean (SD)	IPMS	OC	Innovation	FP
IPMS	13.00 (25.00)	19.30 (3.42)	-			
Organizational Commitment	15.00 (30.00)	21.15 (3.84)	0.621**	-		
Innovation	12.00 (30.00)	21.11 (4.29)	0.543**	0.589**	-	
Firm Performance	27.00 (45.00)	36.62 (4.90)	0.190	0.201*	0.403**	-

a) Pearson correlation (two-tailed test) were computed. *correlation is significant at the 0.05 level; and ** correlation is significant at the 0.01 level.

Based on [table 1](#) were analyzed relationship between among variable show their indicates that interactive pformance measurement systems have positive and significant between organizational commitment and effectiveness innovation type, and have not correlation between firm performance, and then the tabel 1 as a attachment too of the discriptive statistics mean and standard deviation.

Table-2. Cronbach's Alpha reliability and loadings factor analysis^b

Discriptions items	IPMS	OC	Innovation	FP
Cronbach's Alpha	0.813	0.806	0.903	0.956
Loading factor on each items question in order for each variables				0.853
				0.900
	0.656	0.692	0.849	0.905
	0.518	0.420	0.899	0.901
	0.846	0.776	0.825	0.853
	0.890	0.736	0.822	0.900
	0.823	0.798	0.879	0.905
		0.829	0.656	0.901
				0.664
Extraction Sums of Squared Loadings (Cumulative %)	5 7.671	5 2.042	68.148	7 5.333

a) Extraction Method: Principal Component Analysis.

Table 2 its is meanning of cronbach's alpa and loadings factor for each item questionnaire based on research variables. Measurement relaibility of instruments construct show that is very high (reliable), because cronbach's alpha of 0.800 above. How about is vailidity?. The vailidity for each item questions show in **table 2** above. The IPMS variable were provided of 0.518 – 0.890; OC variable have 0.420 – 0.829; Innovations have 0.656 – 0.899; and firm performance variable have 0.664 – 0.905, we would like concluded that the variable have valids.

Table-3. Path-analysis result and direct effects

Discriptions	R-Square	F-test	Unstandardized Coefficients-B (Constant)	t-test
IPMS → OC	0.386	42.116**	0.697 (7.704)	6.490** (3.659**)
OC → Innovation	0.347	35.536**	0.657 (7.208)	5.961** (3.041**)
IPMS → Innovation	0.295	28.069**	0.681 (7.977)	5.298** (3.168**)
Innovation → FP	0.162	12.990**	0.460 (26.900)	3.604** (9.774**)

According to **table 3**, researcher playback on the topic is Interactive Use of Performance Measurement Systems and Its Impact to Firm Performance: Evidence from West Java Province Local-Owned Enterprise, Indoensia. Check-out to the path-analysis result on its direct effect, we would like concluded that the fourth step result have positive and significant effect on its all directions “IPMS on the OC, OC on the Innovations, IPMS on the Innovations, and Innovations on the Firm Performance” were confirmed. Show that, we will restatement of interactive use of performance measurement systems and its impact to firm performance: evidence from west java province local-owned enterprise, indoensia were confirmed.

The findings from the procedures involved in path analysis was carried out and all-out direct effects have positive and significant with the F-test and t-test that signicancy, we conclude that H_a was supported. At the same time, our concluded this findings suggested relevant which in the previous research. Actually, we to provide soma explanatory remarks of the results. The results as show in table 3 indicate that coefficient, b_1 0.697, was significant for IPMS affecting of the organizational commitment, that's supports [Simons R. L. \(1992\)](#); [Simons R. L. \(1990\)](#); [Simons R. L. \(1991\)](#); [Abernethy and Brownell \(1999\)](#); [Subramaniam and Mia \(2003\)](#) and [Monday et al. \(1982\)](#). The b_2 0.657, was significant for OC affecting of the innovations types, the evidence supports [Porter et al. \(1976\)](#) and [Meyer and Allen \(1997\)](#). The b_3 0.681, was significant for IPMS affecting of the innovation types, the result supports [Russell and Russell \(1992\)](#); [\(Simons R. L., 1990\)](#); [Simons R. L. \(1992\)](#); [Simons R. L. \(1995a\)](#); [Simons R. L. \(1995b\)](#) and [Meyer and Allen \(1997\)](#). The b_4 0.460, was significant for innovations types affecting of the firm performance, the finding supports [Ting et al. \(2012\)](#); [Kalkan et al. \(2014\)](#); [Atalay et al. \(2013\)](#); and [Mensah and Acquah \(2015\)](#).

The illustration for the local-owned enterprise, that's was involvement of the interactive use of IPMS; affective, normative and continuance commitment; product/service, process, position and paradigm innovations. While control systems effectively and empowerment, could be stimulus of an employee's loyalty to the firm relates to genuine acceptance and preparedness to work hard so as to attain the firm's goals, that's was correlated with the independent variables. When the performance measuremen systems was used, would be improved of the organizational commitmen, will be create of the innovation effective in the organization and ongoing the organizations at same time in order will reciept of the target and firm performance.

5. Conclusion

The finding research is interactive use of IPMS, top management commitment on the strategic plan, and involve of the four innovation dimension would like very important for any company and corporations, including local-owned enterprise, because multiplicity implication for the ongoing organizations and may be to for the meeting of the firm performance target. In the other way, future reasearcher would like exploratory in this topic for the validation of the limitation findings of IPMS and its impact to firm performance.

References

- Abernethy, M. A. and Brownell, P. (1999). The role of budgets in organizations facing strategic change: an exploratory study. *Accounting, Organizations and Society*, 24(3): 189-204.
- Atalay, M., Anafarta, N. and Sarvan, F. (2013). The relationship between innovation and firm performance: an empirical evidence from Turkish automotive supplier industry. *Procedia-social and behavioral sciences*, 75: 226-35.
- Burchell, S., Clubb, C., Hopwood, A. and Hughes, A. (1980). The role of accounting in organizations and society. *Accounting, Organizations and Society*, 5: 5-27.
- Gunday, G., Ulusoy, G., Kilic, K. and Alpkan, L. (2011). *Journal of Production Economics.*, 133(2): 662-76.
- Gupta, A. K. and Govindarajan, V. (1984). Business unit strategy, managerial characteristics, and business unit effectiveness at strategy implementation. *Academy of Management Journal*, 27: 25-41.
- Iftikhar, M., Shahid, M. U., Shahab, M. H., Mobeen, M. and Qureshi, M. I. (2016). Exploring the relationship among organizational citizenship behavior, psychological empowerment and turnover intentions with the mediating role of affective commitment. *International Review of Management and Marketing*, 6 (4S): 296-304.
- Kaiser, H. F. and Rice, J. (1974). Little Jiffy, Mark IV. *Educational and Psychological Measurement*, 34: 111-17.
- Kalkan, A., Bozkurt, O. C. and Arman, M. (2014). The impact of intellectual capital, innovation and organizational strategy on firm performance. *Procedia-Social And Behavioral Science*, 150: 700-07.
- Mahoney, T. A., Jerdee, T. H. and Carrol, S. J. (1963). *Development of Managerial Performance: a Research Approach*. South western Publishing: Cincinnati.
- Mahoney, T. A., Jerdee, T. H. and Carrol, S. J. (1965). The job of management. *Industrial relation*: 97-110.
- Mensah, F. B. and Acquah, I. S. K. (2015). The effect of innovation type on the performance of small and medium sized enterprise in the Sekondi-Takoradi Metropolis. *Archives of Business research*, 3(3): 77-98.
- Meyer, J. P. and Allen, N. J. (1991). A three-component conceptualization of organizational commitment. *Human Resource Management Review.*, 1(1): 61-89.
- Meyer, J. P. and Allen, N. J. (1997). *Commitment in the Workplace: Theory, Research and Application*. Sage: London.
- Monday, R. T., Porter, L. W. and Steer, R. M. (1982). *Organization linkages, the psychology of commitment, absenteeism and turnover*. Academic Press: New York.
- Nunnally, J. C. (1978). *Psychometric theory*. 2nd edn: McGraw Hill, Inc: New York.
- Porter, L. W., Crampon, W. J. and Smith, F. J. (1976). Organizational commitment and managerial turnover: a longitudinal study. *Organizational Behavioral Human Performance*, 15: 87-98.
- Russell, R. D. and Russell, C. J. (1992). An examination of the effects of organizational norms, organizational structure and environmental uncertainty on entrepreneurial strategy. *Journal of management*, 18: 639-56.
- Shafiq, M., Tasmin, R., Takala, J., Qureshi, M. I. and Rashid, M. (2018). Mediating role of open innovation between the relationship of Blue ocean strategy and innovation performance, a study of Malaysian industry. *International Journal of Engineering and Technology (UAE)*, 7(29): 1076-108.
- Simons, R. (2000). *Performance measurement and control systems for implementing strategy*. Prentice-Hall: New Jersey.
- Simons, R. L. (1990). the role of management control systems in creating competitive advantage: new perspective. *Accounting, Organizations and Society*, 15: 127-43.
- Simons, R. L. (1991). Strategic orientation and top management attention to control systems. *Strategic Management Journal*, 12: 49-62.
- Simons, R. L. (1992). The strategy of control. *CA Magazing*, 25: 44-51.
- Simons, R. L. (1995a). Control in an age of empowerment. *Harvard Business Review*: 80-88.
- Simons, R. L. (1995b). *Levers of control: How managers use innovative control systems to drive strategic renewal*. Harvard Business School Press: Boston.
- Subramaniam, N. and Mia, L. (2003). A note on work-related values, budget emphasis and manager' organizational commitment. *Management Accounting Research*, 14: 389-408.
- Tidd, J. and dan Bessant, J. (2014). *Managing Innovation: Integrating Technology, market and Organizational Change*. Fifth edn: John Wiley & Sons Ltd: United Kingdom.
- Ting, H. F., Wang, B. W. and Wang, D. S. (2012). The moderating role of environmental dynamism on the influence of innovation strategy and firm performance. *International Journal of Innovation, Management and Technology*, 3(5): 517-20.
- Webb, N. J. and Candreva, P. J. (2010). Diagnosing performance management and performance budgeting systems: A case study of the u.S. Navy. *Public Finance and Management.*, 10(3): 524-55.
- Wheelen, T. L., Hunger, J. D., Hoffman, A. N. and Bamford, C. E. (2015). *Strategic Management and Business Policy: Globalization, Innovation, and Sustainability*. 14th edn: Pearson: Boston.