“Interactive use of performance measurement systems and the organization’s customers-focused strategy: the mediating role of organizational learning”

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Interactive use of performance measurement systems and the organization's customers-focused strategy: the mediating role of organizational learning

Abstract

This study investigates the effect of the interactive use of performance measurement systems (PMS) on the company's adaptation of its customer-focused strategy. The authors used a self-administered survey study of 69 managers working in the Indonesia Stock Exchange-listed financial institutions. The authors' statistical analyses using SmartPLS 2.0 supported all hypotheses and revealed direct and indirect relationships among the hypothesized variables. However, based on the 'path analysis', using the Sobel's test and the Variance Accounted For (VAF), the empirical data revealed that the organizational members' *direct* relationship with the customer accounted for a greater contribution to the improvement in the customer-focused strategy compared to the organization's *indirect* relationship. This study provides evidence that an effective implementation and interactive use of PMS would leverage the organization's customers-focused strategy and help it gain a competitive advantage.

Keywords: interactive use of performance measurement systems, organizational strategy, organizational learning, customer-focused strategy, financial institutions.
JEL Classification: M00, M10, M19.

Introduction

The success or failure of the organizational customer-focused strategy determines, to a large extent, the organization's financial performance, which, in turn, has repercussions for the performance measurement system (PMS) the organization employs. A vast body of literature on organizational performance measurement system addresses issues in relation to organizational and managerial performance indicators (Bisbe & Otley, 2004; Chenhall, 2005; Hall, 2008, 2011). For example, study from Chenhall (2005) in the Australian manufacturing sector concluded that, irrespective of whether the organization employs the 'low-cost, high quality' or the 'high price, product differentiation' strategy, efficient and objective use of the integrative performance measurement system within the organization has a positive effect on strategy outcomes, through the alignment of the organizational learning processes with its strategy. Naranjo-Gil & Hartmann's (2007b) study of the Spanish Public Hospital found a direct association of the organization's interactive use of performance measurement system with change in the organizational strategy. Naranjo-Gil & Hartmann (2007a), applying interactive use of PMS also found that using interactive PMS is likely to benefit an organization in implementing a befitting business strategy. Implementation business strategy that focuses on the 'customer' provides the organization with a competitive advantage over its rivals (Guilding & McManus, 2002).

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Zhou, Brown & Dev (2009) argue that in order to command a highly leveraged competitive advantage in the marketplace and thus better meet competition, particularly in the service sector that survives on 'intangible' products, customer-focused strategy is a dominant factor the organization must endeavor to improve, which, in turn, could ensure the organization accomplishes and retains customer loyalty. Little, if any, of the literature on PMS addresses these issues, particularly in relation to its effects on the organizational customer-focused strategy (Guilding & McManus, 2002; Hyvönen, 2007). Through this empirical study we aim to inform both theory and practice through investigating the effect of the use of performance measurement system (PMS) in a service-sector business organization on the adaptation and improvement of the organization's customer-focused strategy.

According to these assumptions, it brings my goals to a research question:

To what extent does the use of interactive of performance measurement system enable the organization to improve customer-focus strategy through organizational learning?

To address this research question with empirical evidence, we did a survey study of managers working in the service sector – the Indonesian Stock Exchange listed financial institutions.

This study contributes to both theory and practice, in different ways: first, it extends Simons' (1995) study, which revealed that the use of interactive performance measurement system (PMS) enables the organization to enhance performance in two ways –

through, first, innovation and, second, organizational learning (see also Bisbe & Otley, 2004).

Through the present study we argue that the effect of organizational learning on the relationship between the use of interactive PMS and business's strategy has not been empirically substantiated, and we aim to fill this void, thereby contributing to the management accounting literature. We aim to measure the extent to which organizational learning plays the role of a mediator while the organization's interactive use of PMS and customer-focused strategy interact with each other. Next, the study locates itself in the context of the service sector, an area that has not been explored in respect of the context of this study. A country's service sector and its contribution to its economic growth has extensively been discussed in the literature, however, the interaction between the organization's interactive use of PMS and its customer-focused strategy, while the organizational learning intervenes as a mediating factor, has not been explored so far (Chenhall, 2003; Collier & Gregory, 1995a, b; Shields, 1997), and hence forms this study's base. Kihn (2010, p. 484) asserts:

'a number of gaps and under-researched yet important areas in the literature were identified in existing management accounting research. They include […] service sector organizations' […].

The study thus aims to address a service sector-specific management accounting issue and therefore furthers our current understanding of the issues into the service sector.

The remainder of this study is organized into five main sections. The following section reviews the relevant literature and develops hypotheses, followed by a section on the study's design and the research method employed. Findings of the empirical analyses and results are elaborated on in Section 3. Section 4 concludes the paper with a discussion on the study's findings, draws conclusions and makes recommendations for future research in the area.

1. Literature review and hypotheses development

1.1. Interactive use of PMS. Among the currently prevailing methods of countering market competition in the service sector, consumer-focused strategy has been the dominating factor (Zhou et al., 2009). For ensuring the effectiveness and efficacy of the organization's customer-focused strategy, organizational learning is one of the major requirements that is expected to moderate and improve the customer's perception about the organization and therefore enhance customer's satisfaction that, in turn, leads to retain customer's loyalty (de Waal & Counet, 2009; Love, Huang, Edwards & Irani, 2004; Slater & Narver, 1995). Active pursuit of organizational learning helps organizations to keep abreast of challenges and the ways to effectively counter them under changed external business circumstances (Kloot, 1997). The process, in turn, helps managers accumulate learning over time, which contributes to the organizational members' knowledge and understanding thereby enhancing the organization's ability to provide better products and services to customers and therefore effectively meet competition (Hult, Ketchen Jr & David, 2001).

In order to ascertain the effective implementation of organizational learning practices in the organization, implementation of an appropriate performance measurement system is a pre-requisite. Simons (1995, 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, guide them to deduce a more effective business strategy and better reorient it to their customers. Thus, it can be logically deduced that an effective implementation of the interactive performance measurement system within the organization, coupled with its active pursuit of organizational learning processes, can indirectly contribute to the development of the organization's customer-focused strategy.

Frequent and skilful interaction of middle-level managers with their subordinates is a distinct method of reaching the organizational goal of making their business strategies more effective and viable. Interactive control system is a formal information system that managers resort to interact with their subordinates on the later group's decision activities and strategies, to explore strategic uncertainties prevalent around the organization and to remove communication barriers between themselves and their subordinates to ensure a better and frank flow of information between them (Bisbe & Malagueno, 2009; Bisbe & Otley, 2004; Grafton, Lillis & Widener, 2010; Simons, 1995). Simons (1995) argues that the significance of middle managers is highlighted by the fact they they play a significant role in ensuring the effective functioning of the interactive control process within the organization. "Middle managers are key nodes of the information network that reveals senior management's concerns and moves newly collected

information up, down, and sideways in the organization" (Simons, 1995, p. 121-122). Thus, using the interactive control system equips the organization with better tools to search and explore opportunities and monitor competitors, thereby effectively positioning the organization in the market place in the face of competition (Bisbe & Otley, 2004; Grafton et al., 2010; Widener, 2007).

Regarding the peculiar characteristics of the strategic performance measurement system of an organization, Vaivio (1999, 2004) asserts that it is quite similar to the non-financial performance measurement system, as the later also heavily relies on long-term strategic objective rather than focusing on short-term goals. In addition, the strategic performance measurement system is more future-oriented and based on pieces of information that may not be generated or gleaned using financial measures (Decoene & Bruggeman, 2006; Grafton et al., 2010; Vaivio, 1999).

1.2. Customer-focused strategy. Recently, in the high level of competition, emphasis on customer needs is a prominent requirement to sustain competitive advantage (Hyvönen, 2007; Zhou et al., 2009). More specifically, in the financial institution that offers quite similar products and service, improvement service quality strives to success to its rivals (Chenhall & Brownell, 1988). Customer-orientated strategy leads to an organizational ability to recognize the strength and weakness of its competitors, both current and potential (Zhou et al., 2009). Furthermore, ultimate goal achieving customer-focused strategy is how the organization enables to leverage customer's satisfaction (Hyvönen, 2007). Consideration of customer satisfaction requires clear understanding the customer needs, both the present and the future, with the rapid change in customer's behavior (Zhou et al., 2009).

1.3. Hypotheses development. *1.3.1. The use of interactive PMS and organizational learning.* We assume that interactive use of performance measurement system leads to development of organizational learning routines within contemporary business organizations. Simons (1995, 2000) notes that interactive use of performance measurement guides organizational learning in situations where uncertainty prevails as to which strategy the organization should resort to. Furthermore, Simons (2000) links organizational learning to the organization's active use of the interactive performance measurement system (PMS) that is more focused on the flow of information through effective communication, dialogue and debate among members of the organization (see also Tuomela, 2005). Henri's (2006) empirical study on the relationship between the use of the interactive PMS and organizational learning found that there is a positive relationship between interactive uses of PMS and organizational learning. We put forth the following hypothesis in this connection:

H1: the use of interactive PMS will positively affect organizational learning.

1.3.2. Organizational learning and customer-focused strategy. Some scholars claim that organizational learning enables the organization to leverage against competitors and achieve a sustained competitive advantage (Ireland, Hitt & Sirmon, 2003; Kloot, 1997; López, José & Ordás, 2005; Sinkula, 1994; Slater & Narver, 1995). The rapid changes in customers' needs and requirements, particularly in the context of the service industry, are putting firms to a stringent test of developing a more robust strategy or adapt their current one to ensure achievement of enhanced levels of customer's satisfaction (Chenhall & Brownell, 1988). According the service-profit chain that successful service organization can establish, if firms in the service sector are successful in accomplishing high customer's satisfaction about their products, thereby harnessing customer loyalty, their profitability would improve (Heskett, Jones, Loveman, Sasser Jr. & Schlesinger, 2008; Schlesinger & Heskett, 1991). Thus, a firm in the financial service industry ought to pursue customer-focused strategy and be proactive rather than reactive in approach to countering competition so as it establishes a sound customer base by effectively pursuing product innovation strategy and enhancing IT capabilities (Chenhall & Brownell, 1988; Hyvönen, 2007).

Organizational learning is an essential requirement for an organization to establish and pursue a sound customer-focused strategy (Hyvönen, 2007) as learning produces accumulation of knowledge that leads to the creation of new ideas which bestows the organization with a competitive advantage in the marketplace (Chenhall, 2005). Therefore, the more intensive the organization's pursuit of organizational learning, the more effective will be the organization's pursuit of the long-term competitive advantage to help it win a strong customer base through helping it to achieve the market leader status (De Geus, 1988; Pablos & Lytras, 2008). Chenhall's (2005) study also endorsed the fact that organizational learning has a positive effect on the organization's customer-focused strategy aimed at achieving competitive advantage for the organization. On similar grounds, Yuliansyah & Gurd's (2011) empirical study that surveyed 178 managers of the Indonesian Financial institution found that there is positive relationship between organizational learning and product differentiation strategy. Thus, we deduce the following hypothesis in this context:

H2: There is a positive relationship between organizational learning and customer-focused strategy

1.3.3. The use of interactive PMS and customer-focused strategy. We predict a positive correlation between the use of interactive PMS and the organization's customer-focused strategy. Hartmann & Slapničar (2009) found in their study that the interactive use of PMS is positively correlated with the flexibility with which the organization strategy could be adapted. Basic stance of the interactive use of PMS dictates an active prevalence of communication and dialogue between different levels of the organizational hierarchy, where all members of organization have an opportunity to generate and share new ideas for the effective implementation of the business strategy (Simons, 1995). The present day fast dissemination and exchange of information between customers and competitors, customers' preferences undergo frequent changes, which confront organizations with uncertainty regarding their business strategies. Effective communication between all layers of the organizational hierarchy could help the organization overcome this and have better control over organizational strategy implementation (Simons, 2000). Effective implementation of this policy motivates members of the organization comprehensively employ their capabilities and search for ways to serve customers and confront competition the best possible way. Simons (2000) asserts that the use of interactive PMS aligns with strategy implementation in situations of uncertainty with regard to the organization's strategy. Similarly, Naranjo-Gil & Hartmann (2007b) found that the practice of interactive PMS enables organizations to improve performance through strategy adaptation to better suit the organization's circumstances. Prudent adaptation of strategy to reflect the organization's realistic position in the market place placates customers' requirements and leads to customer satisfaction, and the effective use of the interactive PMS can help the organization achieve this objective. The interactive of PMS is also closely linked with the organization's practice of non-financial performance measurement. Perera, Harrison, & Poole (1997) studied the use of non-financial performance measurement and its relationship with the organization's customer-focused strategy. Their study supported the existence of a positive relationship between the organization's practice of non-financial performance measurement and its customer-focused strategy. We can deduce from the findings of these studies that the use of interactive PMS has a close link with customer-focused strategy. We, therefore, forward the following hypothesis in this connection:

H3: There is a positive relationship between the use of interactive PMS and customer-focused strategy.

2. Research methodology

2.1. Research sample. Service sector immensely contributes to national income and carries even higher significance for developing countries. The service sector in the emerging economies, such as India and Indonesia, is undergoing significant structural adjustments (Metters & Marucheck, 2007) to better cope with competition. More specifically, in the case of Indonesia, 2010 data from the Bank of Indonesia claim that the country's service sector was the biggest contributor to the nation's gross domestic product in 2006-2009. For the purpose of this study, we chose Indonesia Stock Exchange listed companies as they are the 'largest' and 'most advanced' among the Indonesian companies (Lau & Sholihin, 2005, p. 401).

In the pursuit of the study's set objectives we conducted a survey on the country's service sector, more specifically, the financial institutions listed on the Indonesian Stock Exchange. While sampling for the study we included the banking, financing and insurance sectors, and purposefully excluded the country's pension fund sector as it does not encounter the usual market competition as do the other three sectors. With regard to the study's 'research site', we focused our study on the respondent institutions' headquarter offices, which are mostly located in Jakarta – the capital city of Indonesia, as these offices mostly dominate the organizations' strategic decisions and are responsible for policy matters regarding strategy, performance evaluation, competition, etc. Furthermore, the objectives the study pursues also dictated that we choose middle managers who usually happen to be the key link between the top management and the lower management team members. Simons (1995, p. 121-122) argues in this context "Middle managers are especially important in making the interactive control process work effectively. Middle managers are key nodes of the information network that reveals senior management's concerns and moves newly collected information up, down, and sideways in the organization".

A wide body of the literature advocates the pre-testing of the survey questions in order to enhance the clarity and intelligibility of the questions' language or structure from the perspective of a representative sample of the study's target population (Holbrook, Young Ik & Johnson, 2006). This study carried out several pre-tests: first, we translated the original questionnaire to *Bahasa Indonesia* "to ensure that they were clear and could be easily understood by the respondents…[,] ...to identify and rectify any problems with the questions; and … to ensure that the questions

conveyed the same meaning as did the English version" (O'Connor, Vera-Muñoz & Chan, 2011); and, second, to ascertain the reliability and validity of the questionnaire. Based on these pre-tests, the questionnaire was revised and re-assessed to for reliability and validity. Results indicated that the revised questionnaire met the generally prescribed reliability and validity criteria, demonstrating significance score of above 0.7. Following this, we embarked on the main study which was ready and sent out the surveys to the target population.

In an attempt to counter the inherent and the most pertinent disadvantage of resorting to the mail survey of low response rates (Dillman, 1991; Kanuk & Berenson, 1975) we applied the best practice prescribed by Dillman (1991) with an aim to enhance the response rate which is crucial for the validity and generalizability of a survey study. We did "pre-notification, initial mailing, first follow up, and second follow up" steps to drive the response rate high; the technique has been used in other studies such as Henri (2006). As a reinforcing tactics we paid regular visits to our target organizations in Jakarta and met those we surveyed. We distributed 210 questionnaires and could manage to receive back 72 (34.3%) completed responses. Of these, 69 (32.9%) responses were usable for the study. We argue that the response rate sufficed to comprehensive address the objectives we set for the study. Gudono & Mardiyah (2000) claim that the average response rate for a survey study in the management accounting field is below 20%. We can link the higher response rate for this study to the survey administration and follow up strategy that we resorted to, as described above. Table 1 presents demographic information of respondents.

Table 1. Demographic information of respondents.

	Respondents' characteristics	'n'	Cumulative	%	Cumulative (%)
Gender	Men	37	37	58.2	58.2
	Women	32	69	41.8	100
Age	< 35	26	26	37.7	37.7
	36-45	35	61	50.7	88.4
	> 46	8	69	11.6	100
Education	Senior high school	13	13	18.8	18.8
	Diploma/Bachelor	45	58	65.2	84
	Master/Doctoral	11	69	15.9	100
Education	Accounting & finance	17	17	24.6	24.6
	General	15	32	21.7	46.3
	Human resources	15	47	21.7	68
	Marketing	14	61	20.3	88.3
	Others	8	69	11.7	100

2.2. Variable measurements. *2.2.1. The use of interactive performance measurement system.* Interactive use of performance measurement system was measured by a multi-scale instrument developed by Abernethy & Brownell (1999), which has been extensively used by different authors (see Bisbe & Otley, 2004; Bisbe & Malagueño, 2009; and Naranjo-Gil & Hartmann, 2007b), which has applied Simons' (1995) theory on interactive control. According to Simons (2000) interactive control system is resorted to by managers to communicate, debate and question decision-making within the organization at both horizontally and vertically. We adapted the questionnaire used by Abernethy & 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 presented these questions on the 7-Likert scale.

2.2.2. Organizational learning. The extent of use of the organizational learning by our target organizations is assessed using four questions developed by Hult (1998) and Hult et al. (2000). These four questions are constructs of learning orientation in a contemporary organization. The constructs serve as a basis of the use of organizational learning, and have been widely applied in several studies (e.g: Henri, 2006; Hult et al., 2001; Widener, 2007). In this study we sought the respondents' opinion on the extent of their use of the constructs in their organization through their response to each question with a 7-point Likert scale score that ranged from 1 (strongly disagree) to 7 (strongly agree).

2.2.3. Customer-focused strategy. Hyvönen (2007) first tossed the term 'customer-focused strategy' in her study, asserting that the strategy is quite similar to the generic product differentiation strategy of Porter (1980). In the current study, we used customer-focused strategy-specific question similar to those

adopted for differentiation strategy by Auzair and Langfield-Smith (2005) as their study's 'site' was also in the service sector. Respondents were questioned, using a 7-point Likert scale from 1 (strongly disagree) to 7 (strongly agree), on the extent of their agreement or disagreement to the questions regarding their use of the customer-focused strategy.

3. Results

3.1. Descriptive statistics. Table 2 describes the descriptive statistic of variables:

Table 2. Descriptive statistics

Variable	N	Theoretical range		Actual score	
		Min	Max	Min	Max
Interactive use of PMS	69	1	7	1	7
Organizational learning	69	1	7	1	7
Customer-focused strategy	69	1	7	2	7

In addition, mean, deviation standard, loadings and *t*-statistic using SPSS and SmartPLS is illustrated in Table 3.

Table 3. Mean, deviation standard, loadings and *t*-statistic

Latent variable	Mean	SD	Loading	*t*-statistic (bootstrap)
Interactive use of PMS (Composite reliability = 0.933, Cronbach's α = 0.905, AVE = 0.778)				
Inter1	5.81	.974	0.869	20.136
Inter2	5.61	.958	0.882	28.034
Inter3	5.72	.922	0.884	19.266
Inter4	5.71	.987	0.893	22.338
Organizational Learning (Composite reliability = 0.883, Cronbach's α = 0.827, AVE = 0.656)				
OL1	5.87	0.969	0.712	5.394
OL2	5.72	0.968	0.855	14.574
OL3	5.58	1.230	0.855	26.375
OL4	5.91	0.935	0.808	12.601
Customer-focused strategy (Composite reliability = 0.934, Cronbach's α = 0.921, AVE = 0.613)				
CFS1	5.67	1.107	0.803	17.623
CFS2	5.67	1.196	0.765	6.843
CFS3	5.99	.993	0.811	22.114
CFS4	5.51	1.146	0.689	12.343
CFS5	5.59	1.129	0.702	5.667
CFS6	5.55	1.266	0.821	10.218
CFS7	5.71	.987	0.858	16.750
CFS8	5.86	1.033	0.785	14.702
CFS9	5.54	1.208	0.799	12.066

3.2. Partial least square (PLS) regression. To test our hypotheses, we apply PLS path modelling. PLS path modelling 'is a family of alternating least square algorithms, which extend principal component and canonical correlation analysis' (Henseler & Sarstedt, 2013, p. 567). According to Ringle, Sarstedt & Straub (2012) the most reasonable scholars embrace the PLS's advantages, such as its ability when it used with small sample size, non-normal data, for formative measures and focus on prediction. Hair, Ringle & Sarstedt (2011, p. 143) note that the PLS 'optimizes measurement model and then, in the second step, estimates the path coefficients in the structural model'. In the first step of the PLS, measurement model, can be conducted by examining reliability and validity.

Reliability test is carried out by assessing Cronbach's alpha and composite reliability. The rule of thumb is that Cronbach's alpha higher than 0.7 indicates a satisfactory outcome (Hulland, 1999). Table 3 shows that all Cronbach's alphas and composite reliability are higher than 0.8, which signals that all variables are satisfactory and pass the internal consistency reliability test.

Validity test is measured using two methods: convergent validity and discriminant validity. Convergent validity is assessed by seeing the average variance extracted (AVE) score. Henseler et al. (2009) contended that convergent validity value is adequate if the AVE score exceeds 0.5. Table 3 shows that AVE value of variables is more than 0.5, thus indicating the adequacy of convergent validity. Discriminant validity is measured in two ways: cross loading and Fornell-Larcker criterion. Discriminant validity measurement using 'cross loading' assumes that the 'loading' of each item should be higher than other variables (Hair et al., 2011). As Table 4 indicates for our study, 'loading' of each item is higher than 0.7, indicating that the discriminant validity using cross loading is satisfactory. Another measurement of discriminant validity is using Fornel and Larcker criterion. This measurement is deter-

mined by comparing square roots of AVE with latent correlation. Good discriminant validity can be seen if square root of AVE along with the diagonal line is higher than correlation between constructs. Table 4 illustrates that all square roots of AVE is higher than from diagonal lines, both vertically and horizontally. Thus, discriminant validity tests using Fornell-Larcker signals satisfactory correlation among the constructs.

Table 4. Discriminant validity (Fornell-Larcker)

	Interactive use of PMS	Organizational learning	Customer-focused strategy
Interactive use of PMS	**0.882**		
Organizational learning	0.308	**0.810**	
Customer-focused strategy	0.496	0.450	**0.783**

Thus, given the above elaborations, we conclude that the statistical tests of reliability and validity are adequate. Switching the text tone measurements and hypotheses testing, we now elaborate on the measurement of the structural model.

Estimating path coefficient of the structural model is measured by observing R^2 dependent variable and the path coefficient test. Camisón & López (2010) and Falk & Miller (1992) suggested that the value of R^2 is accepted if its value is above 0.1. Moreover, path coefficient is assessed using bootstrapping procedure with 500 replacements (e.g. Hall, 2008; Hartmann & Slapničar, 2009) to determine the strength relationship between constructs. A strong relationship between constructs is concluded if path coefficient exceeds 0.100 and is considered significant if its score is higher than 0.050 (Urbach & Ahlemann, 2010).

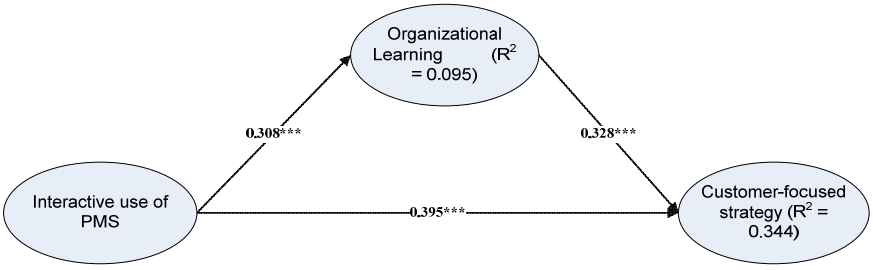
Table 5: The result of PLS structural model: path coefficient, *t*-statistics and R^2

Dependent variables	Independent variables		R^2
	Interactive use of PMS	Organizational learning	
Organizational learning	0.308		0.095
	(2.862)***		
Customer-focused strategy	0.395	0.328	0.344
	(3.205)***	(2.916)***	

Note: *** significant at 1% (one-tailed); ** significant at 5% (one-tailed); *significant at 10% (one-tailed).

Table 5 shows briefly that measurement structural model is adequate for this study. The next step is hypotheses testing.

3.4. Hypothesis test. Hypothesis 1 states that there is a positive relationship between the use of interactive performance measurement system and organizational learning. Table 5 indicates that the use of interactive performance measurement system has a strong relationship with organizational learning (β = 0.308, t = 2.862, p < 0.01). Therefore, H1 is accepted. On the same grounds, hypothesis 2 asserts that there is a positive relationship between organizational learning and customer-focused strategy. Statistical analyses of the study's empirical data indicate that H1 is also validated, and therefore accepted (β = 0.328, t = 2.916, p < 0.01). For hypothesis 3, analyses of the data found that the interactive use of PMS has a strong relationship with customer-focused strategy (β = 0.395, t = 3.205, p < 0.01).



Note: *** significant at 1% (one-tailed); ** significant at 5% (one-tailed); * significant at 10% (one-tailed).

Fig. 1. Structural equation modelling

The above elaborations on the statistical analyses and hypotheses are summarized below in Table 6.

Table 6. A summary of hypotheses testing results

Hypothesis	Descriptions	Findings
1	Interactive use of PMS and organizational learning are positively correlated	Supported
2	Organizational learning and customer-focused strategy are positively correlated	Supported
3	Interactive use of PMS and customer-focused strategy are positively correlated	Supported

3.5. Path model. To ascertain whether organizational learning has a mediating effect on the relationship between the interactive use of PMS and the customer-focused strategy, we resorted to the Sobel's test. According to the Sobel's test, the mediating effect of innovation is 2.142 (p < 0.01). This indicates that the *indirect* mediating effect of innovativeness provides insignificant contribution to the improvement of the organizational strategy that focuses on customer, compared to the *direct* effect of the

interactive use of PMS on the customer-focused strategy.

Another way to establish the magnitude of the *indirect* effect of the interactive use of PMS through organizational learning is by using the Variance Accounted For (VAF) approach of Iacobucci & Duhachek (2003) using the following formula:

$$VAF = \frac{a \cdot b}{a \cdot b + c} = \frac{0.308 \cdot 0.328}{0.308 \cdot 0.328 + 0.395} = 0.2. \quad (1)$$

These authors suggest that the mediating effect of a variable is confirmed if the score is higher than 0.5 or half of the total effect. Thus, based on these two measurements, organizational learning does not provide a significant contribution on the relationship between the interactive use of the PMS and the organization's customer-focused strategy compared to the *direct* effect of the interactive use of PMS on the strategy.

Discussion and conclusions

The study primarily sought to investigate the extent to which use of interactive performance measurement system affect the organization's customer-focused strategy, mediated through the organizational learning. In today's highly competitive market, effective pursuit of the customer-focused strategy is a prominent factor that determines the organization's overall capacity to maintain its competitive advantage. More specifically, in the case of the financial industry where most players offer quite similar 'products', the quality of services the industry constituents could ensure is the primary determinant of winning customers' loyalty. Therefore, in the pursuit of winning customer loyalty, organizations in the industry ought to evaluate and tailor their customer-focused strategy to reflect any change in their external and internal circumstances.

Focusing on the customer-focused strategy ensures more benefit if an organization has a culture that advocates and endorses 'learning' rather than staying put with its current practices or simply adopting 'good' practices from the players in the same or a different industry. This study's findings inform both practice and theory in the context of the financial industry. As the institutional theory advocates that organizations adopt what they see around in practice, and that social practices successfully adopted by some of an industry's constituents and legitimized through the society's endorsement spread across to the whole industry through the process of isomorphism. We inform practice in the light of the relevant theoretical predictions in this context and argue that the criteria for 'the best' social and business practices may vary from industry to industry.

Organizational learning can be ensured if organizations resort to the interactive measures rather than diagnostic measures, and that the interactive use of performance measurement system throughout the organization enables it to improve organizational learning (Simons, 1995). Through the current study, we aimed to explore how the interactive use of performance measurement system enables business organizations to improve organizational learning, which, in turn, positively affects their customer-focused strategy. The analyses of the survey data gleaned from our sample of 69 middle level managers in the Indonesia Stock Exchange listed Indonesian Financial Institution revealed that the interactive use of performance measurement systems leverages organizational learning, which, in turn, enhances the efficacy and effectiveness of its customer-oriented strategy. Outcomes of the statistical analyses conducted support all our hypotheses, as elaborated on above.

To support the sequence and strength of either of the direct or indirect use of the interactive performance measurement practices adopted by a financial institution, we conducted 'path analysis' using the Sobel's test and the Variance Accounted For (VAF) techneque. The analysis endorsed the *direct*, compared with the *indirect*, use of the interactive performance measurement system as more effective and beneficial for organizations that actively adopt organizational learning practices. The study also endorses and supports the adoption of business practices peculiar to a particular industry, duly supported through the organizational learning processes, rather than keeping their current business and social practices or adopting from other players.

This study has some limitations, which, if evaluated objectively, could set unique directions to future research in the area: the first limitation relates to the respondents' distribution andthe research 'site' used; the study's sample size is 69. Although the sample size stands parallel to other management accounting studies where the 'one sample to one company' distribution is resorted to (e.g. Chenhall, 2005; Hall, 2011; Henri, 2006), we still would urge readers to exercise caution when generalising the study's findings, particularly to other industries. A distribution of 'two samples to one company' in a future research endeavour would justify generalizability of findings to other industries to a reasonable extent, as endorsed by (Lau & Sholihin, 2005, p. 401) and also 'reduce common method bias' (O'Connor et al., 2011, p. 368). The study's second drawback relates to its research 'site'. This study is conducted on the service industry – financial institutions. The literature clearly differentiates the 'service' business sector from other business forms, and thus caution needs to be exercised in generalizing

service sector-specific research findings to other business sectors. As Hume (2008, p. 350) asserts, service sector has peculiar characteristics that encompass "differing levels of standardized or customized designs, service attributes, added extra services and staff contact", and the peculiar mix of these characteristics clearly stands service sector apart from other business sectors. Krishnan, Ramaswamy, Meyer & Damien (1999, p. 1197) argue in this connection, "An interesting aspect of financial services companies is that they do not fully fit" into the spectrum of the usual full-fledged service industries, such as hotel and travel agencies. Quality of service in the financial world carries a distinct meaning that is peculiar to the industry and sets it apart from the notion's meaning in, for instance, the manufacturing industry (Krishnan et al., 1999). A future research piece may attempt to replicate the study in the context of the manufacturing industry, compare and contrast the findings with our findings and draw conclusions.

References

1. 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), pp. 189-204.
2. Auzair, S.M. and Langfield-Smith, K. (2005). The effect of service process type, business strategy and life cycle stage on bureaucratic MCS in service organizations, *Management Accounting Research*, 16 (4), pp. 399-421.
3. Bisbe, J. and Malagueno, R. (2009). The Choice of Interactive Control Systems under Different Innovation Management Modes, *European Accounting Review*, 18 (2), pp. 371-405.
4. Bisbe, J. and Otley, D. (2004). The effects of the interactive use of management control systems on product innovation, *Accounting, Organizations and Society*, 29 (8), pp. 709-737.
5. Camisón, C., and López, A.V. (2010). An examination of the relationship between manufacturing flexibility and firm performance: The mediating role of innovation, *International Journal of Operations & Production Management*, 30 (8), pp. 853-878.
6. Chenhall, R.H. (2003). Management control systems design within its organizational context: findings from contingency-based research and directions for the future, *Accounting, Organizations and Society*, 28 (2-3), pp. 127-168.
7. Chenhall, R.H. (2005). Integrative strategic performance measurement systems, strategic alignment of manufacturing, learning and strategic outcomes: an exploratory study, *Accounting, Organizations and Society*, 30 (5), pp. 395-422.
8. Chenhall, R.H. and Brownell, P. (1988). The effect of participative budgeting on job satisfaction and performance: Role ambiguity as an intervening variable, *Accounting, Organizations and Society*, 13 (3), pp. 225-233.
9. Collier, P. and Gregory, A. (1995a). Investment appraisal in service industries: a field study analysis of the U.K. hotels sector, *Management Accounting Research*, 6 (1), pp. 33-57.
10. Collier, P. and Gregory, A. (1995b). Strategic management accounting: a UK hotel sector case study, *International Journal of Contemporary Hospitality Management*, 7, pp. 16-21.
11. De Geus, A.P. (1988). Planning as Learning, *Harvard Business Review*, 66 (2), pp. 70-74.
12. De Waal, A. and Counet, H. (2009). Lessons learned from performance management systems implementations, *International Journal of Productivity and Performance Management*, 58, pp. 367-390.
13. Decoene, V. and Bruggeman, W. (2006). Strategic alignment and middle-level managers' motivation in a balanced scorecard setting, *International Journal of Operations & Production Management*, 26 (4), pp. 429-448.
14. Dillman, D.A. (1991). The design and administration of mail surveys, *Annual Review of Sociology*, 17 (1), pp. 225-249.
15. Falk, R.F. and Miller, N.B. (1992). *A Primer for Soft Modelling*. Akron, Ohio: The University of Akron.
16. Grafton, J., Lillis, A.M. and Widener, S.K. (2010). The role of performance measurement and evaluation in building organizational capabilities and performance, *Accounting, Organizations and Society*, 35 (7), pp. 689-706.
17. Gudono, M. and Mardiyah, A.A. (2000). The effect of task uncertainty, decentralization, and management accounting characteristics on managers' performance, *Journal Research Akuntansi Indonesia*, 4.
18. Guilding, C. and McManus, L. (2002). The incidence, perceived merit and antecedents of customer accounting: an exploratory note, *Accounting, Organizations and Society*, 27 (1-2), pp. 45-59.
19. Hair, J.F., Ringle, C.M. and Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet, *Journal of Marketing Theory and Practice*, 19 (2), pp. 139-151.
20. Hall, M. (2008). The effect of comprehensive performance measurement systems on role clarity, psychological empowerment and managerial performance, *Accounting, Organizations and Society*, 33 (2-3), pp. 141-163.
21. Hall, M. (2011). Do comprehensive performance measurement systems help or hinder managers' mental model development?, *Management Accounting Research*, 22 (2), pp. 68-83.
22. Hartmann, F. and Slapničar, S. (2009). How formal performance evaluation affects trust between superior and subordinate managers, *Accounting, Organizations and Society*, 34 (6-7), pp. 722-737.
23. Henri, J.F. (2006). Management control systems and strategy: A resource-based perspective, *Accounting, Organizations and Society*, 31 (6), pp. 529-558.
24. Henseler, J., Ringle, C. and Sinkovics, R. (2009). The use of partial least squares path modeling in international marketing, *Advances in Intenational Marketing*, 20, pp. 277-319.
25. Henseler, J. and Sarstedt, M. (2013). Goodness-of-fit indices for partial least squares path modeling, *Computational Statistics*, 28 (2), pp. 565-580.

26. Heskett, J.L., Jones, T.O., Loveman, G.W., Sasser Jr., W.E. and Schlesinger, L.A. (2008). Putting the service-profit chain to work, *Harvard Business Review*, July-August, pp. 118.
27. Holbrook, A., Young Ik, C. and Johnson, T. (2006). The impact of question and respondent characteristics on comprehension and mapping difficulties, *Public Opinion Quarterly*, 70 (4), pp. 565-595.
28. Hulland, J. (1999). Use of partial least squares (PLS) in strategic management research: A review of four recent, *Strategic Management Journal*, 20 (2), pp. 195.
29. Hult, G. (1998). Managing the International Strategic Sourcing Process as a Market-Driven Organizational Learning System, *Decision Sciences*, 29 (1), pp. 193-216.
30. Hult, G., Hurley, R.F., Guinipero, L.C., and Nichols Jr., E.L. (2000). Organizational Learning in Global Purchasing: A Model and Test of Internal Users and Corporate Buyers, *Decision Sciences*, 31 (2), pp. 293-325.
31. Hult, G., Ketchen Jr., and David, J. (2001). Does Market orientation matter?: A test of the relationship between positional advantage and performance, *Strategic Management Journal*, 22 (9), pp. 899.
32. Hume, M. (2008). Understanding core and peripheral service quality in customer repurchase of the performing arts, *Managing Service Quality*, 18 (4), pp. 349-369.
33. Hyvönen, J. (2007). Strategy, performance measurement techniques and information technology of the firm and their links to organizational performance, *Management Accounting Research*, 18 (3), pp. 343-366.
34. Iacobucci, D. and Duhachek, A. (2003). Mediation analysis – Round table acr 2003, *The round table of the ACR conference*, Toronto.
35. Ireland, R.D., Hitt, M.A. and Sirmon, D.G. (2003). A Model of Strategic Entrepreneurship: The Construct and its Dimensions, *Journal of Management*, 29 (6), pp. 963-989.
36. Kanuk, L. and Berenson, C. (1975). Mail Surveys and Response Rates: A Literature Review, *Journal of Marketing Research*, 12 (4), pp. 440-453.
37. Kihn, L.A. (2010). Performance outcomes in empirical management accounting research: Recent developments and implications for future research, *International Journal of Productivity and Performance Management*, 59 (5), pp. 468-492.
38. Kloot, L. (1997). Organizational learning and management control systems: responding to environmental change, *Management Accounting Research*, 8 (1), pp. 47-73.
39. Krishnan, M.S., Ramaswamy, V., Meyer, M.C., and Damien, P. (1999). Customer Satisfaction for financial services: The role of products, services, and information technology, *Management Science*, 45 (9), pp. 1194-1209.
40. Lau, C.M., and Sholihin, M. (2005). Financial and nonfinancial performance measures: How do they affect job satisfaction?, *The British Accounting Review*, 37 (4), pp. 389-413.
41. López, S.P., José, M.M.P. and Ordás, C.J.V. (2005). Organizational learning as a determining factor in business performance, *The learning organization*, 12 (3), pp. 227-245.
42. Love, P.E.D., Huang, J.C., Edwards, D.J. and Irani, Z. (2004). Nurturing a learning organization in construction: a focus on strategic shift, organizational transformation, customer orientation and quality centered learning, *Construction Innovation*, 4, pp. 113-126.
43. Metters, R. and Marucheck, A. (2007). Service Management Academic Issues and Scholarly Reflections from Operations Management Researchers, *Decision Sciences*, 38 (2), pp. 195-214.
44. Naranjo-Gil, D. and Hartmann, F. (2007a). How CEOs use management information systems for strategy implementation in hospitals, *Health Policy*, 81 (1), pp. 29-41.
45. Naranjo-Gil, D. and Hartmann, F. (2007b). Management accounting systems, top management team heterogeneity and strategic change, *Accounting, Organizations and Society*, 32 (7-8), pp. 735-756.
46. O'Connor, N.G., Vera-Muñoz, S.C., and Chan, F. (2011). Competitive forces and the importance of management control systems in emerging-economy firms: The moderating effect of international market orientation, *Accounting, Organizations and Society*, 36 (4-5), pp. 246-266.
47. Pablos, P.O.D. and Lytras, M.D. (2008). Competencies and human resource management: implications for organizational competitive advantage, *Journal of Knowledge Management*, 2 (6), pp. 48.
48. Perera, S., Harrison, G., and Poole, M. (1997). Customer-focused manufacturing strategy and the use of operations-based non-financial performance measures: A research note, *Accounting, Organizations and Society*, 22 (6), pp. 557-572.
49. Porter, M.E. (1980). Competitive Strategy, *Measuring Business Exellence*, 1 (2), pp. 12-17.
50. Ringle, C., Sarstedt, M. and Straub, D. (2012). A Critical Look at the Use of PLS-SEM in MIS Quarterly, *MIS Quarterly (MISQ)*, 36 (1), pp. iii-s8.
51. Schlesinger, L.A. and Heskett, J.L. (1991). Leonard A. Schlesinger and James L. Heskett Respond: Customer Satisfaction Is Rooted in Employee Satisfaction, *Harvard Business Review*, 69, pp. 148-149.
52. Shields, M.D. (1997). Research in Management Accounting by North Americans in the 1990s, *Journal of Management Accounting Research*, 9, pp. 3-61.
53. Simons, R. (1995). *Levers of control: How managers use innovative control systems to drive strategic renewal*. Boston, Massachusetts: Harvard Business School Press.
54. Simons, R. (2000). *Performance measurement and control systems for implementing strategy*. New Jersey: Prentice-Hall.

55. Sinkula, J.M. (1994). Market Information Processing and Organizational Learning, *The Journal of Marketing*, 58 (1), pp. 35-45.
56. Slater, S.F. and Narver, J.C. (1995). Market orientation and the learning organization, *Journal of Marketing*, 59 (3), p. 63.
57. Tuomela, T.S. (2005). The interplay of different levers of control: A case study of introducing a new performance measurement system, *Management Accounting Research*, 16 (3), pp. 293-320.
58. Urbach, N. and Ahlemann, F. (2010). Structural equation modeling in information systems research using partial least squares, *Journal of information Technology Theory and Application*, 11 (2), pp. 5-39.
59. Vaivio, J. (1999). Exploring a non-financial management accounting change, *Management Accounting Research*, 10 (4), pp. 409-437.
60. Vaivio, J. (2004). Mobilizing Local Knowledge with 'Provocative' Non-financial Measures, *European Accounting Review*, 13 (1), pp. 39-71.
61. Widener, S.K. (2007). An empirical analysis of the levers of control framework, *Accounting, Organizations and Society*, 32 (7-8), pp. 757-788.
62. Yuliansyah, Y. and Gurd, B. (2011). The effect of reliance on integrative strategic performance measurement on strategy outcomes, *The 23rd Asian Pacific Conference*, Beijing.
63. Zhou, K.Z., Brown, J.R. and Dev, C.S. (2009). Market orientation, competitive advantage, and performance: A demand-based perspective, *Journal of Business Research*, 62 (11), pp. 1063-1070.