

The Effect of Strategic Performance Measurement System and Service Strategy on a Firm's Performance

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Abstract:

In regard of the significant contribution of service to a firm's performance, this study investigates the impact of strategic performance measurement system (SPMS) on sustainability. Our survey method is to collect the research data by distributing questionnaires to the top management at airline industry office in Indonesia. Based on the 105 usable data analysed using SmartPLS, this study shows that service strategy and SPMS affect a firm's performance. SPMS has a significant influence on a firm's performance when it is related to business strategy, especially service strategy. More specifically, the alignment of service strategy with the business strategy can improve financial performance in the Indonesian airline industry. This study implies that organizations should design SPMS that links to service strategy with the company environment to improve performance. The study contributes to the literature of SPMS, service strategy and company performance in the airline industry in a way that is hardly to be found in the management accounting field.

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1. Introduction

The popularity of management accounting studies of strategic performance measurement system (SPMS) encourages management accounting researchers to produce new literature on that topic (Bento and Ferreira White, 2010). SPMS is important because it provides financial and non-financial information to build organizational capability (Mohamed et al., 2008; Bento and Ferreira White, 2010). Bisbe and Malagueño (2012) show a positive relation between SPMS and performance mediated by a complete order of strategic decision. On the other hand, Verbeeten and Boons (2009) find that it does not always improve performance. More research is needed Franco-Santos et al. (2012). Previous work on SPMS looks at service industries (Mohamed et al., 2008; Kolehmainen, 2010; Yuliansyah and Khan, 2015) especially airlines. Moeller (2010) emphasises that service

has unique and interesting characteristics different from manufacturing. Four characteristics typify services: intangibility, heterogeneity, inseparability, and perishability (IHIP). Airlines have a great influence on the world's economy (Huettinger, 2014; Torlak et al., 2011). They are the world's fastest and most needed transportation (Gittens et al., 2017).

Historically, airlines double in size every 15 years and grow faster than other industries. In 2016, airlines across the globe carry about 3.8 billion passengers and 53 million tons of cargo on more than 100 000 flights a day – more than 10 million passengers a day (Gittens et al., 2017). The industry's contribution to global GDP (2014 figures) is USD 2.7 trillion (Aviation Benefits Beyond Borders, 2016). In the last five years the number of Indonesian passengers continuously increases. In 2013, 3.75 million people, in 2014, 4.04 million, in 2015, 4.3 million, in 2016, 4.6

million, and 5.3 million passengers in 2017 (Haryanti, 2018).

Some disturbing facts regarding the airlines performance emerge, for example flight delays, lost goods, crashes caused by a pilot's negligence, wrongly printed tickets, discrimination against people with disabilities (Poerwanto, 2015). There are nine crashes in 2014, 11 in 2015, and 15 in 2016 (Nistanto, 2016). These cases trigger a temporary ban on passenger and baggage activity at Soekarno-Hatta International Airport by the Directorate General of Civil Aviation of the Ministry of Transportation (Nistanto, 2016). The growth of airline business in Indonesia is not aligned with better Human Resources (HR) and infrastructure, whose costs would decrease performance (Hakim, 2016). To improve performance, management must adopt the appropriate strategy.

Airlines to must be competitive, and must have effective performance management to be successful in business strategy implementation. SPMS is an instrument to develop organizational ability to enhance the competitiveness of an organization(Mohamed et al., 2008). However, the strategic performance measurement system is only effective if it is aligned with an organization's strategy(Krishnan, 2008). The importance of alignment between strategic performance measurement system and the organization's strategy reflected based on environmental uncertainty is indicated by contingency theory. Contingency theory predicts the organization's characteristic relation such as performance measurement system and firm performance based on a certain contingency or condition (Donaldson, 2001; Hayes, 1977; Otley, 1980). This is one way to develop competitiveness, but only if it is based on contingency theory.

SPMS increases service provision. As one of the organization's internal strengths, it must have different and more positive values than the competitors' service has(Huang and Rust, 2017). Organizations need to identify appropriate service strategies to address higher market complexity and competition(Gebauer, 2008). Service strategies are important for a firm to develop and provide service benefits different from its competitors(Brady and Arnold, 2017). However, evidence of the theoretical foundation for

development of service strategies is still scarce(Wieland et al., 2017). The theoretical foundation is still insecure. We aim to clarify strategies for airlines in Indonesia operating both nationally and internationally.

This study contributes to the literature in (1) strategic performance measurement system related to service strategy in the airline companies in Indonesia, and (2) Influence of strategic performance measurement system on performance through service strategy.

Our Section 1 reviews the relevant theory. Section 2 discusses our hypotheses. Section 3 defines the variable. Section 4 presents the results of statistical analysis. Section 5 summarizes our main findings, acknowledges the limitations of the study, and suggests future research in the field.

2. The Literature Review – Conceptual Framework and Hypothesis Development

SPMS translates business strategies into various financial, operational and strategic steps, and provides guidelines for managers and employees to take action to achieve overall business goals(Yuliansyah and Jermias, 2018). The four main attributes of SPMS are (1) a long term goal, (2) strategic and operational indicators, (3) cause-effect relations, and (4) target dates for scheduled actions (Micheli and Manzoni, 2010). SPMS looks at both financial and non-financial items from various perspectives (Elijido-Ten, 2013). This is in line withChenhall (2005), who states that SPMS is designed to convey information to management regarding financial and non-financial measures in different perspectives, and to consolidate strategies into a set of interconnected performance measures. SPMS is effective if it illuminates many strategic and important factors (Silvi et al., 2015). In brief, SPMS is performance measurement system using performance measurement information to control feedback and feed forward to achieve the organization's objectives.

SPMS influences performance through the strategic agendas and decisions resulting from re-formulation of strategies based on the level of environmental dynamics(Bisbe and Malagueño, 2012). Service strategy develops the ways companies can serve others (Wieland et al., 2017) by (1) increasing the number of services offered,

and (2) emphasising them to customers (Gebauer, 2008). The service strategy must underwrite marketing activities (Roth and Van Der Velde, 1991; Brady and Arnold, 2017). To summarize, service strategy responds to business changes by satisfying customers in order to be competitive, and SPMS are fundamental to its success (Micheli and Manzoni, 2010). An organization's performance is the achievement of the organization's goals (Prayhoego and Devie, 2013; Munizu, 2010) in products and services, finance and marketings, customer focus, processes, and leadership (Jaafreh and Al-abedallat, 2013). "Performance" can relate to both financial and non-financial goals (Wang et al., 2018).

The discussions above lead us to the following conceptual framework (see Figure 1 below) to help us guide the study:

Figure 1: Conceptual Framework of the Study

–Insert Figure 1 about here--

There is a positive relation between SPMS and firm performance (FP) mediated by service strategies (Sainaghi et al., 2017; Gebauer et al., 2012; Brady and Arnold, 2017). Based on the conceptual framework above, we provide the following explanation for each of the hypotheses:

2.1. SPMS and Service Strategy

The relations between the strategic planning process and formulation of performance measurement system must be close, relating the measurement system to the organizations' sustainable strategy (Gates and Germain, 2010). The integrated performance measurement system is the main innovation in the firm's performance measurement. However, this system is not effective without a linkage to the organization's strategy. Environmental uncertainty significantly influences the changing organization's strategy (Krishnan, 2008). According to Gimbert et al. (2010), SPMS efficiently interprets strategic information to achieve the strategy implementation. SPMS is necessarily needed to identify the appropriate approach to business opportunities (Mohd Amir, 2014).

SPMS helps managers in making decisions to provide variant information (Bisbe and

Malagueño, 2012). Another important factor for the development of PMS is the impact of competition (eg prices, competitor actions, regulations) on the role of PMS, such as providing relevant information and control strategies (Lee and Yang, 2011). SPMS is a good instrument for communicating with managers who should not only focus on financial and customer relations but also on products and services that have an important role in sustainable strategic success (Aranda and Arellano, 2010).

Thus, we assume that there is a relation between SPMS and service strategy to improve firm performance as shown in the following hypothesis:

H1: Strategic Performance Measurement System positively affects Service Strategy

2.2. Service strategy (SS) and Firm Performance

The SS paradigm explicitly considers the strategic role of operations as a competitive instrument in better performance (Roth and Van Der Velde, 1991). Strategic compatibility has implications for performance (Gebauer, 2008). The SS are crucial for business development in the long term (Edvardsson and Enquist, 2002). Service strategies are important for improving firm performance (Brady and Arnold, 2017). SS needs to be developed to maximize profitability (Payne and Frow, 1999). Implementation of SS is indeed difficult, but it is important for organizations to be competitive (Kumar et al., 2009). Other studies show that SS elevates a firm's performance (Tiong et al., 2017; Viana et al., 2018; Yuliansyah and Jermias, 2018). Thus, our hypothesis is:

H2: Service Strategy has a positive effect on Firm Performance

2.3. SPMS and Firm Performance

Organizations that monitor their activities improve their financial and non-financial performance (Spencer et al., 2009). SPMS contribute effectively to firm performance. Indeed, superior performance will be achieved (Lee and Yang, 2011). SPMS can provide comprehensive feedback on various performance measures to improve performance (Hall, 2008). The company plans a

strategy by including indicators about customers such as complaints or satisfaction and market share to improve company performance (Belay et al., 2011). The use of financial and non-financial measures improves the performance of financial or non-financial organizations (Spencer et al., 2009). Previous studies found that there is a positive effect of SPMS on firm performance (Yuliansyah and Jermias, 2018; Micheli and Manzoni, 2010; Bento and Ferreira White, 2010). Therefore, our hypothesis is:

H3: Strategic Performance Measurement System positively affects firm performance

3. Research Methodology

3.1 Data Collecting

We work in Indonesia because there is still a lack of research on management accounting development in Asia. Scapens and Bromwich (2010) identify only 4% of 205 researches in 2000-2009. We choose a service industry for the same reason. Chenhall and Smith (2011) find only 18 of a total of 231 papers published by 10 leading management accounting journals during 1980-2009 (30 years). We look at airlines because their SPMS meet company standards only, and still need improvement (Amran and Indrawan, 2014).

Respondents in this study are the top managers of marketing, finance, customer service, and HR in national and international airlines in Indonesia. Addresses and contacts come from the websites of the Directorate General of Civil Aviation and the SoekarnoHatta Airport.

Questionnaires to senior management of Indonesian airlines yield 105 usable replies analysed using SmartPLS. The questionnaire return rate is 26.25% from 400 questionnaires distributed to 80 organizations. The demographic information of the respondents is presented below in Table 1:

—Insert Table 1 about here—

Table 1 shows that most respondents are female (73.3%), aged under 30 years (47.6%), with a bachelor degree (62.9%), working in marketing (31.4%), with two to 10 years working experience (47.6%).

Variables descriptive analysis to describe the data in this research is in Table 2 below,

containing minimum and maximum scores, predicted and real scores, and also mean scores.

—Insert Table 2 about here—

Table 2 above shows that the dimensions of SPMS variables (namely use of performance information for feed forward control, use of performance information for FeedBack control, and SS) are good. On the other hand, the firm performance variables (financial firm performance and non-financial firm performance) still need improvement.

3.2 Variable Instrument

3.2.1 Strategic Performance Measurement System (SPMS)

SPMS questionnaire indicators in this study are from the research literature of Grafton et al. (2010), that is, performance measurement information in SPMS to control feed forward and feedback.

Four functions of feed-forward control are (1) setting performance objectives of employees, (2) guiding the strategy implementation, (3) developing action plans, and (4) communicating crucial aspects in business strategy.

Four indicators of feedback control are (1) promoting organizational learning, (2) analysing the effects of past decisions, (3) evaluating the completed strategic targets, and (4) identifying needs of corrective actions.

The respondents score the importance of SPMS in their organization. Eight questions use five-point Likert scales from 1 (not important) to 5 (really important).

3.2.2 SS

The SS indicators come from Roth and Van Der Velde (1991). Ten questions cover relations between airlines, prime services, individual services, fun services, efficiency of office employees, appropriate prices, consistent services, appropriate information, accurate information, and courtesy, with five-point Likert scales from 1 (really bad) to 5 (excellent).

3.2.3 Firm Performance

FP measurements consist of four financial indicators and six non-financial indicators. The

financial indicators are (1) Return on Assets (ROA), (2) Return on Investment (ROI) used in previous researches (Yee et al., 2010; Shi and Yu, 2013), (3) income (direct revenue), and (4) overall profit (Hyvönen, 2007; Yuliansyah et al., 2017).

The non-financial indicators, from Hernaus et al. (2012), are (1) maintaining and adding new clients, (2) customers' complaints, (3) the organization's reputation, (4) its relationship with suppliers, (5) suppliers' trust, and (6) product quality compared with the competition. Likert scales run from 1 (really bad) to 5 (excellent).

4. Research Result

Confirmatory Factor Analysis (CFA) creates a uni-dimensional variable. Second Order Confirmatory Factor Analysis gives two other multidimensional constructs, i.e. (1) the construct of SPMS measured by Use of Performance Information for Feed Forward (FF) and Use of Performance Information for Feedback, and (2) the construct of firm performance based on Financial FP and Non-financial FP. Each of the dimensions is measured by indicators.

The Structural Equation Modelling (SEM) is by Partial Least Squares (PLS) and the goal is prediction (Selvina and Yuliansyah, 2016). This study predicts the influence of SPMS and SS on FP. PLS is very useful for limited samples (Laitinen et al., 2010; Hartmann and Slapničar, 2009). Two models of SEM-PLS are measurement (Outer Model) and structural (Inner Model). The Outer Model assesses validity and reliability. The Inner Model measures the influence of latent variables (Hair Jr et al., 2016).

4.1 Measurement Model (Outer Model)

To assess the validity and reliability of a model, we use convergent validity and discriminant validity of the indicators and composite validity for the indicator block (Ghozali, 2014). Convergent validity can be seen from the correlation between the score of indicator and its construct. The individual indicator is reliable if the value of correlation loading factor is more than 0.70 (Chin, 1998). In this study, the Discriminant validity is measured by using the Fornell-Larcker criterion which compares the square of AVE with the latent variable

correlation. It is valid if square root of Average Variance Extracted (AVE) along the diagonal is higher than the correlation between the constructions. A dimension is valid if AVE value is more than 0.5 (Hair et al., 2014). The construct reliability can be measured by using composite reliability from an indicator block measuring its construct. A construct is reliable if the composite reliability value is more than 0.70 (Ghozali, 2014). Rule-of-thumb testing of validity and reliability on the measurement model can be seen in Table 3 below.

—Insert Table 3 about here—

The following is the table of loading factors. As can be seen in Table 4 above, there is no indicator eliminated from the model because loading values of all the indicators are higher than 0.70.

—Insert Table 4 about here—

The results of data processing in the measurement model (Outer model) to measure the validity and reliability of model are in Table 5 below.

—Insert Table 5 about here—

Table 5 above shows that the AVE value is more than 0.5, in line with the dimension criteria with good validity according to Hair et al. (2014) i.e. AVE value is more than 0.5 so all indicators of the dimension in this study have good validity. A dimension is reliable if its Composite Reliability (CR) value is more than 0.7 (Hair et al., 2014). The results show that for all dimensions the $CR > 0.7$ meaning that the indicators of each dimension have a good internal consistency. Next, Table 6 above illustrate that all the square roots of AVE along the diagonal are higher and the Discriminant Validity value of this study is good.

—Insert Table 6 about here—

4.2 Structural Model (Inner Model)

The Inner Model measures the influence of the exogenous latent variable (Independent) on the endogenous latent variable (Dependent). We use the determinant coefficient (R^2) for dependent variables and path coefficient (β). The R^2 value is higher than 0.1 so it is accepted because it shows

the higher variants explained from the analyzed variable (Camisón and Villar López, 2010). The path analysis confirms that the relation between the constructs is strong, that is, the path coefficient is higher than 0.100 and the relation between latent variables is 0.05 (Urbach and Ahlemann, 2010). Figure 2 below shows the structural model.

—Insert Figure 2 about here—

Figure 2 shows that the determinant coefficient (R^2) value of the endogenous construct is higher than the recommended minimum value, so the model in this study has good predictive power. Figure 2 also shows the path coefficient value is more than 0.05, meaning that the structural model in this study is good. Overall, the results of measurement model evaluation in this study are good.

4.3 Hypothesis Testing

—Insert Table 7 about here—

The first hypothesis (H1) is that SPMS positively affects the service strategy. Table 7 shows that Use of Performance Information for Feed Forward Control has a positive and significant influence on the service strategy ($\beta = 0.367$, $t = 4.222$, $p < 0.05$). Likewise, the Use of Performance Information for Feedback Control has a positive and significant influence on the service strategy ($\beta = 0.426$, $t = 5.117$, $p < 0.05$). Based on the results, the first hypothesis is supported. The second hypothesis (H2) is that service strategy positively affects firm performance. The results show that SS has a positive and significant influence on both Financial firm performance ($\beta = 0.292$, $t = 2.837$, $p < 0.05$) and Non Financial performance ($\beta = 0.420$, $t = 5.620$, $p < 0.05$). Thus, the second hypothesis is supported.

The third hypothesis (H3) is that SPMS positively affects firm performance. Table 7 shows that Use of Performance Information for Feed Forward Control has a positive and significant influence on both Financial firm performance ($\beta = 0.242$, $t = 1.972$, $p < 0.05$) and Non-Financial firm performance ($\beta = 0.192$, $t =$

2.030, $p < 0.05$). Likewise, the Use of Performance Information for Feed Forward Control has a positive and significant influence on both Financial FP ($\beta = 0.223$, $t = 1.982$, $p < 0.05$) and Non-Financial firm performance ($\beta = 0.266$, $t = 3.016$, $p < 0.05$). Therefore, the results of this study support the third hypothesis (H3).

The summary of hypothesis testing results can be seen in Table 8 below.

—Insert Table 8 about here—

4.4 Path Analysis

Hair et al. (2014) state that there are two types of influence, namely direct influence and indirect influence. The direct influence is the relationship connecting two constructs with a single arrow direction. The indirect influence is a relationship involving several constructs. Table 9 below presents the results of the estimated influence between research variables, both direct and indirect influence.

—Insert Table 9 about here—

Table 9 above shows that the influence of the independent variable (SPMS) on the dependent variable (firm performance) are increased more through mediating variables (service strategy) than by the direct influence of SPMS on firm performance. Therefore, it can be concluded that SS is very important to support the relationship influence of the SPMS on firm performance.

5. Conclusion

We find that (1) SPMS has a positive and very significant effect on service strategy meaning that the first hypothesis is accepted, (2) SPMS has a positive and significant effect on firm performance meaning that the second hypothesis is also accepted, (3) SPMS influences firm performance significantly indicating that the third hypothesis is also accepted. We conclude that service strategy is a full mediating variable because the influence of SPMS on firm performance is greater through service strategy than through the direct relationship between SPMS and firm performance. Grafton et al. (2010) agree that performance measurement systems facilitating feed forward control and

feedback control in performance evaluation influence strategic capabilities and finally improve firm performance.

There are some consequences of this study. The first is to extend the literature on SPMS related to service strategy in airline companies. Chenhall (2005) claims that in manufacturing SPMS enhances competitiveness by clarifying the relation between objectives, strategies, and operations. Rajnoha et al. (2016) in industrial companies in Slovakia shows that SPMS improves performance when it focuses on both financial and non-financial goals and indicators. We provide new information about how to improve performance, especially in service companies.

Our second contribution is related to the influence of SPMS on FP through service strategy. Schmidberger et al. (2009) says that at EU hub airports a Performance Measurement System makes companies competitive and sustainable. We increase knowledge about the linkages between the SPMS, service strategy, and performance.

There are some limitations. We test only one independent variable (SPMS), one mediating variable (service strategy), and one dependent variable (FP). Further studies should add mediation variables such as Innovation products, Customer Satisfaction, and Differentiation Strategy. The second limitation is that this research is conducted only in the airline service sector companies operating in Indonesia, both National and International. We suggest that future researchers increase the number of samples and expand research to the hotel services sector, land transport, and marine transport. Regardless of the limitations, we conclude that all organizations must find a service strategy aligned with the company environment. In addition, a successful service strategy depends on having a SPMS in accordance with the organization's objectives.

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