

Management accounting system as mediator on sustainability performance

Desak Nyoman Werastuti^{1,*}, Riana Sitawati², Lucky Radi Rinandiyana³, Tine Badriatin³

¹ Department of Accounting, Ganesha University of Education, Singaraja City 81116, Bali, Indonesia

² Department of Accounting, STIE Dharmaputra Semarang, Semarang City 50148, Central Java, Indonesia

³ Department of Banking and Finance, Faculty of Economics and Business, Siliwangi University, Tasikmalaya City 46115, West Java, Indonesia

* **Corresponding author:** Desak Nyoman Werastuti, dsriwerastuti@gmail.com

CITATION

Werastuti DN, Sitawati R, Rinandiyana LR, Badriatin T. (2024). Management accounting system as mediator on sustainability performance. *Journal of Infrastructure, Policy and Development*. 8(1): 2833. <https://doi.org/10.24294/jipd.v8i1.2833>

ARTICLE INFO

Received: 8 September 2023

Accepted: 10 November 2023

Available online: 18 December 2023

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Abstract: This paper aims to investigate the factors of competitive success and examine the relationship between Strategic Management Accounting, management accounting information systems and sustainability performance. This research was conducted with a quantitative approach. The survey involved 125 managers of 4- and 5-star hotels in Bali, Indonesia, a research sample of 154 managers was determined to be given a research questionnaire. Analysis of research data was carried out through Structural Equation Modeling. The results showed that strategic management accounting and Information Management Accounting System had a positive effect on sustainability performance. MAS information also mediates the relationship between strategic management accounting and sustainability performance which can involve a variety of factors. This study only focuses on competitive strategy and MAS information variables, so further research is needed on the sustainability performance of the hospitality industry. The positive relationship between strategic management accounting and social and environmental performance supports the argument that hotels use socio-environmental aspects for their strategic management accounting. Hotel managers also need government regulations and information related to social and environmental issues such as the Indonesian occupational health and safety management system and the Indonesia Green Hotel Award.

Keywords: strategic management accounting; management accounting system; sustainability performance

JEL Classification: M41; Q56; H11

1. Introduction

The environmental damage that triggers global warming and climate change, resulting in an increased demand for more efficient management in the use of various resources. This encourages the development of issues of business sustainability that are part of corporate agendas around the world (Figge et al., 2002; Klewitz and Hansen, 2014). The importance of business continuity, in line with the concept of sustainable development, namely economic development to meet the needs of the present generation without compromising the ability of future generations to meet economic needs. Labuschagne et al. (2005) state that companies that want to compete globally should compile and report on the overall sustainability of operations. Many companies can evolve after considering environmental and social aspects as their company strategy (Dias-Sardinha et al., 2007).

According to Kaplan and Norton (1992), a performance appraisal approach that integrates environmental and social aspects is Sustainability Balance Scorecard (SBSC). Unlike the BSC (Kaplan and Norton, 2001), SBSC integrates three pillars of sustainability, namely Profit, People, and Planet, into a single performance

measurement system (Figge et al., 2002; Journeault, 2016). SBSC plays a role in achieving the successful implementation of a sustainability strategy (Möller and Schaltegger, 2005) through the establishment of a vision and providing information in decision making to improve sustainable performance (Dias-Sardinha et al., 2007; Lämsiluoto and Järvenpää, 2008; Malmi, 2001). The implementation of SBSC-based sustainable performance appraisal can be applied to the hospitality industry based on the phenomenon occurring in Bali, as the leading tourist destination in Indonesia. As a result of the increase in the number of hotels from year to year, resulting in reduced Greenland and water catchment areas. Besides, there is an increase in water demand in large quantities. Ironically, most hotels use groundwater without government permission. Excessive groundwater drainage by the hospitality industry results in a water deficit in Bali of up to 27.651 billion cubic feet by 2015 and in the long run, may have a negative impact of ground subsidence.

This phenomenon makes the company make various efforts to improve its sustainability performance. One of them is through the selection the strategic management accounting. According to Petera et al. (2020), Strategic management accounting (SMA) first appeared on the scene as a set of interconnected techniques and management approaches which could facilitate the strategic thinking into management. In terms of the highly competitive and turbulent environment, strategic thinking became a significant part of managerial work as high-quality strategy-focused management is of critical importance for success. Chen et al. (2011) revealed, a competitive strategy will create a competitive advantage and improve performance over the long term. Research conducted by BJ Gray et al. (2002), Hult et al. (2004), T Lee and Tsai (2005), Verhees and Meulenber (2004) found that competitive strategies will improve financial performance. Amoako-Gyampah and Acquah (2008), Bangchokdee (2008) state that competitive strategies can improve internal business process performance. Previous research has been done in the manufacturing industry, so it cannot be generalized in the hospitality industry because it has different characteristics (Chathoth and Olsen, 2005), and has not analyzed the influence of strategy on sustainable performance.

Strategic management accounting can improve the use of Management Accounting System (MAS) information. To obtain the right strategy, hotel managers need MAS information that can help them to decide and take action that is relevant in the face of healthy competition. Research conducted by Abernethy and Guthrie (1994), Chong and Chong (1997), Naranjo-Gil and Hartmann (2007), Bangchokdee (2008), Chenhall and Langfield-Smith (1998), Naranjo-Gil and Hartmann (2007), Simons (1987) were conducted in the manufacturing industry, using Miles and Snow (1978) typology based on the rate of change products and/or markets (Langfield-Smith, 1997). The typology is not appropriate to be used in the context of the hospitality industry because the industry does not demand intensive product/service changes.

The development is in accordance with the opinion of (Kald et al., 2000) which states that Porter's typology is more focused on how companies achieve competitive advantage over their competitors. Strategies in the Porter typology can provide a better explanation of MAS information (Otley, 1980). Sustainability performance can be improved through SMA information. The results revealed that MAS information can improve the performance of manufacturing companies (Mia and Patiar, 2001; Winata

and Mia, 2005; Harris and Brander Brown, 1998). Research conducted by Mia and Patiar (2001) states that SMA information can improve the financial and non-financial performance of hospitality in Australia. However, this study does not cover social and environmental aspects in measuring non-financial performance. Research on the benefits of SMA information in the hospitality industry is still limited (Mia and Patiar, 2001; Patiar and Mia, 2008). Therefore, research that examines MAS information is associated with the sustainability performance of the hospitality industry, indispensable.

The presence of gaps identified in various kinds of literature encourages this research to determine the role of competitive strategies and MAS information in improving sustainability performance. Several things motivate researchers to carry out this research, namely: first, Chung and Parker (2008) state that consumers are increasingly demanding “green” hotels that pay attention to environmental sustainability, waste management, water consumption, energy conservation, etc. To achieve this, an environmentally-based strategy, goal, and governance are required by leveraging the collaboration between strategic management accounting, management control functions, and ongoing performance evaluation. This study attempts to test the concept of (Petera et al., 2020; Chung and Parker, 2008).

Second, research that has included social and environmental actions in long-term economic performance to analyze sustainable performance is still limited, especially in the hospitality industry (R Gray, 2010). The SBSC perspective is adopted because it can link vision and strategy related to social and environmental issues with company performance management. Therefore, the results of this study will expand the use of the concept of balanced scorecard by developing a sustainable performance assessment by incorporating social and environmental perspectives into the balanced scorecard. The results will help managers to sustain long-term sustainable performance.

Third, research that analyzes the role of strategic management accounting in improving sustainable performance in the hospitality industry is still limited. This relationship analysis will help managers gain a better understanding of competitive strategies that can affect sustainable performance in the hospitality industry. Four, research on the relationship between the use of MAS information with financial and non-financial performance in the hospitality industry has been conducted in developed countries such as Britain, the United States and Australia. Research in developing countries is still limited. In the developing world, there are different cultural aspects, and the population has a specific behaviour pattern that flows from a variety of religious beliefs and values. Given these differences, there appears to be an urgent need to investigate the issue from a developing country perspective. This research is necessary because it will provide managers with a better understanding of the role of using MAS information to improve sustainable performance in developing countries.

This research is a basis for preventing environmental damage so as to reduce the negative impact where hotel managers must be able to compete to improve and measure non-financial performance by not ignoring environmental aspects caused by the hotel industry in Bali. As for the purpose of research to find out the strategic management accounting and information Management Accounting System in improving sustainability performance in the hotel sector in Bali..

2. Literature review

2.1. Strategic management accounting for sustainable performance

The approach used in this article is innovative because there are differences in individual usage SMA engineering and its implementation from SMA strategic management (implementation). The idea is that the use of SMA techniques is a prerequisite from SMA into the broad context of strategic management. This thinking is adapted to the flow who thinks that differentiates between the adoption of a formal performance measurement system and its actual intensive use is deemed necessary. Second, it is hoped that the relationship between the use of SMA and implementation of SMA in strategic management is not only direct, but also indirect through MAS and it very useful. Last, but not least, it is possible to build on it previous studies assessed the performance evaluation, helpful and SMA in isolation, while this study closer interaction between individual constructs. Strategic performance evaluation and rewards is a very interconnected, yet accessible approach. The performance evaluation is possible for the process of understanding subjective or objective evaluations of employee behavior. With, performance evaluation as a key component of a management system that affects managerial performance and performance. Performance evaluation may be linked to rewards (but not necessarily) and applicable at all managerial levels. Rewarding performance is another tool of affect employee motivation and behavior. In on the one hand, some researchers appreciate the award for performance that is counterproductive about work motivation. Based on the use of these technologies, it is possible to improve service processes and to prepare automated procedures for management. Sustainability represents a broad concept related to the various aspects of wellbeing for all. The three main pillars of sustainability include the environmental, economic, and social perspectives of the development. Sustainability is considered as a necessity since long-term growth cannot be achieved without embracing it (Dukić Mijatović et al., 2020). So that, we decided to focus our attention on sustainable performance. The results of the study of the relationship between competitive strategy and sustainable hotel performance that combines each of the five perspectives of the Sustainable Balance Scorecard (SBSC). Shows that as hotels move towards a differentiation strategy, they tend to have greater sustainable performance (Sitawati Winata and Mia, 2015).

- H1: Strategic management accounting has a positive effect on sustainability performance.

2.2. Strategic management accounting for MAS information

The term strategic management accounting is defined as Provision and analysis of management accounting data about business and useful controls in developing and developing business strategies. The notions of SMA are consequently discussed in a significant conceptual paper. While some parties tend to interpret SMA in a narrow manner, there is also a broader meaning of this approach is adopted in terms of use in the operational field use of strategic management accounting. SMA that was predicted to spread quickly, both in practical and academic terms, but this prediction did not come true. On the other hand, interest SMA is gradually and currently there is a large

amount of research on this topic.

There are three types of previous research on high school, including: theory (conceptual), empirical case studies and an empirical questionnaire survey. Historically, the questionnaire surveys of SMA were largely descriptive in nature, but, as a result, they began to use a contingency approach, in addition to increasingly sophisticated methodologies. Previous research used structural modeling in the high school field and its papers serve one package SMA analysis technique and analyzes both SMA contingent factors (i.e., factors influencing SMA adoption, within the accountant's category in strategy processes, deliberate strategy formulation, markets orientation, company size and type of strategy) and the use of SMA (particularly the effect on performance). The results revealed that the relationship between hotel engagement in business collaboration and hotel sustainable performance in terms of internal business process, learning and growth, and social and environment perspectives was found to be positive and significant. Therefore, it can be concluded that business collaboration may assist hotels to improve their internal business processes, learning and growth, and social and environmentally related performances (Sitawati and Winata, 2018).

- H2: Strategic management accounting affects MAS information.

2.3. SMA information on sustainable performance

Stewardship theory states that managers will serve the interests of the company so that it will consider all stakeholder interests in any decision-making. For that, managers need MAS information in order to balance the profit objectives with the goal of prospering stakeholders, and improving the quality of the environment.

Management accounting research in Indonesia has found a positive impact on the use of MAS information on (1) business unit performance. The study analyzes the impact of using MAS information on the overall business unit or managerial performance, rather than on specific performance dimensions (such as finance, customers). As a result, the impact of MAS information on various aspects of performance (financial, customer, internal business processes, learning and growth, social and environmental) has not been identified.

Research using the SBSC approach in Indonesia is still limited. This approach can give different results because it covers social and environmental aspects. By combining these two aspects, it can be said that the company find a better way to maintain long-term performance (Figge et al., 2002). Besides, research findings of the benefits of SMA's information in the hospitality industry are indispensable (Mia and Patiar, 2001; Patiar and Mia, 2008).

The research will add to the contribution of large resources, especially energy and water (Chung and Parker, 2008). MAS information can be used by managers to control the social and environmental costs that are in the budget. Employees will have a better understanding of how to address social and environmental issues in their tasks and responsibilities, thereby enhancing social and environmental performance. So it can be said that MAS information can also improve social and environmental performance. Thus, the hypothesis third of this study as follows.

- H3: SMA information positively affects sustainability performance.

2.4. Mediation of SMA information and strategic management accounting for sustainability performance

According to the contingency approach (Otley, 1980), the level of information needs of MAS on each company is not always the MAS. There are uncertainty tasks (Chong and Chong, 1997), strategy (Abernethy and Guthrie, 1994), and technological complexity (Chenhall and Morris, 1986; Govindarajan, 1988). The above studies investigate the direct impact of environmental uncertainty variables, MAS information, and strategies on manufacturing companies. To complement the available explanation of the impact of competitive strategy, ongoing performance, and MAS information.

Mia and Patiar (2001) provide evidence of an indirect relationship between environmental uncertainty on firm performance and MAS information as a mediating variable. This means that in an uncertain environment, managers will use MAS information more intensively, which will then lead to improved corporate performance. This may be due to an uncertain environment demanding manager to be flexible and innovative, and capable of handling problems (Mia and Patiar, 2001). Using MAS information, managers can study current issues, assess results (feedback) and opportunities, leading managers to make informed decisions (Ferris and Haskins, 1988). However, Mia and Clarke (1999) do not include a competitive strategy in this study, so the impact of strategy on this relationship is not yet known.

Gul (1991) found that there is a positive relationship between MAS information and environmental uncertainty in improving company performance. The availability of MAS information will lead to increased performance when there are conditions of environmental uncertainty (Gul, 1991). The Abernethy and Guthrie's (1994) study found evidence that MAS information has a positive effect on firm performance. Simons (1987) states that the conformity between MAS information with corporate strategy will result in higher performance. Companies that produce competitive advantage with specific strategies must be supported by specific MAS information as well.

Some research has been done, it can be concluded that the implementation of the business strategy will encourage managers to use SMA in decision-making information. This implies that SMA information can act as a mediating variable on the relationship between strategic management accounting and sustainability performance. Thus, the research hypothesis 4 is as follows.

- H4: MAS information mediates the influence of strategic management accounting on sustainability performance.

3. Methodology

This research used survey method, using questionnaire given to respondent to test framework and hypothesis research. The respondents in this study were taken from population 154 General Manager of 4 and 5-star hotels in Bali. The hotel selected is a category of 4 and 5-star hotels, for the following reasons:

- 1) This category will provide clearer and more complete description and concepts concerning the use of competitive strategies and MAS information when

compared to low category hotels (Harris and Brander Brown, 1998; Mensah, 2006).

- 2) The possibility of using SBSC is greater than the lower category hotels (Hoque and James, 2000).
- 3) To avoid weaknesses in lower-rated hotels, such as supply dominated by family businesses, limited marketing, quality, pricing policies, cost control, and lack of financial resources (Wanhill, 1997).

The analytical tool used in the study with a structural model equation method (SEM) to determine the relationship between dependent variables with mediating variables. Information in this study is to find out related to hotel performance, information on Management Accounting Systems and competitive strategies in the performance of sustainability and continuity of hotel environmental aspects in Bali.

4. Results and research discussion

4.1. Model measurement test

This research uses structural equation modelling equation (SEM). To test conceptual models and hypotheses. A model measurement consisting of strategic management accounting constructs, MAS information, and sustainability performance is evaluated. First, convergent validity measures the validity of the indicator as a construct gauge can be seen through the value of AVE and Communality > 0.50. As shown in **Table 1**, the AVE and Communality values are above 0.50.

Table 1. Convergent validity.

-	AVE	Composite reliability	R square	Cronbach alpha	Communality	Redundancy
Aggregation (Y1.3)	0.972291	0.990589	0.987597	0.985721	0.972291	0.960105
Broadscope (Y1.1)	0.917999	0.987397	0.983527	0.985075	0.917999	0.901677
Differentiation (X1.2)	0.950189	0.987064	0.998943	0.982522	0.950189	0.949185
MAS information (Y1)	0.932563	0.995198	0.863176	0.994769	0.932563	0.804511
Integration (Y1.4)	0.994447	0.997216	0.964572	0.994416	0.994447	0.959201
Finance (Y2.1)	0.967925	0.991784	0.978854	0.988955	0.967925	0.947253
Sustainable performance (Y2)	0.913214	0.996939	0.993252	0.996780	0.913214	0.902726
Implementation (X1.1)	0.940933	0.984549	0.999207	0.979069	0.940933	0.940155
Customer (Y2.2)	0.914441	0.981616	0.979131	0.976421	0.914441	0.893866
Learning & growth (Y2.4)	0.933381	0.988238	0.995273	0.985618	0.933381	0.928870
Internal business process (Y2.3)	0.896913	0.977479	0.983517	0.970638	0.896913	0.880936
Social & environment (Y2.5)	0.933304	0.993543	0.980954	0.992821	0.933304	0.914646
Strategic management accounting (X1)	0.944678	0.992733	-	0.991631	0.944678	-
Timeliness (Y1.2)	0.970956	0.990127	0.986605	0.985015	0.970956	0.957770

Second, the discriminant validity test is performed to test the validity of research instruments in explaining or reflecting latent variables. Using the Fornell et al. (1996) approach, discriminant validity was tested. The AVE Root Square Value is greater than the Correlation between Latent Constructs (**Table 2**). In short, the measurement

model meets the validity and reliability test. Therefore, the constructs developed for this measurement model are reliable and can be used to test the structural model and related hypotheses. The measurement model has good convergent reliability and validity.

Table 2. Discriminant validity.

-	AVE	AVE	MAS information (Y1)	Sustainable performance (Y2)	SMA (X1)
MAS information (Y1)	0.932563	0.965693	1	-	-
Sustainable performance (Y2)	0.913214	0.955622	0.946307	1	-
SMA (X1)	0.944678	0.971945	0.879073	0.884892	1

4.2. Structural model

After the hypothesized measurement model meets the validity and reliability assessment, it is followed by hypothesis testing. **Table 3** summarizes the overall conformity index of the structural model. **Table 3** shows that the strategic management accounting (X1) has a positive and significant impact on sustainable performance (Y2). It can be seen from the original value sample estimate of 0.067609 and *T*-Statistic 2.764596 > 1.960. Competitive strategy (X1) has a positive & significant effect on the MAS information (Y1), it can be seen from the original value sample estimate is a positive value of 0.929073 and *T*-Statistic 61.535316 > 1.960. The information of MAS (Y1) has a positive and significant impact on the sustainable performance (Y2), it can be seen from the original value of MAS pls estimate is positive 0.933493 and *T*-Statistic 40.483316 > 1.960. Therefore, H1, H2, and H3 are supported.

Table 3. Path coefficients (mean, STDEV, *T*-values).

-	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	Standard error (STERR)	<i>T</i> -Statistics ((O/STERR))
MAS information (Y1) to sustainable performance (Y2)	0.933493	0.938841	0.023059	0.023059	40.483316
Competitive strategy (X1) to MAS information (Y1)	0.929073	0.932941	0.015098	0.015098	61.535316
SMA (X1) to sustainable performance (Y2)	0.067609	0.061618	0.024455	0.024455	2.764596

According to Baron and Kenny (1986) rules, to find out the role of mediation, there are several assumptions: strategic management accounting has a significant effect on sustainability performance, strategic management accounting has a significant effect on MAS information, and MAS information has a significant effect on sustainability performance. Expressed in perfect mediation, if after entering the mediation variable, the influence of the strategic management accounting on Sustainability Performance is insignificant. In Table 3, the coefficient value of the path of strategic management accounting on sustainability performance is insignificant, so the mediation form in this study is perfect mediation. Therefore, H4 is supported.

4.3. Discussion

4.3.1. Strategic management accounting and sustainability performance

The strong competition in the hospitality industry has encouraged hotels to set strategic management accounting. Without having a unique value, the hotel will have difficulty in getting customers, finds the influence of differentiation strategies and financial performance in the hospitality industry. Strategic management accounting can add value and benefit the hotel as customers see hotel products and services superior. To attract customers, facilities, strategic location, and quality of service should receive attention (Petera et al., 2020; Chen et al., 2011; Kandampully and Suhartanto, 2000). Who argue that differentiation strategies can increase market share. Besides, this study supports previous research by Avci et al. (2011), which revealed that the type of prospector (more innovative and differentiated orientation) has a higher market share, higher customer satisfaction and better corporate image than the type of defender (more cost leadership). The current study also supports the findings of that competitive strategy can improve the quality of service and customer satisfaction.

In order to improve the quality of service, the hotel must implement a comprehensive information system so that it can operate more efficiently. For example, by using an extensive customer database system to get the latest and most accurate information related to the customer. By providing accurate customer service, the hotel can save time and money, and minimize customer service and complaints errors. As a result, the hotel can operate more efficiently and improve internal business performance. Research result this supports the findings of Tavitiyaman et al. (2012) in the US hotel industry that found that the implementation of competitive strategies can improve the operational efficiency of hotels in providing services to customers, which also means improving internal business process performance.

Strategic management accounting also improve growth and learning performance (Petera et al., 2020; Sitawati, Manaf et al., 2017). Hotels that focus on quality tend to emphasize the practice of human resource management such as recruitment, training, awards and communication (Hoque and James, 2000; Panayotopoulou et al., 2003). As a result, the hotel improves the quality of staff training in order to improve the professional skills of its employees. The results of this study support the research of Tavitiyaman et al. (2012) that finds a competitive strategy link to and performance of employees.

The positive relationship between strategic management accounting and social and environmental performance supports the argument that hotels use socio-environmental aspects to their competitive advantage. Hotels with poor social and environmental performance due to the unhealthy or unsafe work environment, have an impact on the loss of employee confidence in the work and customers in using hotel services. By applying social and environmental practices, the hotel earns the trust of its employees and customers, so the hotel gets a good reputation in social and environmental aspects (Miles and Covin, 2000). Company awareness in handling social and environmental issues can improve its competitiveness. The results of this study indicate that hotels implementing social and environmental related strategic

management accounting advantages will improve social and environmental performance (Carmona-Moreno et al., 2004).

4.3.2. Strategic management accounting and MAS information

The results show that hotel managers increase the use of MAS information when they use strategic management accounting. To maintain a strategic management accounting, hotels need information about customers and competitors, derived from MAS information (Chenhall and Morris, 1986). These results support the results of the Bangchokdee (2008) study, in the manufacturing industry. Chenhall and Langfield-Smith (1998) stated that companies implementing strategic management accounting need to use more intensive MAS information revealed that the type of prospector tends to use more intensive MAS information than the defender type.

4.3.3. MAS information and sustainability performance

The use of MAS information is critical in making conscious decisions by studying current issues, outcomes, and opportunities (Ferris and Haskins, 1988). The hotel manager can benefit from the MAS information as a resource to provide feedback on current hotel operations, monitor the progress of current activities, and to continue to create maintenance or needs improvement plans. Managers must monitor competitors' products to satisfy their customers thus improving financial performance. The results of this study support the results of research (Mia and Patiar, 2001; Bangchokdee, 2008) which shows that the use of MAS information has a positive influence on the financial performance of manufacturing companies. The use of MAS information can help the hotel manager take action to attract customers. Knowledge of customer needs and preferences is very important in order to provide the service properly and appropriately. The results of this study provide empirical support for previous research from Bangchokdee (2008), which found a significant relationship between the use of MAS information and customer performance in the manufacturing industry.

The hotel manager needs to have a customer database system to solve customer-related problems effectively. In order to have an accurate customer database system, the hotel manager needs MAS information. By using MAS information, customer complaints will be reduced and the efficiency of hotel management and internal performance of business processes increases. The results of this study support the findings of Bangchokdee (2008) which states there is a significant relationship between the use of MAS information on the internal business process performance of the manufacturing industry.

In order to be able to provide the best quality of service to customers, the hotel requires skilled workers to be employed. Hotels in Indonesia face strong market competition, so managers must have MAS information on employee skills that must be developed. The results of this study support the findings of Bangchokdee (2008) which revealed that there is a significant relationship between the use of MAS information on learning performance and growth in the manufacturing industry. MAS information contains both financial and non-financial information (Chenhall and Morris, 1986; Langfield-Smith, 1997; Mia, 1993), so managers can use it to update information related to learning and growth performance.

Hotel managers also need MAS information to improve their social and environmental performance so they can make better strategic decisions. For example, hotel managers need to know about energy and water consumption to be more efficient (Bohdanowicz and Martinac, 2007). By having this information, managers can determine appropriate actions to minimize energy and water consumption. Because they are actively involved in this environmental practice, hotels can gain positive recognition from staff and customers (Manning, 2004).

The hotel managers also need government regulations and information related to social and environmental issues such as Indonesia's health and safety management system and the Indonesian Green Hotel Award. Information relating to environmental, social regulations is useful to help managers comply with these regulations and avoid sanctions, leading to greater confidence to employees in performing their routine tasks. Therefore, managers need to intensify the use of MAS information in order to improve their social and environmental performance.

The results support the findings of Bangchokdee (2008), Mia and Patiar (2001), Patiar and Mia (2008) by adding a social and environmental perspective in investigating the relationship between the use of MAS information managerial and ongoing corporate performance. Combining social and environmental performance indicators in a Balanced Scorecard perspective will provide a better opportunity for hotels to maintain economic success (Figge et al., 2002).

4.3.4. Mediation of MAS information in the influence of strategic management accounting on sustainability performance

This study supports a contingency approach, which states that the influence of strategic management accounting on performance depends on MAS information (Petera et al., 2020; Chenhall, 2012). In this study, a contingency approach is used to evaluate strategic management accounting that can lead to more effective MAS information. The results of Mia and Clarke (1999) suggest that the use of Management Accounting System information (MAS) can help hotel managers to adopt and implement their plans in response to competition environments. From the results of this study, MAS is seen as a system that can provide benchmarking and monitoring information from internal and historical information traditionally generated by MAS to improve sustainability performance. Benchmarking is an attempt by the hotel to compare internal conditions with its competitors' hotels. For examples look at how costs, cost structures, employee skills, service quality, pricing, IT utilization, and profitability. While monitoring in the form of feedback from the implementation of hotel strategies to achieve predetermined factors as benchmarking hotels. The use of benchmarking and monitoring generated by MAS can be used by managers to assist them in the face of competitive pressures.

According to Kohli and Jaworski (1990), the greater the degree of competition then the orientation of business unit managers to adopt and pursue various strategies that can improve their performance will be higher too. MAS as a system that produces information can provide benchmarking and monitoring and help companies to identify, evaluate and implement appropriate strategies and improve company performance. In other words, MAS information is a mediator of the relationship between competition with the company's sustainability performance.

The greater the degree of competition then the orientation of business unit managers to adopt and pursue various strategies that can improve the performance of sustainability will be higher too. MAS as a system that produces information can provide benchmarking and monitoring and help companies to identify, evaluate and implement appropriate strategies and improve hotel performance. In other words, MAS information is a mediator of the relationship between competition and sustainability performance.

5. Conclusions

The focus of this research lies in the efforts made to improve sustainability performance in Bali, Indonesia, by providing empirical evidence to developing countries. The results showed that the application of strategic management accounting using Porter typology influenced the use of MAS information. Previous studies have examined the relationship between strategic management accounting against the use of MAS information, using the typology of Miles and Snow. Porter's typology focuses more on the company's way of achieving competitive advantages over its competitors to provide a better explanation of the benefits of MAS information.

This study also provides empirical evidence that strategic management accounting influences the hotel's ongoing performance. These findings support previous studies that examined the strategic relationship to the balanced scorecard (BSC) in the manufacturing industry. Furthermore, this study adds a social and environmental perspective to the BSC's perspective. In the hotel industry, the results of this study indicate that hotels implementing environmental-related strategies as competitive advantages can achieve higher environmental performance.

This research has two limitations that should be mentioned, so that they can be developed for future research. Firstly, the sample of this study is too small and only in one area, so caution is needed in generalizing the results. Both of these studies also require regulations and information from the government regarding social and environmental issues, such as Indonesia's occupational health and safety management system which can be useful. Apart from these limitations, this research has implications for practice and theory. Regarding the implications for practice, the research results reveal that this study offers major policy contributions to hotel managers. First, hotel managers who implement strategic management accounting should increase the availability of MAS information. The use of MAS information is an essential variable for improving the hotel's ongoing performance. By using MAS information optimally, managers can gain a better understanding of the external environment and internal business processes, which can help them to make more effective decisions. Second, hotels that implement strategic management accounting by offering superior products or services to customers can improve sustainability performance. Managers will work to improve the skills and efficiency of employees' internal business processes to ensure high-quality services, leading to greater customer satisfaction. Satisfied customers will increase the hotel occupancy rate to bring maximum profits for the hotel.

With respect to theory building, this research can be linked to contingency theory. In the perspective of contingency theory, this study provides evidence that MAS

information can help managers and organizations to adopt and implement their plans in response to competitive environments. In this research, MAS is seen as a system that can provide broad scope, aggregate, timeliness and integration information from internal and historical information traditionally generated by MAS. To survive and succeed, the hotel must be able to know and monitor its environment. For example, how is the threat from potential competitors in the same industry, threats from the intensity nature of competition in industry and bargaining power between suppliers and customers.

This study offers major policy contributions to hotel managers. First, hotel managers who implement strategic management accounting should increase the availability of MAS information. The use of MAS information is an essential variable for improving the hotel's ongoing performance. By using MAS information optimally, managers can gain a better understanding of the external environment and internal business processes, which can help them to make more effective decisions. Second, hotels that implement strategic management accounting by offering superior products or services to customers can improve sustainability performance. Managers will work to improve the skills and efficiency of employees' internal business processes to ensure high-quality services, leading to greater customer satisfaction. Satisfied customers will increase the hotel occupancy rate to bring maximum profits for the hotel.

Author contributions: Conceptualization: DNW; methodology: RS; software: DNW, RS; validation: LRR; formal analysis: TB; investigation: DNW, TB; resources: LRR, RS; data curation: DNW, RS, LRR; writing—original draft preparation: DNW, TB; writing—review and editing: TB, LRR; visualization: DNW, TB; supervision: DNW; project administration: DNW; funding acquisition: DNW, RS. All authors have read and agreed to the published version of the manuscript.

Funding: Research can be carried out for the support and support of sharing funds from the authors' team and other funding sources.

Acknowledgments: The authors are grateful to reviewers for providing valuable comments and suggestions that improve the quality of our paper. The authors are also grateful to the author members who have contributed their time and thoughts so that the research can be carried out.

Conflict of interest: The authors declare no conflict of interest.

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