



The Contingent Factors on Small and Medium-Sized Enterprises Industry Sector

Tri Siwi Nugrahani^(✉), Dhanti Alif Kalandara, and Pradita Nindya Aryandha

Faculty of Business, University of PGRI Yogyakarta, Yogyakarta, Indonesia
trisiwi@upy.ac.id

Abstract. Several SMEs in DIY, especially those engaged in the industrial sector, went bankrupt due to the Covid-19 pandemic which had lasted for two years. One of the causes of SMEs going bankrupt is because they ignore the contingency or uncertainty factor that can affect organizational performance. This study aims to examine the factors that influence business continuity or management accounting practices (MAP) in the industrial sector SMEs in DIY. The research sample is 52 SMEs in the industrial sector in DIY. The technique of determining the purposive sample is that the minimum age of SMEs is 2 years and has a minimum of 2 employees. The technique of collecting data is with a survey based on filling out google forms. While the data analysis used is multiple regression. The research hypothesis is that contingent factors in the form of environmental uncertainty, qualification level of accounting staff, manager participation, company size, and marketing information systems, and the involvement of owners or managers affect management accounting practices. The results of the study show that contingent factors such as environmental uncertainty, qualification level of accounting staff, manager participation, company size, and marketing information systems affect management accounting practices. While the involvement of owners or managers does not affect the success of management accounting practices. Future suggestions should consider contingent factors from the development of operating results so that it can be seen which factors are the most dominant of their effects on management accounting practices.

Keywords: SMEs · The Contingent Factors · Management Accounting Practices

1 Introduction

When the monetary crisis hit in 2008, Small and Medium Enterprises (SMEs) were not significantly affected because they could not stand and did not depend on external supplies. However, with the development of the world and economic progress, SMEs were also affected during this pandemic. Before the pandemic, several SMEs in Indonesia showed rapid progress and even became the breadwinner of the Indonesian economy by having high sales [1]. SMEs accounted for 60 percent of gross domestic product (GDP) and accommodated up to 97 percent of workers, and, in 2018, contributed 60.34% of GDP [2]. In addition, they were also foreign exchange contributors by exporting commodities [3]. However, in this pandemic condition, many SMEs have experienced adversity due to

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their inability to deal with rapidly changing conditions. One of the reasons, they ignored contingent factors in the management accounting practice (MAP); even many SMEs experience bankruptcy. Based on the results of the MAP evaluation survey carried out. MAP use is one way to be done because it has a systematic relationship in presenting information and helping SME leaders achieve goals. So SMEs in Yogyakarta need to pay attention to contingent factors such as providing information on full cost accounting, differential accounting, and responsibility accounting [4].

The problems of SMEs in the Covid-19 pandemic era include limited funds, use of traditional technology, inadequate product quality and innovation, little product marketing, lack of infrastructure, low quality of human resources, and lack of understanding of accounting and finance and business management [5]; [6]. They had a strategic role. Still, their decision-making abilities were low because they could not adapt to critical business conditions and lacked knowledge of accounting issues. So, they fail to develop [7]. SMEs had difficulty making essential decisions because they did not use management accounting practices (MAP) to generate information and make strategic decisions or policies effectively to achieve business goals in a balanced manner between performance, cost, and risk [8]. Contingent factors such as competitive market competition are needed to implement MAP in SMEs, such as using Total Quality Management (TQM) and Just in Time (JIT) [9].

The limited space for SMEs to move with the implementation of Community Activity Restrictions or Pembatasan Pembatasan Kegiatan Masyarakat (PPKM) can limit SMEs' development influenced by internal or external factors. They were the availability of funding sources, the participation of both managers and accounting staff in determining business strategies and digital marketing systems [10]; [11]. External factors are the pandemic condition itself and market competition by maintaining total quality management (TQM) and just in time (JIT). [9] was a continuous improvement by assigning management responsibilities to processes and results with a production system that is only following the demands of customer needs [12]. The pandemic gave rise to many new SMEs engaged in the same business. So it needs creativity and innovation to get consumers' attention [13]. This research used independent variables, namely environmental uncertainty, qualification level of accounting staff, participation of owners or managers, company size, and information systems. At the same time, the dependent variable was MAP.

The conditions of uncertainty during this pandemic sometimes also become opportunities for creative SMEs, such as the emergence of online culinary SMEs or online services and other types of online businesses. One showed that SMEs could adapt to conditions of uncertainty [14]. However, it can also become sluggish if SMEs do not adjust to this Covid condition. Likewise, the industrial sector SMEs in Yogyakarta have problems maintaining their business because these SMEs do not pay attention to contingent factors or uncertainties such as manager participation and information systems and the problem of high returns. [6]. It cannot be separated from human resources in managing and developing a business, including financial factors such as sources of funds for operational activities including loans and non-financial aspects such as strategies used in industry. [8], innovation, use of technology, human resources (HR), and understanding

of accounting and business management [5]. Therefore, this study examined what factors influence the sustainability of handicraft SMEs in DIY to survive during the pandemic?

2 Literature Review

2.1 Contingency Theory

In [15], contingency theory was effective in organizations. Due to contingent factors, it would not necessarily be successful when applied to other organizations with organizational characteristics [16]. Contingency theory explains the relationship between aspects of user behavior and the use of information technology which can vary depending on the situation [1]. Contingency theory states no universally applicable management accounting and control system [17]. In the last few decades, environmental competition has been defined by increasing contingency factors [8]. Contingencies affect a company's user behavior using information technology, depending on the existing situational factors [1]. [12] found in their literature analysis that cost structure, technology, and firm size are part of the contingency factors. This research examined the implications of contingency theory on Small and Medium-Sized Enterprises (SMEs), especially the industrial sector in the Yogyakarta area.

2.2 Small and Medium-Sized Enterprises (SMEs)

Small and Medium-Sized Enterprises (SMEs) are business groups managed by individuals or a particular business entity whose criteria are set based on Law no. 20 of 2008, consisting of micro, small, and medium enterprises [18]. Meanwhile, the Central Statistics Agency (CSA) states that SMEs can be determined from the number of employees because this number is the most easily obtained, namely the number of between 1 to 19 employees as SMEs.

Its existence has a significant role in improving the economy because it can reduce unemployment. It must also always operate because the sustainability of SMEs is the basis for their employees. Therefore, SMEs must also be able to survive various difficulties, including uncertainty in both tasks and the environment, which can disrupt business continuity. Efforts to maintain the sustainability of SMEs pay attention to contingent factors, especially during the Covid-19 period.

2.3 Management Accounting Practices (MAP)

Management accounting practices are tools that produce information for management as a basis for making strategic decisions or policies effectively to achieve business goals with the right balance between performance, cost, and risk [8]. The management accounting practice of each SME is different. It is related to certain factors used as the basis for management to implement management accounting practices that suit their needs. MAP determinants include job costing, variable costs, standard costs, sales budget, purchasing budget, production budget, monthly budget, annual budget, performance appraisal based on operating profit, and performance appraisal based on customer satisfaction. The management accounting system is a system that is formally designed to

provide the information needed by managers to support decision-making and evaluation of managerial activities [19].

Management accounting practice is identifying, measuring, accumulating, analyzing, compiling, interpreting, and communicating information used by management to plan, evaluate and control within an entity to ensure compliance with accountability for using these resources [1]. This management accounting information is presented to the company's management in various reports, such as budgets, sales reports, production cost reports, cost reports by responsibility center, cost reports by activity, and others [20]. The success of accounting practice is closely related to several contingent factors such as environmental uncertainty, qualifications, and requirements of accounting staff, user participation (owners or managers), company size, and marketing information systems.

2.4 Environmental Uncertainty

Environmental uncertainty is a change in the organizational environment both within and outside the organization. An individual's inability to predict something accurately comes from the corporate environment. This term is essential because such conditions can complicate planning and control. Environmental uncertainty as a contingency factor will help SMEs manage their business [21]. One has a close reciprocal relationship with a business performance at the superficial level, affecting MAP use [14]. At times of high uncertainty, the contemporary management accounting system positively affects performance, while for low uncertainty, the modern management accounting system has a negative effect [17]. When the uncertainty of the external environment is quiet, managers can make decisions based on the information provided by traditional PAM. Previous research has shown that environmental uncertainty significantly affects strategic planning in SMEs [22]. Based on this explanation, the first hypothesis is formulated as follows:

H1: Environmental uncertainty affects the use of management accounting practices

2.5 Qualification of Accounting Staff Requirements

Based on [23], excellent and professional accounting staff can meet qualifications. It is experienced as an accountant for at least one year. They also can operate Ms.word and Ms.Excel. They must understand accounting information systems, have proficient skills in mathematics, be thorough, and have good communication skills. Staff may work together in a team, are committed, have integrity, and are independent, have a minimum education of SMK Accounting, D3 Accounting, or a bachelor of Accounting graduates, understand accounting applications/software such as MYOB, and so on and can make financial reports.

The qualification level of accounting staff has some limited resources, resulting in SMEs not having the appropriate qualifications, not having sufficient training, or not being motivated to innovate, thereby reducing the likelihood of MAP adoption [24]. The implementation of MAP on the qualifications of internal accounting staff must be in line with 3 (three) levels of business activity actions, namely strategic, tactical, and operational. [8]. Accounting staff must have responsibilities and roles carried out simultaneously, not only focusing on one managerial area. Previous research has shown

that accounting staff significantly influence the adoption of MAP [25]. Based on this explanation, the formulation of the second hypothesis is:

H2: The level of qualification of accounting staff affects the use of management accounting practices.

2.6 Owner or Manager Participation

Based on Kusumastuti dan Iwandi (2012), user participation in system planning is one of the factors that can affect user performance. It is the behavior, work, and activities carried out by users while developing information systems. User participation is expected to increase system acceptance by system users. Those are by setting realistic expectations of system capabilities, providing a means of bargaining, solving conflict problems around system design issues, and minimizing resistance to changes from users to information has been developed.

SMEs need to be aware of marketing, technology, and access to capital that can affect their business success [6]. The owner or manager is a determinant of the company's strategy and business processes, so the characteristics of the owner or manager in SMEs become an essential factor in improving financial performance through the ability to market the products produced. The owner or manager also has the authority to allocate the resources needed for the MAP process. If the owner or manager views that the accounting process is not too necessary to apply, then management accounting cannot be used for decision-making [27]. Therefore, owners or managers who have a high sense of responsibility and commitment to the company will encourage the use of MAP in improving company performance [17]. Previous research has shown the effect of owner participation on the decision-making process [28]. Based on this explanation, the formulation of the third hypothesis is:

H3: The participation of owners or managers affects management accounting practices.

2.7 Company Size

As stated [29], Company size is a measure that is grouped based on the size of a company. One way that can be used to classify the size of a company can be to see how significant the assets owned by a company are. Assets are used as the basis for determining the size of a company because assets are considered to have a more stable level than others and tend to be continuous between one period and the next.

The use of MAP can be influenced by the external environment and factors within the organization. In general, larger companies use MAP more than small companies. Its use is in line with the company's size [30]. Larger companies also have more complex business processes to have more difficult challenges. Therefore, large companies require PAM, which provides more accurate, detailed, and up-to-date information about all functions and activities within the organization [31]. Previous research has shown that company size significantly influences MAP use by SMEs [17]. Based on this explanation, the formulation of hypothesis 4 is as follows.

H4: Company size affects the use of management accounting practices.

2.8 Marketing Information System

As explained in [26], an information system is a set of interrelated components that collect, process, store, and distribute information to support decision-making and control. Information system technology in the management of SMEs can be defined as the activities of electronic-based micro, small and medium-sized businesses that utilize the internet and web and android-based information technology. SMEs' utilization of information system technology is expected to increase productivity and product sales [32]. Meanwhile, marketing information systems are individual and organizational activities that facilitate and accelerate satisfying exchange relationships in a dynamic environment by creating distribution, promotion, and pricing of goods, services, and ideas. [13].

The development of information technology influences the marketing information system [33]. Information systems for marketing products and services for Small and Medium-Sized Enterprises (SMEs) will influence MAP adoption. It is still at a basic level, where IT and marketing information systems are only used to support decision-making and evaluation of managerial activities [5]. In addition, the marketing information system aims to process data related to marketing issues into a marketing information system that is needed by management to make decisions to implement MAP implementation.

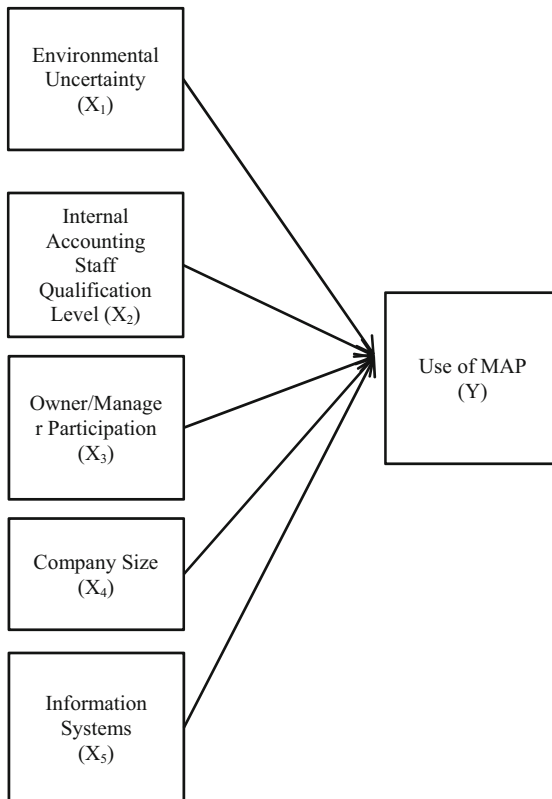


Fig. 1. Research Model

SMEs are aware that implementing it by using a marketing information system carried out through the WEB as a marketing medium will help management be effective and help increase sales of SME products or services [34]. Previous research has shown that marketing information systems significantly affect customer satisfaction [35]. Based on the explanation above, the formulation of the fifth hypothesis is:

H5: Marketing information system influences the use of management accounting practices.

When described this research model as in Fig. 1.

3 Research Method

This research used the descriptive-quantitative method to explain the influence of contingent factors on management accounting practice (MAP)—52 SMEs in the industrial sector in DIY as the sample of this study. The sampling technique used was purposive sampling, namely for SMEs with a minimum of two employees and a marketing information system. The data of this study are primary, namely, data obtained from direct sources. The data collection technique used a research questionnaire with a Google Form, which contained research theme questions and online interviews. Data analysis with multiple regression.

4 Research Result

The research sample has 52 SMEs in the industrial sector in the DIY region. The following Table 1 shows the research sample. Most of the samples consist of industries, and the lowest is in the service sector. The following is the sample data for this research.

Based on the characteristics of respondents from 52 samples, Table 2 can be shown based on: gender, age, position, education of respondents, length of business, and the number of employees as follows.

Table 2 shows the majority of the sample are females aged 36–45 years and have graduated from senior high school. Most of the respondents are owners who can guide participation in developing better SMEs.

Table 1. Research Sample

No	Area	Type of Business			
		Services	Craft	Convection	Total
1	Yogyakarta	2	11	6	19
2	Bantul	1	0	3	4
3	Sleman	3	7	0	10
4	Kulon Progo	0	19	0	19
	Total	6	37	9	52

Source: Processed primary data, 2022

Table 2. Characteristics of Respondents

Characteristic Type	Description	Frequency	Percentage
Sex	Males	20	38,50%
	Females	32	61,50%
Age	<25 years old	4	7,70%
	25–35 years old	11	21,20%
	36–45 years old	19	36,50%
	46–55 years old	13	25,00%
	>56 years old	5	9,60%
Position	Staff	17	32,70%
	Manager	0	0
	Owner	32	61,50%
	Manager as owner	3	5,80%
Education level	Elementary School	1	1,90%
	Junior High School	5	9,60%
	Senior/Vocational High School	31	59,60%
	Diploma-3	5	9,60%
	Bachelor	10	19,20%
Working Period	1–4 years	5	9,60%
	5–10 years	8	15,40%
	More than 10 years	39	75,00%
Number of employees	1–4 employees	20	38,50%
	5–19 employees	28	53,80%
	20–100 employees	4	7,70%

Source: Processed primary data, 2022

The validity test results show that all question items from all variables were valid. It was evidenced by the P-value or significance of <0.05 . It means all the questions asked by the researcher in the questionnaire to the respondents can be used as an appropriate measuring tool. Apart from that, this study also conducted a validity test. The reliability test results show that all variables are reliable or can be trusted. It can be used as a data collection tool with Cronbach's Alpha > 0.60 , reliable.

Based on the results of hypothesis testing using multiple regression, it can be shown in Table 3.

Based on Table 2 obtained the following equation:

$$Y = 51,486 + 2,589 X_1 + 10,917 X_2 + 0,929 X_3 + 2,746 X_4 - 0,572 X_5 + e$$

Table 3. Multiple Linear Regression Test Results

Model	Unstandardized Coefficients		T	Sig	Result
	B	Std. Error			
(Constant)	51,486	9,731	5,291	0,000	
Environmental Uncertainty	2,589	1,337	1,936	0,059	H ₁ : Supported
Accounting Staff Qualification	10,917	4,839	2,256	0,029**	H ₂ : Supported
Owner/Manager Participation	0,929	3,420	0,729	0,470	H ₃ : Unsupported
Company Size	2,746	1,390	1,975	0,054	H ₄ : Supported
Information Systems	-0,572	0,885	-0,646	0,522	H ₅ : Unsupported
F = 11,499; Sig = 0,000; Adjst Square = 0,507					

Source: processed primary data, 2022

Description:

Y = MAP Usage

X1 = Environmental Uncertainty

X2 = Qualification of Accounting Staff I

X3 = Owner/Manager Participation

X4 = Company Size

X5 = Marketing Information System

e = Error

Table 2 shows that the calculated F value is 11.499 with a significance level of 0.000, less than 5 percent. It can be concluded that all independent variables simultaneously have a significant effect. The results of hypothesis testing show that environmental uncertainty has a significance value of 0.059, which means that the ecological uncertainty variable has a moderate impact. MAP use has a significance value of 5 percent but less than 10 percent. The variable level of qualification of internal accounting staff has a significance value of 0.029, which means that the variable level of qualification of internal accounting staff affects the use of MAP because it has a significance value of less than 5 percent. The owner or manager participation variable has a significance value of 0.470, which means that the owner or manager participation variable does not affect the use of MAP because it has a significance value of more than 0.05; The company size variable has a significance value of 0.054. It indicates that the company size variable has a moderate effect on MAP use because the t-test results have a value of 5 percent but less than 10 percent. Meanwhile, the marketing information system variable has a significance value of 0.522, which means that the marketing information system variable does not affect the use of MAP. The Adjusted R square value of 0.507 shows that environmental uncertainty, qualification level of internal accounting staff, owner participation, company size, and information systems have an effect of 50.7 percent on the use of PAM in SMEs, and the remaining 49.3 percent is influenced by variables others that were not investigated in this study.

5 Discussion

5.1 The Effect of Environmental Uncertainty on MAP

The results of the first hypothesis test show that t-value of 1.936 and a significance value of 0.059. It means that moderate uncertainty affects the use of MAP. The higher the environmental tension in SMEs, the use of MAP will also increase, and vice versa. If the ecological uncertainty is lower in SMEs, MAP use in SMEs is also low. It can also be seen in SMEs in DIY, who realize that competition in the purchase of raw materials and price competition is so important. Because of the large number of products circulating in the community and economic instability, SMEs inevitably have to use maps such as calculating the cost of goods ordered, purchasing budget, production budget, monthly budget, annual budget, performance appraisal based on operating profit, and performance appraisal based on customer satisfaction.

The results of this study are in line with research [17] which states that environmental uncertainty affects the use of MAP. Likewise, the uncertain external environment is often faced by SMEs. Still, it can be controlled and anticipated through internal mechanisms, one of which is the use of contemporary MAP following the study. [22] which states that the level of environmental uncertainty positively affects the adoption of strategic planning in SMEs. One can happen because the higher the level of environmental uncertainty, the SMEs must further improve the strategic planning process. The industrial and economic environment impacts the level of uncertainty faced by SMEs due to the limited resources they have. The study results align with contingency theory which states that appropriate accounting and control techniques depend on circumstances or contingent factors that affect the company. In addition, environmental uncertainty as a contingency factor says that an effective organization pays attention to the right environment and its subsystems.

5.2 Effect of Accounting Staff Qualification on MAP

The t-value on the qualifications of the internal accounting staff is 2, with a significance value of $0.029 < 0.05$; the capabilities of the internal accounting staff affect the use of MAP, and the second hypothesis is supported. This result means that the higher the qualification level of the internal accounting staff in SMEs, the higher the use of MAP and vice versa; if the lower the qualification level of the internal accounting staff in SMEs, the use of MAP in SMEs is also low. It can also be seen in the SME centers in DIY that already have financial accounting staff, but most of them with the lowest education level are Senior/ Vocational High School. Although most subordinate accounting staff have a Senior/ Vocational High School education, they have studied the basics of accounting, financial, and management accounting. The results of this study are in line with research [22] that concluded that the knowledge of internal accounting staff about contemporary management accounting increases the likelihood of a company to use an integrated performance measurement system; for example, the Balanced Scorecard in SMEs. It could be because the internal accounting staff, as the control holder of the SME process, pays attention to the use of MAP, which is one source of financial information.

This study also supports the contingency theory, which states that appropriate accounting and control techniques depend on circumstances or contingent factors that

affect the company. Several critical contextual factors can affect the accuracy of the selection of accounting techniques, namely the external environment, traditional and contemporary technology, organizational structure, size, strategy, and national culture [36].

5.3 Effect of Owner's or Manager's Participation on MAP

Testing of hypothesis 3 showed the t-value of owner/manager participation is 0.729 with a significance of $0.470 > 0.05$. It means the hypothesis is not supported, and owner/manager participation has no effect on the use of management accounting practices (MAP). Much or little involvement of owners or managers does not affect MAP use in these SMEs. It is because the owners or managers are not very familiar with matters related to management accounting. In addition, SME owners or managers who do not have the motivation to earn high profits, improve quality and new product ideas, and personal development tend not to have a strong desire or drive to advance their business. This condition can be seen in several SMEs located in DIY, which has been around for a long time, but the profit value does not increase every year.

Most SMEs started as self-employed businesses, so the owner or manager had a significant role in determining the innovation policy of SMEs, but in DIY SMEs, the role of the owner or manager did not participate in the use of PAM. The results of hypothesis testing support the research [37]. It states that SME owners or managers are not very familiar with matters related to management accounting because they do not commit to using MAP, where management style determinants to provide appropriate managerial information are not used. The study results do not support the contingency theory, which states that organizational needs will be more satisfied if they are designed and applied a management style appropriate for the task and nature of the workgroup. Managers must look at situations in isolation and need to develop the most valuable skills in identifying critical situational factors.

5.4 Effect of Company Size on MAP

Based on Table 2 shows the t-value of company size is 1.975 with a significance value of 0.05. It shows that the company's size has a moderate effect on MAP use. The larger the size of the SME, the higher the use of MAP and vice versa. If the size of the SMEs is smaller, the use of MAP in the SMEs is also low. The results of this study indicate that the company's size affects the use of MAP. One supports research [30], which states that company size has a significant positive effect on using cost and performance appraisal systems. Also, following the study [22], the larger the company's size, the more likely the SMEs are to use an integrated performance appraisal system.

The results of this study are in line with contingency theory which states that an organization will be effective if it pays attention to a well-designed organizational system and applies the right management style for the tasks and nature of the workgroup. Several key contextual factors can affect the accuracy of the selection of accounting techniques, namely the external environment, traditional and contemporary technology, organizational structure, size, strategy, and national culture [36].

5.5 Effect of Marketing Information System on MAP

Testing the fifth hypothesis shows that the marketing information system does not affect MAP use because the significance is > 0.949 . This condition means that whether or not the information system is used does not affect MAP use in DIY SMEs. The marketing information system among DIY SMEs is still not given much attention, such as the use of websites that are mostly deemed not to help the process of marketing the products/services of these SMEs. In addition, ordering information, product information, and accessibility are considered not to facilitate management in managing SMEs effectively.

Study results support the research [5], which states that the internationalization of SMEs in Indonesia still has challenges such as limited knowledge of markets, trade regulations and policies, and barriers to communication and financing. Research results support the study [13]. Information systems do not directly influence competitive advantage, but the existence of a marketing information system will affect customer loyalty to SMEs. It is contrary to contingency theory, which states that an organization will be effective if it pays attention to the right environment and subsystems. SMEs must consider several critical contextual factors because they can affect the accuracy of the selection of accounting techniques, namely the external environment, traditional and contemporary technology, organizational structure, size, strategy, and national culture [36].

6 Conclusion

Based on the results of data analysis and discussions that have been carried out, it can be concluded that contingent factors need to be considered by DIY SMEs in the use of MAP, including small-scale SMEs. The DIY UKM Center has implemented several things related to management accounting, including calculating job costs, variable costs, standard costs, sales budgets, purchasing budgets, production budgets, monthly budgets, annual budgets, performance appraisals based on operating profit, and performance appraisals based on customer satisfaction.

The hypothesis test results show that environmental uncertainty partially affects the use of MAP; thus, H1 is supported. The results of hypothesis testing two indicate that the qualification level of internal accounting staff influences the use of MAP. Thus, H2 is supported. While the results of the third hypothesis test show that the participation of owners or managers does not affect the use of MAP because the significance value is far from 0.47. The owners or managers of SMEs do not have the motivation for high profits, quality improvement and new product ideas, and personal development. They tend not to have a strong desire or drive to advance their business. Testing hypothesis 4 shows that firm size affects MAP. Company size influences the use of management accounting practices. The larger the size of the SMEs, the higher the use of MAP and vice versa. If the size of the SMEs is smaller, the use of MAP in the SMEs is also low. The results of hypothesis testing 5 show that the information system does not affect MAP use. The marketing information system among DIY SMEs is still not given much attention, such as the use of websites which are mostly deemed not to help the process of marketing the products/services of these SMEs. In addition, ordering information, product information, and accessibility are considered not to facilitate management in

managing SMEs effectively. Overall, the contingency factors affect the use of MAP used by SMEs in DIY with the level of influence 50.70%, and the rest outside the research model. This study has limitations only on testing the industry in all sectors.

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