



Factors Affecting the Application of Management Accounting to MSMEs

Asep Suryana¹, Asep Achmad Rifa'i², Deri Firmansyah^{3*}

¹ STIE PGRI Sukabumi, West Java

^{2,3} STIE Pasim Sukabumi, West Java

Corresponding Author: Deri Firmansyah dery.rezky12@gmail.com

ARTICLE INFO

Keywords: Human Resource Skills, Business Characteristics, Business Environment, Business Strategy, Application of MA

Received : 30, December

Revised : 20, January

Accepted: 22, February

©2023 Suryana, Rifai'i, Firmansyah:
This is an open-access article distributed under the terms of the [Creative Commons Atribusi 4.0 Internasional](https://creativecommons.org/licenses/by/4.0/).



ABSTRACT

The success of an enterprise depends on many managerial decisions that are based on accounting information, in particular management accounting (MA). There are several factors that influence the application of MA in individual and group business, entrepreneurship and MSMEs. This study examines and analyzes the factors that influence the application of MA to MSMEs with HR's Skills, business characteristics, business environment and business strategy. The research sample was 34 MSMEs actors, using purposive sampling techniques. Research findings prove that human resource skills, business characteristics, business environment, and business strategy have a significant positive effect on the application of MA both individually and simultaneously. Management accounting seems to continue to be a scientific tool for managers to carry out operations, control and decision-making in a satisfactory way. The effectiveness of implementing MA is increasingly important to improve operating efficiency and management performance.

INTRODUCTION

Changes in the global business environment have driven the transformation of Small and Medium Enterprises (SMEs) to move towards sustainability with a focus on efficiency in each of their business operations (Azudin & Mansor, 2018). This is a challenge that must be able to be carried out and overcome in an increasingly competitive business environment in the era of globalization (Nguyen et al., 2019). Because it has become a demand for business model practice from time to time in order to be able to maintain business balance amid the massive shadow of changes in the business environment that continue and continue to occur (Firmansyah, Susetyo, et al., 2022). The success of a company depends on many managerial decisions that are based on accounting information, in particular management accounting (Burns & Scapens, 2000), that is, information intended and used by internal parties rather than external to the company in relation to various strategies and business decisions it takes in an effort to achieve goals (Horngren et al., 2015; Firmansyah & Saepuloh, 2020). Where the quality and efficiency of accounting gives a direct impact on the quality and efficiency of the management of the organization's operations for the achievement of planned goals (Bhimani, 2003).

Management Accounting (MA) seems to continue to be a scientific tool for managers to carry out operations, control and decision-making in a satisfactory manner (Kaplan & Norton, 1996; Horngren et al., 2004). Therefore, it is not an exaggeration to be recognized if Management Accounting has recently been recommended by many studies and the need and importance of management of organizational and corporate operations has been proven, even in the context of personal business (PB), family business (FB) and entrepreneurship including SMEs (Pierce & O'Dea, 1998; Hyvönen, 2007; Salvato & Moores, 2010; Songini et al., 2013; Prencipe et al., 2014; Senftlechner & Hiebl, 2015). However, personal businesses, family businesses or SME categories may not necessarily be able to adopt Management Accounting comprehensively to be implemented due to the scale of their business size (demographic factors and business characteristics) (Jorissen et al., 2005; Senftlechner & Hiebl, 2015).

In strategic decision-making practices, PB is seen to usually consider a longer time horizon than non-personal business (NPB) because in PB decisions even FB can affect not only the current generation but also one or more family successors (Senftlechner & Hiebl, 2015). Therefore, the long-term survival of PBs, which are often considered one of their main goals, can be influenced by strategic decisions (Sirmon & Hitt, 2003). In practice, both PB and FB based on business characteristics, classifications and business criteria can be said to be MSME actors ((Wahdiniwaty, Firmansyah, Suryana, et al., 2022; Firmansyah & Saepuloh, 2022). However, if the business is carried out alone (self-employee) or a group of individuals who take advantage of opportunities and create new businesses where the market has not been formed and clearly identified and then developed, it is more appropriate to call entrepreneurship. Ireland et al., (2009;21), mention that entrepreneurship can be defined as the process by which an individual or group of individuals, in association with an existing organization, creates a new organization or triggers renewal or innovation

within that organization (Theriou & Chatzoudes, 2015; Firmansyah, 2022a). Along with its development, entrepreneurship can also improve effective operations in accordance with strategic goals, by adopting the application of management accounting and even complementing its management. The results of the synthesis of multidisciplinary research are many that highlight the practice of management accounting in entrepreneurship. In this study, it emphasizes more on the factors that influence the application of management accounting in the context of MSMEs, but entrepreneurship is worth describing to complete the findings in the discussion.

There are several factors that influence the application of management accounting in individual and group businesses, entrepreneurship and MSMEs globally, including in Indonesia, both business actors located in urban areas and in remote rural areas in various districts. Informality, centrality, trust and interpersonal values, geographical aspects are some of the factors that influence the application of management accounting (Senftlechner & Hiebl, 2015). While Duréndez et al., (2011); Giovannoni et al., (2011), mentioned that the implementation of a management accounting system is influenced by performance and objectives, where the application of the MA system has a positive effect on internal business communication. Other factors that are more common and influential on the application of MA, for example the characteristics of production and business, information complexity, market competition, human resources (HR) related skills for future entrepreneurship (Firmansyah, Rifa'i, et al., 2022). On the other hand, business strategy, awareness of the importance of management accounting, business intensity and competition, number of employees and use of technology also influence the application of MA (Nair, 2017; Chenhall, 2003; Choe, 2004). The business development of the digital economy era, digital literacy and multiliteration including economic literacy, financial literacy and behavior can influence strategic decisions for individuals and groups (Firmansyah & Susetyo, 2022), because ma will be related to two types of information (qualitative and quantitative /monetary/financial units).

The results of the previous study showed different findings regarding the factors that influence the application of MA to business practices at various types and levels. Apart from differences and intersections, it is recognized that there are indeed many factors that influence the application of MA in the context of MSMEs according to the intervention, consistency and context they study. This study examines and analyzes the factors that influence the application of management accounting to MSMEs. Skills and quality of human resources, business characteristics and organizational size, business environment and intensity of competition, business strategy and technology are considered as factors influencing the application of MA in MSMEs. The research was conducted on MSME actors located in the Sukabumi Regency area, with the objects studied by more than 30 MSME actors.

LITERATURE REVIEW

Skills and Quality of Human Resources

Skills are an important component of the capacity for the absorption and implementation of new ways and systems (Leiponen, 2005). Agency theory suggests that it is desirable to operate incentive systems for agents, directors or managers, to motivate and reward acceptable behavior (Armstrong, 2006), and competitive advantage is achieved if the company's resources are valuable, scarce, and expensive to replicate. (Armstrong, 2006), mentions the term human resources (HR) reducing people to the same value categories as materials, money, systems and technologies, all resources, and *resources* are only valuable to the extent that they can be exploited or utilized, becoming economic value. Human resource skills and quality help expand companies in an economy that have the potential to innovate in successful operations (Firmansyah, Rifa'i, et al., 2022).

The presence of quality employees in the field of accounting, becomes an important factor that affects the application of management accounting to MSMEs. Large companies often have dedicated accounting/finance departments, so they tend to hire accountants who are qualified enough to make reports, as well as offer professional advice. On the contrary, there is doubt that not all small businesses employ qualified accounting staff (Nguyen et al., 2019). Chang (2020) findings, show the presence of professional accountants has met the conformity with a high level of knowledge about the application of management accounting in companies, h. the presence of professional accountants in SMEs allows the application and development of management accounting in SMEs. The existence of a strong and qualified management accountant encourages professionalism for the MA system (Moilanen, 2008). The findings of Hiebl et al., (2012), relativize the potential role of HR skills and financial experts as agents of change in MA.

H_1 : Skills and quality of human resources affect the application of management accounting to MSMEs

Business Characteristics and Organization Size

Impacting factors on the regulation of the structure and control of the company, are estimated to be influenced by business characteristics and the size of the organization (Chenhall, 2003; Nguyen et al., 2019). Because the larger a company will have resources capable of implementing management accounting at a more complex level than a small company. The complexity of accounting systems and cost estimation tends to increase, according to the size of the company (Haldma & Lääts, 2002). Large companies often have a larger total resource, as well as a better internal communication system, which makes communication regarding the implementation of management accounting easier. Ling-yee & Ogunmokun (2008), mention large companies often have better financial resources to cover the cost of accounting information, compared to small companies. In addition, the amount of information that managers and accountants of large companies have to handle is greater than that of small companies. Hutaibat (2005), suggests that there is a close relationship between the size of the company (measured by the number of employees and revenue)

and the application of management accounting (Nguyen et al., 2019). The increasing complexity through succession, professionalization, and growth, creates the need for change and a more formal control system with the implementation of MA practice (Giovannoni et al., 2011).

H_2 : Business characteristics affect the application of management accounting to MSMEs

Business Environment and Competition Intensity

In the era of disruption, environmental changes continue to occur massively and anyone needs to develop a new ideology, concept or even paradigm for economic philosophy, which can solve all problems, becoming a prerequisite for the necessary transition (Firmansyah, Rifa'i, et al., 2022; Wahdiniwaty et al., 2022). There is pressure and competition between one business and another in a market both related to the variety of products, the application of selling prices and services which continues to show the intensity of market competition (Cadez & Guilding, 2008). The practice of MA is necessary for organizations due to the competition and complexity of the business environment, where the application of MA helps organizations to determine the resources expended in each production process (Leite et al., 2016). Increasing the complexity and size of a business requires a more sophisticated and formal MA system (Giovannoni et al., 2011; Neubauer et al., 2012). The findings of Zainun Tuanmat & Smith, (2011), show that the complexity of the external environment of the business affects the application of MA. Meanwhile, the results of the research of Choiriah & Sudibyo (2020), found that competition, competitive advantage, organizational culture, and sustainable leadership have a positive and significant relationship to the successful implementation of the management accounting information system. Ghasemi et al., (2016), found that the complexity of the business environment and market competition influenced the application of management accounting systems and had implications for managerial performance.

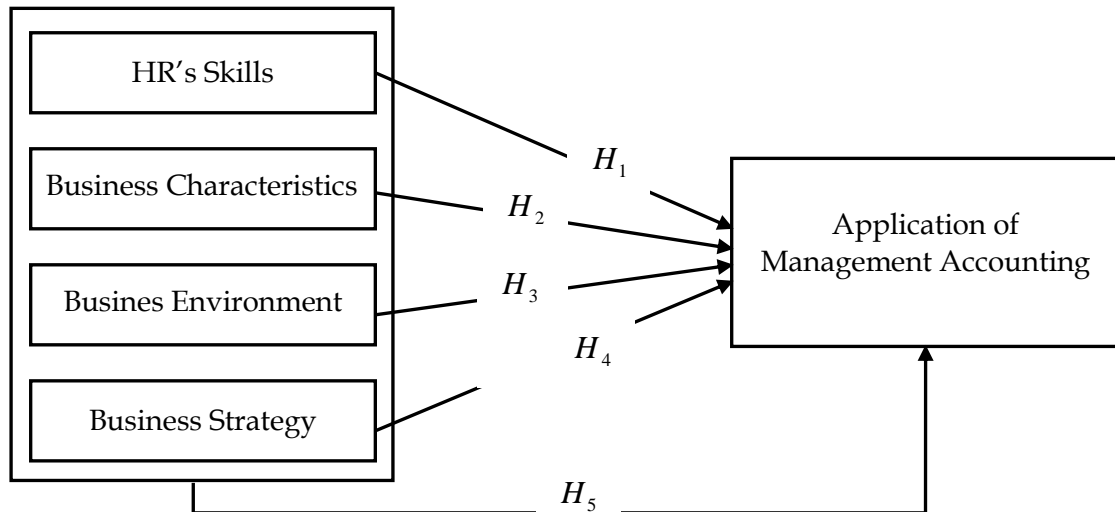
H_3 : The business environment affects the application of management accounting to MSMEs

Business Strategy

Strategy is a relevant way that can be chosen from a variety of alternative strategy plans. Whenever a business enterprise is established, it either explicitly or implicitly uses a specific business model that describes the design or architecture of value creation, delivery, and the capture mechanisms it uses. At the heart of the business model is a strategy on how to determine how companies deliver value to customers, persuade customers to pay value, and turn those payments into profits (Teece, 2010; Saepuloh et al., 2020). The application of management accounting relates to business strategy (Choe, 2004). Competitive advantage is up for grabs in the market arena, companies often implement management accounting systems to support specifically prioritized strategies to achieve this process. Customer-focused business strategies combined with the application of management accounting can improve

customer performance (Hyvönen, 2007). Finally, the selection of a company or the changes that occur in the business strategy will lead to the implementation of different management accounting and must be better and appropriate. The results of the study of Senftlechner & Hiebl (2015), found that business strategies and objectives influence the orientation of the application of MA in the context of family business, including entrepreneurship and the scope of SMEs.

H_4 : Business strategy affects the application of management accounting to MSMEs



Scheme 1. Conceptual Framework Model

Source: Developed Author (2023)

H_5 : HR's skills, business characteristics, business environment and business strategy affect the application of Management Accounting to MSMEs

METHODOLOGY

This study uses quantitative calculations used by conducting explanatory and causal analysis. Creswell (2014), mentions that quantitative research is an approach to testing objective theory by testing relationships between variables. Explanatory research as a study that studies the relationship between two or more variables through hypothesis testing (Cooper et al., 2014).

This study *cross-section* of 34 respondents, selected by purposive sampling technique. Respondent nominations are specifically based on selected criteria to meet certain goals (Firmansyah, 2022b). The sample criteria are MSME actors in Sukabumi district, a set of instruments is deployed. Respondents' responses were inputted with the Spreadsheet application on MS. Excel, then analyzed using the help of the SPSS v26 program. Quality tests and data prerequisites were carried out, data analysis with pearson correlation analysis, multiple regression and coefficient of determination analysis (*Adj. R²*). In the final stage of analysis to answer research questions (RQ) and to prove the proposed research hypothesis, a test of the significance of the influence of each latent

exogenous variable on latent endogenous variables was carried out both individually and simultaneously, namely with the t test ($t_{stat}, p = \alpha = 0.05$) and the F test ($F_{stat}, p = \alpha = 0.05$). As for the multiple linear regression equation, it is formed on the basis of the following equation:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + e \dots \dots \dots (1)$$

RESEARCH RESULTS

The estimator of empirical concepts is developed from theoretical concepts:

Human resource skills	= HR's Skills = 7 HRSkilss	
Business characteristics	= BC	= 9 bc
Business environment	= BE	= 4 ino
Business strategy	= BS	= 7 bs
Application of Management Accounting	= I-MA	= 10 ma

Instrument Test Results

HR'Skills instrument test results (X_1) valid and reliable test results from HRSkills1 - HRSkills7 = 7 items, $C_\alpha = 0.709$ ($C_\alpha > 0.70$). The Business Characteristic Variable (X_2) is declared valid and reliable is a composite of BC1, BC3, BC6, BC7, BC8, and BC9 = 6 items, $C_\alpha = 0.694$ ($C_\alpha > 0.60$). Business Environment variables (X_3), declared valid from BE1, BE2, BE4, BE5, and BE7 = 5 items, with $C_\alpha = 0.780$ ($C_\alpha > 0.70$). Business strategy variables (X_4), test results are declared valid and reliable from BS2, BS4, BS5, BS6 and BS7 = 5 items, $C_\alpha = 0.601$ ($C_\alpha > 0.60$). Also for the Management Accounting Application variable (Y), the test results are declared valid and reliable from I-MA1 to IMA10 = 10 items, with $C_\alpha = 0.766$ ($C_\alpha > 0.70$).

Classical Assumption Test Results and Data Prerequisite Test

Meanwhile, the test results of classical assumptions are known that the data are normally distributed (K-S NPar tests; Asymp Sig. = 0.200^{c,d} > $p; \alpha = 0.05$), there was no heteroskedasticity problem with the Glejser test. There is also no symptom of multicholinerity between independent variables (tolerance value > 0.10; VIF < 10.0).

Pearson Correlation

The pearson correlation test is used to determine the closeness of the degree of closeness of the relationship between independent variables and variables.

Table 1. Pearson Correlation Test Results

		Application of MA	Human Resources Skills	Business Characteristics	Business Environment	Business Strategy
Application of MA	Pearson Correlation	1	.793**	.810**	.414*	.622**
	Sig. (2- tailed)		.000	.000	.015	.000
	N	34	34	34	34	34

Source: Authors Calculation Results (2023)

From the results of the correlation test, it can be seen that human resource skills have a correlation (r) = 0.793, business characteristics with a value of r = 0.810, a business environment of r = 0.414, and business strategies have a value of r = 0.622. This result can be explained that human resource skills and business strategy have a strong level of correlation with the application of management accounting, the correlation of business characteristics with management accounting is at a very strong level of closeness, and there is a correlation between the business environment and the application of management accounting, where the level of closeness of the relationship between the two is moderate. The relationship between each of the variables is positive and significant.

Coefficient of Determination

To determine the magnitude of the ability to explain independent variables to the dependent variables seen from the value of $Adj. R^2$.

Table 2. Model Summary

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.906 ^a	.821	.796	2.367	1.340

a. Predictors: (Constant), BS, BE, HR's Skills, BC

b. Dependent Variable: Application of MA

Source: Authors Calculation Results (2023)

$Adj. R^2$ value of 0.796 = 79.6%, The amount of joint contribution of human resource skills, business characteristics, business environment, and business strategy together in influencing the application of management accountants amounted to 79.6% of the total variance of MA implementation. The implication of 20.4% is the remainder of the MA application variance, influenced by other variables not included in the model.

Multiple Linear Regression Analysis

Multiple regression analysis tests the regression coefficients of each independent variable and dependent variable, which is useful for predicting the dependent behavior of the variable when the independent variable changes.

Table 3. Coefficients

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics		
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	1.403	3.739		.375	.710		
	HR's Skills	.585	.171	.375	3.418	.002	.514	1.946
	BC	.650	.159	.480	4.086	.000	.448	2.233
	BE	.023	.223	.010	.102	.920	.668	1.497
	BS	.357	.163	.210	2.184	.037	.665	1.503

a. Dependent Variable: Application of MA

Source: Authors Calculation Results (2023)

From the *coefficients*^a table above, a constant (a) is obtained is 1.403, while human resource skills (b_1) are 0.585, business characteristics (b_2) are 0.650, business environment (b_3) is 0.023, and business strategy (b_4) is 0.357, so the regression equation can be written:

$$Y = 1,403 + 0,585X_1 + 0,650X_2 + 0,023X_3 + 0,357X_4.....(2)$$

The equation can be translated that human resource skills, business characteristics, business environment, and business strategy have a positive relationship and are in the same direction as the application of MA. The rise and fall or effectiveness of the value of applying MA is predicted by changes in human resource skills, business characteristics, business environment, and business strategy, changes are very possible to occur with positive and unidirectional values.

Hypothesis Test Results

The significance of the influence of human resource skills, business characteristics, business environment, and business strategy individually on the application of MA is seen from the results of the coefficient with separate inputs carried out individually from each impacting variable with responsive variables (table 4).

Table 4. Individual Influence Significance Test Results

	Hypothesis	Stdz. Coeff. Beta	t-Stat	Sig.	Results
H_1	Business characteristics have a significant positive effect on the application of management accounting to MSMEs	.793	7.363	.000	Accepted
H_2	Business characteristics have a significant positive effect on the application of management accounting to MSMEs	.810	7.817	.000	Accepted
H_3	The business environment has a significant positive effect on the application of management accounting to MSMEs	.414	2.573	.015	Accepted
H_4	Business strategy has a significant positive effect on the application of management accounting to MSMEs	.622	4.496	.000	Accepted

Source: Authors Calculation Results (2023)

All hypotheses proposed in this study are proven and accepted, that HR Skills have a positive effect on the application of MA, and significantly on t_{stat} ; $p < \alpha$ ($t_{stat} = 7.363$; $0.000 < 0.05$). Business characteristics positively affect the application of MA, significant on t_{stat} ; $p < \alpha$ ($t_{stat} = 7.817$; $0.000 < 0.05$). Also the business environment positively affects the application of MA, significant on t_{stat} ; $p < \alpha$ ($t_{stat} = 2.573$; $0.015 < 0.05$). As well as business strategy has a positive effect on the application of MA, and significant on the application of MA, and significant on t_{stat} ; $p < \alpha$ ($t_{stat} = 4.496$; $0.000 < 0.05$). For the significance test of the influence simultaneously seen from the ANOVA results (table 5 and table 6).

Table 5. Analysis of Variance (ANOVA)

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	744.908	4	186.227	33.228	.000 ^b
	Residual	162.533	29	5.605		
	Total	907.441	33			

a. Dependent Variable: Application of MA

b. Predictors: (Constant), BS, BE, HR's Skills, BC

Source: Authors Calculation Results (2023)

Analysis of Variance (ANOVA) is a statistical tool used for hypothesis testing. According to ANOVA analysis, the model is statistically significant because the value of $p = \text{Sig.} = 0.000$ is smaller or below 0.05 ($p = \text{Sig} < \alpha$).

Table 6. Concurrent Effect Significance Test Results

	Hipotesis	F-Stat	Sig.	Results
H_5	HR's skills, business characteristics, business environment and business strategy affect the application of Management Accounting to MSMEs	33.228	.000 ^b	Accepted

The hypothesis is accepted and proven that human resource skills, business characteristics, business environment, and business strategy simultaneously have a positive effect on the application of MA and are significant on $F_{\text{stat}}; p < \alpha$ ($F_{\text{stat}} = 33.228; 0.000 < 0.05$), with $n = 34, k = 5$ ($v_1; v_2$).

DISCUSSION

This study considers four factors that influence the application of management accounting (MA), namely human resource skills, business characteristics, business environment, and business strategy, where the testing and analysis carried out have met the objectives of this study. Hasil analysis can be seen that human resource skills, business characteristics, business environment, and business strategy have a correlation with the application of MA, as well as having the ability to predict the effectiveness of the application of MA in MSMEs. The findings show that the magnitude of the joint contribution of human resource skills, business characteristics, business environment, and business strategy in influencing the implementation of MA amounted to 79.6% of the total variance of MA implementation. The remaining 20.4% is the difference in MA implementation, it is very likely to be influenced by other variables that are not included in the model. The findings also prove that the application of MA is influenced by human resource skills, business characteristics, business environment, and business strategy both individually and simultaneously. This finding is in line with the results of previous research that the application of MA is influenced by human resource skills, business characteristics, business environment, and business strategy (Nguyen et al., 2019; Hiebl et al., 2012; Firmansyah, Rifa'i, et al., 2022; Senftlechner & Hiebl 2015; Hutaibat 2005; Giovannoni et al., 2011; Neubauer et al., 2012; Choe, 2004; Ghasemi et al., 2016; Hyvönen, 2007).

Education and training can be provided to enhance professionalism, skills and development to better understand the use and application of MA to MSMEs or even to larger organizations. The characteristics of individuals and the competence of human resources influence the development and work of the organization as a whole (Firmansyah & Wahdiniwati, 2017). In the context of business, it is also important to have sustainable multi-sectoral cooperation to support the success of the implementation of a new system that requires innovation in a changing business environment and emphasizes something that continues to be updated so that the achievement of business achievements economically is more tangible (Wahdiniwati et al., 2022; Firmansyah, Suryana, et al., 2022). MA practices are necessary for organizations that operate flexibly and dynamically to experience growth and become large, as a result of which challenges of competition intensity and complexity of the business environment occur, at this stage the effectiveness of implementing MA can help organizations to determine the resources needed to reduce and minimize any market environmental challenges that occur (Leite et al., 2016).

The creation and exploitation of knowledge, the collaboration and cooperation of stakeholders, the adoption and adaptation of superior business behaviors in social elements play an important role in the global market (Firmansyah, 2022a; Saepuloh et al., 2022), so that the effects of the business environment, social activities, the intensity of market competition, superior new business models have influenced attention and imitation for the development of the personality of other business behaviors that are still vulnerable to various conditions and business stability (Firmansyah & Saepuloh, 2022b), then the ability to adopt the application of a system such as MA is also important. In addition, technology also affects the implementation of MA along with the increasing size of the company, changes in the environment and fierce market competition. Nguyen et al., (2019), said that if market competition increases, the demand for the use of management accounting also increases, where business strategies also influence the occurrence of such conditions.

An appropriate business strategy is needed to improve its operational effectiveness so that the goal can be achieved optimally. The application of management accounting can complement the implementation of the business strategy chosen by the company in relation to achieving goals and efforts to create a competitive advantage (Choe, 2004). Companies often implement management accounting systems to support specifically prioritized strategies to achieve this process. Therefore, any changes that occur in business strategy will lead to the implementation of different management accounting and must be better and appropriate. The findings of Senftlechner & Hiebl (2015), show that business strategies and objectives influence the orientation of MA application in a business context. In fact, larger companies have the resources to select and implement management accounting at a more complex level than smaller companies. Correspondingly, with the increase in the size of the company, the implementation of strategies equipped with costs and budgets, as well as the application of more comprehensive management accounting techniques and tools are also very likely to be expanded. In the end, the success of an enterprise

depends largely on managerial decisions that are based on accounting information, in particular management accounting.

CONCLUSIONS AND RECOMMENDATIONS

The four factors that influence the application of management accounting (MA) considered in this study are human resource skills, business characteristics, business environment, and business strategy. The results of the analysis show that human resource skills, business characteristics, business environment, and business strategy have a correlation with the implementation of MA, and have the ability to predict whether or not the implementation of MA in MSMEs is effective. The results of the study prove that human resource skills, business characteristics, business environment, and business strategy have a significant positive effect on IP implementation both individually and simultaneously. Management accounting seems to continue to be a scientific tool for managers to carry out operations, control and decision-making in a satisfactory manner. The success of a company, including in the context of SMEs, will very likely depend on managerial decisions based on accounting information, especially management accounting. Along with business developments, business complexity, environmental and market changes, technological developments and digitization, innovative practices and implementation of strategies that are in accordance with the business models and processes required from time to time, the effectiveness of MA application adoption is increasingly evident, so it is important to improve management performance /MSMEs in accordance with the core business model it chooses.

ADVANCED RESEARCH

This study only considers four factors that influence the application of MA to MSMEs. Comprehensively many factors can influence the effectiveness of applying MA to businesses at various scales. The development of technology and the ability to adopt technology and digitize business in Industry 4.0 (I4.0) followed by the ability to establish multi-sectoral cooperation is so relevant to the innovation of business model practices that must be carried out today in order to survive and develop with better competitiveness in a sustainable manner. Aspects of cooperation, awareness and ability to adopt technology optimally by the management of a business can be considered for further research in predicting factors that affect the effectiveness of the application of management accounting (MA).

ACKNOWLEDGEMENTS

Thank you to the parties involved in this research, colleagues and research partners who are members of the research collaboration carried out until this research can be completed. We hope that the results of this study will be useful for interested parties.

REFERENCES

- Armstrong, M. (2006). Human resource management practice. In *Distributed Computing (10th ed.)*. <https://doi.org/10.1002/9781118802717> (13th ed.). Hong Kong: Graphicraft Limited. www.koganpage.com
- Azudin, A., & Mansor, N. (2018). Management accounting practices of SMEs: The impact of organizational DNA, business potential and operational technology. *Asia Pacific Management Review*, 23(3), 222–226. <https://doi.org/10.1016/j.apmr.2017.07.014>
- Bhimani, A. (2003). *Management accounting in the digital economy*. OUP Oxford.
- Burns, J., & Scapens, R. W. (2000). Conceptualizing management accounting change: an institutional framework. *Management Accounting Research*, 11(1), 3–25. <https://doi.org/10.1006/mare.1999.0119>
- Cadez, S., & Guilding, C. (2008). An exploratory investigation of an integrated contingency model of strategic management accounting. *Accounting, Organizations and Society*, 33(7–8), 836–863. <https://doi.org/10.1016/j.aos.2008.01.003>
- Chang, M. (2020). Factors Influencing the Alignment of Accounting Information Systems in Small and Medium Sized Malaysian Manufacturing Firms. *World Scientific Research Journal*, 6(4), 106–121. [https://doi.org/10.6911/WSRJ.202004_6\(4\).0010](https://doi.org/10.6911/WSRJ.202004_6(4).0010)
- Chenhall, R. H. (2003). Management control systems design within its organizational context: findings from contingency-based research and directions for the future. *Accounting, Organizations and Society*, 28(2–3), 127–168. [https://doi.org/10.1016/S0361-3682\(01\)00027-7](https://doi.org/10.1016/S0361-3682(01)00027-7)
- Choe, J. (2004). Impact of management accounting information and AMT on organizational performance. *Journal of Information Technology*, 19(3), 203–214. <https://doi.org/10.1057/palgrave.jit.2000013>
- Choiriah, S., & Sudibyoy, Y. A. (2020). Competitive Advantage, Organizational Culture and Sustainable Leadership on the Success of Management Accounting Information System Implementation. *Saudi Journal of Economics and Finance*, 4(9), 481–486. <https://doi.org/10.36348/sjef.2020.v04i09.009>
- Cooper, D. R., Schlinger, P. S., & Pamela, S. (2014). *Business Research Methods*. McGraw - Hill Education. New York.
- Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative and Mixed Methods Approach* (Fourth Ed). SAGE Publication Inc.
- Duréndez, A., Madrid-Guijarro, A., & García-Pérez-de-Lema, D. (2011). Innovative culture, management control systems and performance in small and medium-sized Spanish family firms. *Innovar*, 21(40), 137–154.
- Firmansyah, D. (2022a). Kinerja Kewirausahaan: Literasi Ekonomi, Literasi Digital dan Peran Mediasi Inovasi. *Formosa Journal of Applied Sciences*, 1(5), 745–762. <https://doi.org/10.55927/fjas.v1i5.1288>
- Firmansyah, D. (2022b). Teknik Pengambilan Sampel Umum dalam Metodologi Penelitian: Literature Review. *Jurnal Ilmiah Pendidikan Holistik (JIPH)*, 1(2), 85–114. <https://doi.org/10.55927/jiph.v1i2.937>
- Firmansyah, D., Rifa'i, A. A., & Suryana, A. (2022). Human Resources: Skills

- and Entrepreneurship in Industry 4.0. *Formosa Journal of Applied Sciences*, 1(6), 1221–1240. <https://doi.org/10.55927/fjas.v1i6.1899>
- Firmansyah, D., & Saepuloh, D. (2022a). Daya Saing: Literasi Digital dan Transformasi Digital. *Journal of Finance and Business Digital*, 1(3), 237–250. <https://doi.org/10.55927/jfbd.v1i3.1348>
- Firmansyah, D., & Saepuloh, D. (2022b). Social Learning Theory: Cognitive and Behavioral Approaches. *Jurnal Ilmiah Pendidikan Holistik (JIPH)*, 1(3), 297–324. <https://doi.org/10.55927/jiph.v1i3.2317>
- Firmansyah, D., Saepuloh, D., & Susetyo, D. P. (2020). *AKuntansi Manajemen ; Informasi dan Alternatif Untuk Pengambilan Keputusan*. Tangerang. Banten: PT. Bidara Cendekia Ilmi Nusantara.
- Firmansyah, D., Suryana, A., Rifa'i, A. A., Suherman, A., & Susetyo, D. P. (2022). Hexa Helix: Kolaborasi Quadruple Helix Dan Quintuple Helix Innovation Sebagai Solusi Untuk Pemulihan Ekonomi Pasca Covid-19. *Ekuitas (Jurnal Ekonomi dan Keuangan)*, 6(4), 476–499. <https://doi.org/10.24034/j25485024.y2022.v6.i4.4602>
- Firmansyah, D., & Susetyo, D. P. (2022). Financial Behavior in the Digital Economy Era: Financial Literacy and Digital Literacy. *Jurnal Ekonomi Dan Bisnis Digital*, 1(4), 367–390. <https://doi.org/10.55927/ministal.v1i4.2368>
- Firmansyah, D., Susetyo, D. P., Suryana, A., & Saepuloh, D. (2022). Volume Penjualan: Analisis Pendekatan Regresi Data Panel. *Asian Journal of Management Analytics*, 1(2), 109–124. <https://doi.org/10.55927/ajma.v1i2.1479>
- Firmansyah, D., & Wahdiniwaty, R. (2017). Pengaruh Karakteristik Individu, Beban Kerja Dan Lingkungan Kerja Terhadap Kinerja Karyawan Pada PT. Sinar Sosro Kantor Penjualan Wilayah (KPW) Jawa Barat Selatan. *Jurnal Ilmiah Magister Manajemen*, 2(2), 1–6.
- Ghasemi, R., Azmi Mohamad, N., Karami, M., Hafiz Bajuri, N., & Asgharizade, E. (2016). The mediating effect of management accounting system on the relationship between competition and managerial performance. *International Journal of Accounting and Information Management*, 24(3), 272–295. <https://doi.org/10.1108/IJAIM-05-2015-0030>
- Giovannoni, E., Maraghini, M. P., & Riccaboni, A. (2011). Transmitting knowledge across generations: The role of management accounting practices. *Family Business Review*, 24(2), 126–150. <https://doi.org/10.1177/0894486511406722>
- Haldma, T., & Lääts, K. (2002). Contingencies influencing the management accounting practices of Estonian manufacturing companies. *Management Accounting Research*, 13(4), 379–400. <https://doi.org/10.1006/mare.2002.0197>
- Hiebl, M. R. W., Duller, C., & Feldbauer-Durstmüller, B. (2012). Do management accountants play a different role in family firms? Empirical evidence on management accountants' qualifications and roles in family and non-family firms. *International Journal of Business Research*, 12(2), 94–103.
- Horngren, C. T. D., Rajan, S. M., & Madhav, V. (2015). *Global Edition* (pp. 1–31).

Pearson Education Limited.

- Horngren, C. T., Sundem, G. L., & Stratton, W. O. (2004). *Introduction to Management Accounting, Chap. 1-14*. Pearson Educación.
- Hutaibat, K. A. (2005). *Management accounting practices in Jordan: A contingency approach* (pp. 1–383). University of Bristol Bristol.
- Hyvönen, J. (2007). Strategy, performance measurement techniques and information technology of the firm and their links to organizational performance. *Management Accounting Research*, 18(3), 343–366. <https://doi.org/10.1016/j.mar.2007.02.001>
- Ireland, R. D., Covin, J. G., & Kuratko, D. F. (2009). Conceptualizing corporate entrepreneurship strategy. *Entrepreneurship Theory and Practice*, 33(1), 19–46. <https://doi.org/10.1111/j.1540-6520.2008.0027>
- Jorissen, A., Laveren, E., Martens, R., & Reheul, A.-M. (2005). Real versus sample-based differences in comparative family business research. *Family Business Review*, 18(3), 229–246. <https://doi.org/10.1111/j.1741-6248.2005.00044.x>
- Kaplan, R. S., & Norton, D. P. (1996). *The balanced scorecard: translating strategy into action*. Harvard business press.
- Leiponen, A. (2005). Skills and innovation. *International Journal of Industrial Organization*, 23(5–6), 303–323. <https://doi.org/https://doi.org/10.1016/j.ijindorg.2005.03.005>
- Leite, A. A., Fernandes, P. O., & Leite, J. M. (2016). Contingent factors that influence the use of management accounting practices in the Portuguese textile and clothing sector. *The International Journal of Management Science and Information Technology (IJMSIT)*, 19, 59–77.
- Ling-ye, L., & Ogunmokun, G. O. (2008). An empirical study of manufacturing flexibility of exporting firms in China: how do strategic and organizational contexts matter? *Industrial Marketing Management*, 37(6), 738–751. <https://doi.org/10.1016/j.indmarman.2007.05.007>
- Moilanen, S. (2008). The role of accounting in the management control system: a case study of a family-led firm. *Qualitative Research in Accounting & Management*, 5(3), 165–183. <https://doi.org/10.1108/11766090810910209>
- Nair, S. (2017). *Factors affecting management accounting practices in Malaysia*.
- Neubauer, H., Mayr, S., Feldbauer-Durstmüller, B., & Duller, C. (2012). Management accounting systems and institutionalization in medium-sized and large family businesses-empirical evidence from Germany and Austria. *European Journal of Management*, 12(2), 41–60.
- Nguyen, N., Nguyen, T., Chu, T., & Nguyen, D. (2019). Factors affecting the application of management accounting in small and medium enterprises in Hanoi, Vietnam. *Management Science Letters*, 9(12), 2039–2050.
- Pierce, B., & O’Dea, T. (1998). *Management accounting practices in Ireland—the preparers’ perspective*.
- Prencipe, A., Bar-Yosef, S., & Dekker, H. C. (2014). Accounting Research in Family Firms: Theoretical and Empirical Challenges. *European Accounting Review*, 23(3), 361–385. <https://doi.org/10.1080/09638180.2014.895621>
- Saepuloh, D., Firmansyah, D., & Aryantika, N. (2020). Satisfaction as a mediator

- impact quality of service Toward customer loyalty (Study on pt. prima Mixindo Utama Sukabumi city). *Global Research Network LLC. American Journal Of Social And Humanitarian Research*, 1(3), 32–50.
- Saepuloh, D., Firmansyah, D., Susetyo, D. P., & Suryana, A. (2022). Quadruple Helix Collaboration Concept As An Economic Recovery Solution After COVID-19. *Economica*, 10(2), 1–14. <https://doi.org/10.22202/economica.2022.v10.i2.4636>
- Salvato, C., & Moores, K. (2010). Research on accounting in family firms: Past accomplishments and future challenges. In *Family Business Review* (Vol. 23, Issue 3, pp. 193–215). SAGE Publications Sage CA: Los Angeles, CA. <https://doi.org/10.1177/0894486510375069>
- Senftlechner, D., & Hiebl, M. R. W. (2015). Management accounting and management control in family businesses. *Journal of Accounting & Organizational Change*, 11(4), 573–606. <https://doi.org/10.1108/JAOC-08-2013-0068>
- Sirmon, D. G., & Hitt, M. A. (2003). Managing resources: Linking unique resources, management, and wealth creation in family firms. *Entrepreneurship Theory and Practice*, 27(4), 339–358. <https://doi.org/10.1111/1540-8520.t01-1-00013>
- Songini, L., Gnan, L., & Malmi, T. (2013). The role and impact of accounting in family business. *Journal of Family Business Strategy*, 4(2), 71–83. <https://doi.org/10.1016/j.jfbs.2013.04.002>
- Teece, D. J. (2010). Business models, business strategy and innovation. *Long Range Planning*, 43(2–3), 172–194. <https://doi.org/10.1016/j.lrp.2009.07.003>
- Theriou, G., & Chatzoudes, D. (2015). Exploring the entrepreneurship-performance relationship: evidence from Greek SMEs. *Journal of Small Business and Enterprise Development*, 22(2), 352–375. <https://doi.org/10.1108/JSBED-03-2013-0024>
- Wahdiniwaty, R., Firmansyah, D., Dede, Suryana, A., & Rifa'i, A. A. (2022). The Concept of Quadruple Helix Collaboration and Quintuple Helix Innovation as Solutions for Post Covid 19 Economic Recovery. *Mix Jurnal Ilmiah Manajemen*, 12(3), 418–442. https://doi.org/10.22441/jurnal_mix.2022.v12i3.005
- Wahdiniwaty, R., Firmansyah, D., Suryana, A., Dede, D., & Rifa'i, A. A. (2022). Mystery in Marketing Management Products Post COVID-19 as a Model of Survival Strategy Towards the Awakening of Micro Small and Medium Enterprises (MSMEs) in the Digital Economy Era. *Khazanah Sosial*, 4(1), 187–210. <https://doi.org/10.15575/ks.v4i1.17397>
- Zainun Tuanmat, T., & Smith, M. (2011). Changes in management accounting practices in Malaysia. *Asian Review of Accounting*, 19(3), 221–242. <https://doi.org/10.1108/13217341111185146>