



# The Influence of Financial Literacy, Risk Orientation and Qualified Accountants on Performance in Micro, Small and Medium Enterprises: The Mediating Role of Management Accounting

**Kamilah Ahmad\***

Faculty of Technology Management and Business, Universiti Tun Hussein Onn Malaysia, Parit Raja, 86400 Batu Pahat, Malaysia.

\*Email: [kamilah@uthm.edu.my](mailto:kamilah@uthm.edu.my)

**Received:** 03 July 2024

**Accepted:** 07 October 2024

**DOI:** <https://doi.org/10.32479/irmm.17044>

## ABSTRACT

There are limited studies examining whether the owner or manager's financial literacy, risk orientation, and deployment of qualified accounting staff influence the adoption of management accounting practices (MAPs) and performance in the context of micro, small, and medium-sized enterprises (MSMEs). Thus, this study seeks to examine the effect of financial literacy, qualified accounting staff, and risk orientation on performance, with MAPs as a mediating variable within the context of MSMEs from a developing country. A quantitative study was established where a questionnaire survey was administered to Malaysian MSMEs from different sectors. Based on 105 valid responses, the results show that MAPs have positive and significant effect on performance. The study also reveals that MAPs significantly and fully mediate the relationships between owner/manager's financial literacy, qualified accounting staff, risk orientation, and performance of MSMEs. The findings provide significant data for identifying key factors within the setting of small businesses in developing countries to improve financial resilience in the current competitive economy. Our findings offer valuable insight to practitioners about how competencies and key management accounting concepts can consequently affect the positive outcomes of organisational performance.

**Keywords:** Small and Medium-Sized Enterprises, Management Accounting, Manufacturing Sector, Malaysia

**JEL Classification:** M49

## 1. INTRODUCTION

In recent years, continuous economic uncertainty characterised by supply chain disruptions and rising operational costs has heavily impacted micro, small, and medium-sized enterprises (MSMEs). MSMEs should be more prepared to face the challenges by adopting proper managerial systems, including management accounting practices (MAPs) (Senflechner and Hiebl 2015). MAPs are vital for providing MSMEs with accurate and timely financial and non-financial information on their business activities, allowing them to make informed decisions (Lavia Lopes and

Hiebl, 2014; Nuhu et al., 2016). MAPs help to boost firm value by speeding the collection and organisation of information, evaluating performance, and effectively communicating information to decision-makers. This, in turn, affects overall managerial functions and performance (Grossie et al., 2020; Vetchagool et al., 2020; Nangpiire et al., 2024).

Contingency theory-based research has identified both internal and external factors that can influence the adoption of effective MAPs in smaller firms (Valeri, 2021). One key factor is the presence of skilled personnel who possess relevant competencies and

knowledge, such as financial literacy, and qualified accounting staff (Ahmad and Mohamed Zabri, 2015). This is essential to understanding applicable management accounting techniques that can be deployed and for systematically implementing them (Demiröz, 2019). Nielsen and Pontoppidan (2020) argued that professional accountants play a crucial role in assisting businesses in developing control and evaluation systems, particularly through MAPs, that not only help manage potential risks but also monitor performance. Staff with sound financial management skills must be able to handle issues that small businesses encounter and contribute to improving overall business performance. Furthermore, emerging business strategies, such as risk management, have been emphasised in recent research as critical tools for handling business risks (Eichholz et al., 2024). This proactive approach frequently results in the adoption of a more analytical and strategically orientated approach, including MAPs, which encompass accounting and financial techniques to control and monitor business performance and thereby reduce or mitigate risks (Walker and Shenkir, 2018).

Despite the growing number of studies examining the effect of MAPs on performance, the study of management accounting in MSMEs remains fragmented due to the different research settings in which it is conducted. Furthermore, the scarce empirical evidence on the effect of financial literacy, risk orientation, and qualified accounting staff on the adoption of MAPs and their effect on performance in smaller business contexts in developing countries limits our understanding of the interactions between these important variables. Pelz (2019) posits that researchers should recognize the concepts of management accounting in smaller businesses and be able to determine the specific organisational characteristics that distinguish small businesses from larger ones. This study is established in response to the significant research gap on MAPs, financial literacy, risk orientation, competent accounting staff, and the link with performance within the MSMEs context.

This study offers new empirical evidence in the literature for further understanding of MAPs within small businesses. The evidence supports management accounting functions that must go beyond their existing role to support small businesses in building their competitive edge. Additionally, considering the crucial contribution of SMEs as engines of social and economic development, it reinforces the need for research in this sector. The structure of this article is as follows: The next section discusses the literature review, followed by the research methodology and discussions. The final section summarises the findings and implications for future research.

## 2. MANAGEMENT ACCOUNTING AND SMES

There is a growing research interest in MAPs in SMEs, as can be found in the literature in recent years. This is to understand the role of MAPs in improving the resilience of MSMEs (Ahmad and Mohamed Zabri, 2024). Although it is commonly known that MAP usage among smaller businesses differs from its larger counterparts (Pedroso and Gomes, 2020), the need to fully adopt MAPs is increasingly significant as businesses face greater complexities and challenges (Demiröz, 2019). MSMEs play a significant role

in most economies, as this sector constitutes more than 98 percent of all business entities (Erdin and Ozkaya, 2020). MSMEs also become a source of entrepreneurship activities and make important contributions to the economy in terms of poverty reduction through income generation, entrepreneurship activities, and job creation. MSMEs in Malaysia made a significant contribution of 38.8% to the country's GDP and were responsible for employing over seven million people (Department of Statistics Malaysia, 2021).

Prior studies on MAPs suggest that there is a limited use of MAPs in the MSMEs context. Smaller firms tend to use the conventional approach of MAPs mainly for control and evaluation purposes. Ahmad (2014) and Matsoso et al. (2021) revealed that there is a tendency among MSMEs to make decisions without adequate, or indeed any, financial information, which exposes the businesses to the risk of failure. Costing systems and performance measurement systems appear to be common MAPs used in SMEs, regardless of the firms' size (Ahmad, 2014). Vanauken et al. (2016) concluded in their study that MSMEs tend to focus on control information rather than aiding decision-making. Meanwhile, Armitage et al. (2016) concluded that most SMEs from developed countries tend to use a wider range of management accounting techniques, including costing systems, operating budgets, and variance analysis. The use of MAPs in smaller, early-stage SMEs, on the other hand, is least prevalent. The study also indicated that the overall level of adoption of MA is affected by the perceived decision-usefulness, the complexity of the operating environment, and the age of the business.

Overall, the research evidence on MAPs in SMEs can be considered limited and fragmented, particularly in the context of MSMEs in developing countries. Further examination is required to improve information in this area. The following section discusses the evidence of MAP implementation and its relationship with business performance.

### 2.1. MAPs and Performance

The effectiveness of MAPs in assisting firms achieve their goals has become an important research topic. MAPs encompass a set of measures for managing, monitoring, communicating, reporting, and supporting decision-making (Pitcher, 2015). MAPs are realised through the implementation of different sub-systems that consist of strategic planning, budgeting, costing, performance measurement, and decision analysis (Armitage et al. 2020; Ahmad, 2014). Due to the roles of management accounting that help to steer financial and non-financial planning, MAPs may have a positive impact on firm performance (Oppi et al., 2020), provide feedback on strategic plans and progress, and support effective decision-making (Alabdullah, 2019). Armitage et al. (2016) added that through management accounting, businesses may obtain timely access to financial and non-financial data to assist in enhancing their operations.

There have been substantive efforts in measuring the direct and indirect effect relationship between MAPs and performance. Most prior studies examined specific MAP areas such as performance measurement systems (PMS), balanced scorecards (BSC), strategic management accounting and costing, and the link with performance based on objective or subjective criteria. For example, Oladele et al.

(2023) found that specific management accounting techniques such as benchmarking, value chain costing, and a balanced scorecard have a positive association with the performance of SMEs. The results also indicate that accounting information quality mediates the relationship between management accounting techniques and SMEs' performance. Almatarneh et al. (2022) concluded that costing systems strongly correlate with supply chain performance in logistics and manufacturing organizations. Dahal et al. (2020) found that MAPs improve the efficiency of managerial decision-making in listed manufacturing enterprises in Nepal.

Some previous studies on MAPs have treated MAPs as a mediating factor in conjunction with the effects of other variables on business performance. For example, Ahmad and Zabri (2024) showed that MAPs partially moderate the relationship between corporate social responsibility (CSR) and performance. The study supports the idea that the adoption of proper MAPs can significantly improve firm performance. Ylä-Kujala et al. (2023) investigated the effect of MAPs on business solvency and performance and concluded that there is a lack of evidence of an indirect relationship between MAPs and the performance of small businesses. Their study discovered that SMEs that possessed a greater understanding of MAPs and invested more in implementing MAPs observed a decline in their solvency. Given the divided results regarding the relationship between MAPs and performance, additional empirical evidence should be established to statistically and academically establish the effect of MAPs on performance, particularly in MSMEs. We propose the following hypothesis to test the relationship between MAPs and performance.  
 $H_1$ : There is a significant relationship between MAPs and performance.

## 2.2. Financial Literacy and MAPs

Financial literacy is the ability of an owner or manager to understand and effectively use various financial skills and concepts to make informed financial decisions (Tuffour et al., 2022; Chabaefe and Qutieshat, 2024; Basar et al., 2024; Yanti and Endri, 2024). This encompasses a broad spectrum of knowledge about financial management. Esiebugie et al. (2018) reported that the majority of small business owners/managers have unfavourable attitudes towards their financial activities, are incapable of handling risks, and lack participation in training programs that could improve their financial literacy and skills. Eniola and Entebang (2017), in their study, showed that financially literate owners/managers had a significant effect on the performance and growth of SMEs. Rahim and Balan (2021) reveal that the knowledge of finance in general relates significantly stronger to the bottom line of business entities relative to the owners' financial attitude and their behaviour towards financial decision making. This supports the contention of Atkinson and Messy (2012), who argued that financial literacy helps individuals understand financial products and services, assess financial opportunities and risks, and build strong financial stability. In the context of businesses, owner/manager who possess higher financial literacy have a greater likelihood of understanding and accepting accounting practices when making effective business financial decisions. Based on this premise, the following hypothesis is proposed:

$H_2$ : There is a significant relationship between financial literacy of owner/managers and the adoption of MAPs.

## 2.3. Risk Orientation and MAPs

Risk management is an important aspect of the managerial system that helps in addressing risks in organisations (Anton and Nucu, 2020). Abiodun (2016) argued that effective entrepreneurs are inherently risk-takers and therefore would be willing to take risky financial decisions in order to increase business growth. Levels of risk tolerance amongst small enterprises reflect the approach to risky ventures with expected higher than average returns. Businesses that proactively manage risks and are able to identify potential risks, assess the impact, and mitigate the impact are more likely to adopt management accounting for control tools. Eichholz et al. (2024) found that a risk management orientation and the importance of the planning function are positively associated with both the adaptive capability factor and the planning factor of organisational resilience. By proactively managing risks, businesses can safeguard their financial health and resilience. We propose that a more pronounced risk management orientation will contribute to increased usage of basic MAPs. Based on the previous arguments, the following hypothesis is proposed:

$H_3$ : There is a significant relationship between risk orientation and the adoption of MAPs.

## 2.4. Qualified Accounting Staff and MAPs

Hiring well-educated financial staff provides benefits to businesses due to their expertise in optimising financial systems and techniques that contribute to overall business success. The existing literature highlights that the education level of accounting staff has a major impact on the organisation's ability to implement management accounting. Some studies attempt to provide evidence of whether qualified accounting staff play a role in enhancing the adoption of financial practices in the organisation. A study by Adu-Gyamfi (2021) found a significant relationship between the education level of accounting staff and the preparation and use of management accounting information in the Ghanaian manufacturing sector. Demiröz (2019) found that highly skilled personnel with strong financial management led to the effective implementation of management accounting. In contrast, Nair and Nian (2017), in their study among Malaysian SMEs, found that the level of education of accounting staff did not significantly correlate with the use of MAPs. Despite the mixed results, the above literature suggests the importance of accountants to facilitate the use of MAPs within the SMEs context. Based on the previous arguments, the following hypothesis is proposed:

$H_4$ : There is a significant relationship between qualified accounting staff and the adoption of MAPs.

## 2.5. Financial Literacy, Risk Orientation, Qualified Accounting Staff, MAPs and Performance

Limited studies exist examining the intervening roles of MAPs in the relationship between specific factors and business performance, particularly in MSMEs. As MAPs are presumed to provide relevant information for today's organisations, MSMEs must proactively employ effective MAPs in making business decisions (Ojra et al., 2021; Dahal et al., 2020). We argued that MAP adoption can affect the effect of financial literacy among owners/managers, the functions of qualified accounting staff, and risk management orientation on performance. Businesses with a higher orientation towards risk management need a proper internal control system.



This led to the use of MAPs that can provide more monitoring and performance evaluation of business activities, which can then be systematically integrated into the organisation’s policies and objectives and further enhance business performance (Nielsen and Pontoppidan, 2020). MAPs provide financial diagnostics through budgeting and performance evaluation and help to determine the costs and benefits of risky business projects (Ahmad and Zabri, 2024).

Many previous studies also established that in today’s competitive market, the deployment of accounting professionals is crucial to ensuring the quality and reliability of financial records, promoting compliance, managing risk, and developing strategic insights for performance (Khavis et al., 2022). This is because qualified staff usually employ more systematic accounting approaches, such as MAPs, to aid organisations in making sound decisions that improve overall performance. Furthermore, staff with a strong understanding of financial knowledge are more likely to adopt sophisticated management practices to achieve the business’s goal (Siswanty and Halida, 2021). Financial literacy combined with good management accounting processes can considerably improve organisational performance. Financially literate owner/managers who use sophisticated accounting procedures are better positioned to make strategic decisions, optimise resources, and drive their businesses forward (Lusardi and Messi, 2023).

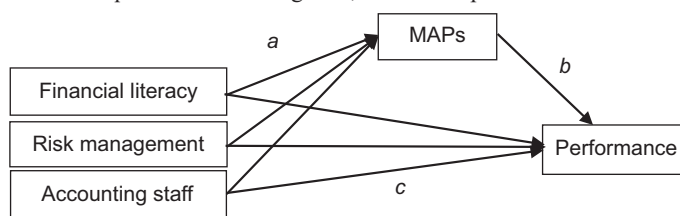
To date, the literature on financial literacy, qualified accounting staff, risk orientation, MAPs, and performance is very limited in the context of MSMEs. MSMEs require suitable controls and monitoring systems to attain their financial objectives and avoid losses and risks. MSMEs can develop further if they retain high competencies in functional areas. Those who develop managerial competencies are more likely to implement sophisticated managerial tools, such as MAPs. As previously discussed, the literature suggests that owner/manager with a good level of financial knowledge, businesses with qualified accounting staff, and greater emphasis on risk management would have a positive impact on performance when they were complemented by management accounting tools that provided accurate and timely financial and non-financial information to the business. We therefore develop the following hypotheses:

H<sub>3</sub>: MAPs significantly mediate the relationships between financial literacy, risk orientation, qualified accounting staff and performance.

### 2.6. Conceptual Framework

Figure 1 shows a conceptual framework for the relationships between FL, RM, QAS, MAPs, and performance. In this framework, path *a* indicates the effect of the three independent variables on the mediator (MAPs). This is followed by path *b*, which shows the effect of the mediator (MAPs) on the dependent variable (performance). Path *c* shows the direct effect of the three independent variables on performance when MAPs are constant. The indirect effect (*ab*) of FL, RO, and QAS on performance through MAPs is determined by multiplying *a* and *b*, the two effects linked to the proposed path (Hayes and Rockwood, 2017).

**Figure 1:** Mediation model of financial literacy, risk orientation, qualified accounting staff, MAPs and performance



## 3. RESEARCH METHODS

### 3.1. The Survey

This study sets micro, small, and medium-sized enterprises (MSMEs) from the southern region of Malaysia as the population of study in order to fully understand the application of MAPs across sectors. SMEs Corp Malaysia (2024) defined MSMEs as enterprises that have a minimum of 200 employees in the manufacturing sector and 75 employees in the service sector. By integrating businesses of varying sizes and resource capacities, a more comprehensive understanding of the implementation of advanced management systems in MSMEs can be gained. We focused on our target respondents, whose number of employees ranges from 3 to 75 in the city of Batu Pahat, Malaysia. Johor is a Malaysian state located in the southern region of Malaysia that consists of major industrial areas in Malaysia, including Batu Pahat, with a high density of business population.

A total of 300 questionnaires were randomly distributed through email and face-to-face to MSMEs. The survey questionnaires, accompanied by a cover letter, were distributed to the accounting staff or owner/managers of the business. The distributed questionnaire requested details relating to size, business sector, frequency of the use of MAPs, financial literacy, risk orientation, qualification of the accounting staff, and the level of financial and non-financial performance of the enterprise. After several follow-ups, the total number of replies gathered increased to 105 usable questionnaires. The unusable responses were received for a few reasons, including those who declined to take part and incomplete questionnaires.

### 3.2. Measurement of Variables

MAPs were assessed through ten basic management accounting tools commonly used among smaller businesses. Current literature highlights that most small firms employ traditional or basic MAPs to help in decision-making as they are easier to understand and implement without the requirement of sophisticated software or systems. The management accounting items were measured using a seven-point Likert scale from 1: very low to 7: very frequently. We also required respondents to indicate their risk management orientation, level of financial literacy of owner/manager and qualification of accounting staff from 1 (very low) to 7 (very high). The dependent variable, business performance, is measured using a perceptual measurement approach. Respondents were required to indicate the level of their performance in the last 3 years based on a self-rating scale from 1: decreased significantly

to 7: Increased significantly. The data collected acts as a proxy for current variations in MSMEs performance. Four selected items that represent performance within the MSMEs context were chosen. The items include sales growth, operating profit, number of customers, and overall business growth. The selection of four performance items also reflects a desire not to overwhelm targeted respondents with detail to increase the number of replies. The following section discusses the findings of this study.

## 4. RESULTS

This section presents the descriptive results of MAPs adoption, financial literacy, risk orientation, accounting staff and performance.

### 4.1. Demographic Profile

Table 1 presents information on the distribution of business types, sectors, and the presence of qualified accountants within a sample of 105 businesses. Businesses owned and operated by proprietors account for 61.0% of the total respondents. Over 34% of the samples are registered under the company. In terms of sector, food and beverages dominate (41.9%), followed by retailing (34.3%). Meanwhile manufacturing has the lowest representation (7.6%). The results also indicate that out of the 105 businesses, 65 have not employed qualified accountants (61.9%) to help with business financial reporting, and only 38.1% of respondents employed qualified accounting staff. The results indicate that the deployment of qualified accounting staff in smaller enterprises is slightly low.

### 4.2. Correlation Analysis

Table 2 provides the descriptive and correlation results of independent and dependent variables: financial literacy (FL), qualified accounting staff (QAS), risk orientation (RO), MAPs, and performance. The results show the level of financial literacy of owner/managers, and MAPs are averagely rated just below the mean score of 5, indicating a relatively higher extent of financial knowledge and MAP adoption. The risk management orientation has the lowest mean score (4.61), suggesting that the majority of respondents from the small-scale sector still lack an orientation to risk management. The performance level is regarded as quite high, with a mean score of 5.021.

**Table 1: Demographic background of the respondents**

| Items                | n   | Percent |
|----------------------|-----|---------|
| Type of business     |     |         |
| Proprietorship       | 64  | 61.0    |
| Partnership          | 5   | 4.8     |
| Company              | 36  | 34.3    |
| Total                | 105 | 100.0   |
| Sector               |     |         |
| Retail               | 36  | 34.3    |
| Food and beverages   | 44  | 41.9    |
| Service              | 17  | 16.2    |
| Manufacturing        | 8   | 7.6     |
| Total                | 105 | 100.0   |
| Qualified accountant |     |         |
| No                   | 65  | 61.9    |
| Yes                  | 40  | 38.1    |
| Total                | 105 | 100.0   |

The correlation analysis was conducted to examine the associations between all variables. We first conducted a normality test for dependent variables to ensure the data were normally distributed. Since the sample size is >50, the interpretations for data normality were based on significant scores derived from the Kolmogorov-Smirnov test. The normality test indicates that the  $P > 0.05$  for both performance and MAPs. Hence, the data are considered to have a normal distribution and necessitate the use of parametric tests for the correlation analysis using the bivariate Pearson correlation.

Table 2 shows the Pearson correlation coefficients among qualified accounting staff (QAS), financial literacy (FL), risk orientation (RO), MAPs, and performance (PFM). The results indicate significant, positive, and strong relationships between the financial literacy of owners/managers, risk orientation, and the use of MAPs, with correlation coefficients of 0.622 and 0.758, respectively. The results imply that the incorporation of MAPs is more prevalent when there is a greater emphasis on risk orientation and a higher degree of financial knowledge among owner/managers. Next, the bivariate analysis reveals that the employment of qualified accounting personnel was positively and significantly correlated with the use of MAPs, with a correlation coefficient of 0.336. This suggests that the strength of the relationship between the two variables is considered moderate. In terms of the association of variables with performance, the results show that qualified accounting staff, financial literacy of owners/managers, risk orientation, and the use of MAPs are positively and significantly associated with performance, with correlation coefficients ranging from 0.240 (QAS) to 0.515 (MAPs). This shows that MAPs have the strongest relationship with performance.

### 4.3. Regression Analysis

This section discusses the path regression analysis of qualified accounting staff, financial literacy, risk orientation, MAPs, and business performance. In this analysis, we separate the path analysis for the three independent variables as presented in Tables 3-5. Firstly, we tested whether MAPs mediate the relationship between FL and performance. To establish the mediation evidence, three separate regression analyses were

**Table 2: Pearson correlation results (n=105)**

| Variables               | QAS | FL         | RO         | MAPs        | PFM       |
|-------------------------|-----|------------|------------|-------------|-----------|
| QAS                     | 1   | 0.258**    | 0.242*     | 0.336**     | 0.240*    |
| FL                      |     | 1          | 0.013      | 0.000       | 0.014     |
| RO                      |     |            | 1          | 0.622**     | 0.398**   |
| MAPs                    |     |            |            | 1           | 0.515**   |
| PFM                     |     |            |            |             | 1         |
|                         |     | <b>Min</b> | <b>Max</b> | <b>Mean</b> | <b>SD</b> |
| Financial literacy (FL) |     | 1          | 7          | 4.943       | 1.466     |
| Risk orientation (RO)   |     |            | 1          | 4.610       | 1.484     |
| MAPs                    |     |            |            | 2           | 7         |
| Performance (PFM)       |     |            |            |             | 3         |
|                         |     |            |            |             | 7         |
|                         |     |            |            |             | 4.932     |
|                         |     |            |            |             | 0.982     |
|                         |     |            |            |             | 5.021     |
|                         |     |            |            |             | 1.027     |

\*\*Correlation is significant at the level 0.01 level (2-tailed), \*Correlation is significant at the level of 0.05 level (2-tailed), MAPs: Management accounting practices

**Table 3: Regression analyses of FL, MAPs and performance**

| Model                                | Unstandardized Coefficients |                | t      | Sig.  |
|--------------------------------------|-----------------------------|----------------|--------|-------|
|                                      | B                           | Standard Error |        |       |
| Path a - FL - MAPs                   |                             |                |        |       |
| Constant                             | 2.874                       | 0.266          | 10.798 | 0.000 |
| FL                                   | 0.416                       | 0.052          | 8.058  | 0.000 |
| Path c - FL - performance            |                             |                |        |       |
| Constant                             | 3.643                       | 0.326          | 11.170 | 0.000 |
| FL                                   | 0.279                       | 0.063          | 4.408  | 0.000 |
| Path b, c' - FL, MAPs on performance |                             |                |        |       |
| Constant                             | 2.417                       | 0.454          | 5.328  | 0.000 |
| FL                                   | 0.072                       | 0.081          | 0.885  | 0.379 |
| MAP                                  | 0.456                       | 0.114          | 3.994  | 0.000 |

**Table 4: Regression analyses of qualified accounting staff (QAS), MAPs and performance**

| Model                               | Unstandardized coefficients |                | t      | Sig.  |
|-------------------------------------|-----------------------------|----------------|--------|-------|
|                                     | B                           | Standard Error |        |       |
| Path a - QAS - MAPs                 |                             |                |        |       |
| Constant                            | 4.664                       | 0.117          | 39.844 | 0.000 |
| QAS                                 | 0.669                       | 0.185          | 3.616  | 0.000 |
| Path c - QAS - performance          |                             |                |        |       |
| Constant                            | 4.821                       | 0.126          | 38.206 | 0.000 |
| QAS                                 | 0.500                       | 0.200          | 2.506  | 0.014 |
| Path b, c' - QAS, MAPs -performance |                             |                |        |       |
| Constant                            | 2.430                       | 0.452          | 5.377  | 0.000 |
| MAP                                 | 0.513                       | 0.094          | 5.461  | 0.000 |
| QAS                                 | 0.157                       | 0.187          | 0.837  | 0.404 |

**Table 5: Regression analyses of risk management (RO), MAPs and performance**

| Model                              | Unstandardized Coefficients |                | t      | Sig.  |
|------------------------------------|-----------------------------|----------------|--------|-------|
|                                    | B                           | Standard Error |        |       |
| Path a - RO - performance          |                             |                |        |       |
| Constant                           | 4.030                       | 0.323          | 12.489 | 0.000 |
| RO                                 | 0.211                       | 0.066          | 3.181  | 0.002 |
| Path c - RO - MAPs                 |                             |                |        |       |
| Constant                           | 2.619                       | 0.206          | 12.736 | 0.000 |
| RO                                 | 0.502                       | 0.042          | 11.806 | 0.000 |
| Path b, c' - RO, MAP - performance |                             |                |        |       |
| Constant                           | 2.268                       | 0.454          | 4.998  | 0.000 |
| RO                                 | -0.090                      | 0.090          | -1.010 | 0.315 |
| MAP                                | 0.643                       | 0.135          | 4.746  | 0.000 |

conducted: linear regression analyses between FL and MAPs, FL and performance, and multiple regression between FL, MAPs, and performance. Table 3 indicates that the effects of FL on MAPs and FL on performance are significant, as indicated by a  $P < 0.05$  and an unstandardised B-coefficient of 0.416 and 0.279, respectively. The combined effects of MAPs and FL on performance indicate that only MAP is significant ( $P = 0.000$ ) with an unstandardised B-coefficient of 0.456. FL has no significant effect when MAPs are added to the relationship ( $P > 0.05$ ).

Table 4 indicates that the effects of QAS on MAPs and QAS on performance are significant, as indicated by a  $P < 0.05$  and an unstandardized B-coefficient of 0.669 and 0.500, respectively. The combined effects of MAPs and QAS on performance indicate that only MAP is significant ( $P = 0.000$ ), with an unstandardised

B-coefficient of 0.513. When MAP is added to the relationship, QAS has no significant effect ( $P > 0.05$ ).

Table 5 shows that the effects of RO on MAPs and RO on performance are significant, with a with a  $P < 0.05$  and an unstandardised B-coefficient of 0.211 and 0.502, respectively. The combined effects of MAPs and RM on performance indicate that only MAP is significant ( $P = 0.000$ ), with an unstandardised B-coefficient of 0.643. When MAP is added to the relationship, RO has no significant effect ( $P > 0.05$ ).

To determine the indirect effects of FL, QAS, RO, and performance via MAPs, the Sobel tests were conducted. The Sobel test is a statistical technique used to assess the statistical significance of indirect effects in mediation analysis. Table 6 shows the results of the Sobel test for FL, QAS, and RO. The results indicate that the P-values of FL, QAS, and RO are  $< 0.05$ ; therefore, it can be concluded that the indirect effects between FL, QAS, RO, and performance via MAPs are statistically significant ( $P \leq 0.05$ ). The indirect effects of the unstandardised coefficient beta ( $ab$ ) for FL, QAS, and RO are 0.19, 0.342, and 0.135, respectively. The study concludes that MAPs fully mediate the relationships between FL, QAS, RO, and performance.

Based on the results, our findings support the first hypothesis,  $H1$ , which asserts that there is a significant relationship between MAPs and performance. This is shown from the multiple regression analyses presented in Tables 3-5 that demonstrate MAPs positively and significantly affect performance. This finding aligns with previous findings, such as Dahal et al. (2020) and Almatarneh et al. (2022). Similarly, the results support the second hypothesis,  $H2$ , which states that there is a significant relationship between financial literacy of owner/managers and the adoption of basic MAPs. This finding provides new statistical evidence for the positive and significant effect of financial literacy of owners/managers on MAPs, which is notably lacking in the current literature. The results support previous arguments by Tuffour et al. (2022) and Atkinson and Messy (2012) that financial literate owner/managers are more likely to require detailed information on resource allocation, risk, and control. They are also better equipped to use management accounting tools with a greater intention to improve the profitability and sustainability of businesses (Mohamed Zabri et al., 2021).

Finally, the findings support the rest of the hypotheses, which are:  $H3$ , which states there is a significant relationship between risk orientation and the adoption of MAPs;  $H4$ , where there is a significant relationship between qualified accounting staff and the adoption of MAPs; and  $H5$ , where MAPs significantly mediate the relationships between financial literacy, qualified accounting staff, risk orientation, and performance. This study supports previous studies such as Khavis et al. (2022), Lusardi and Messi (2023), and Walker and Shenkir (2018), who argued that financial literacy and competent staff, as well as risk orientation, can improve the performance of businesses, particularly when MAPs are employed to facilitate the performance achievement of the business. Matsoso et al. (2021) assert that the MAP usage through budgeting mirrors the level of education of SME owner/managers and the competency of employees, as educated respondents understand the



**Table 6: Sobel test results FL, QAS, RO, MAPs and performance**

| Independent variables | Test statistic | Std. Error | P-value | Indirect effect, B (a * b) | Std. Error (a * b) |
|-----------------------|----------------|------------|---------|----------------------------|--------------------|
| FL                    | 3.578          | 0.0530     | 0.000   | 0.190                      | 0.053              |
| QAS                   | 3.015          | 0.1139     | 0.002   | 0.343                      | 0.115              |
| RM                    | 2.655          | 0.0511     | 0.008   | 0.136                      | 0.052              |

value of implementing robust management accounting systems. Some MSMEs are uninformed of the underlying reasons for MAP adoption since they lack understanding of the benefits it offers to their businesses.

## 5. SUMMARY AND CONCLUSION

This study aims to examine the influence of financial literacy, risk orientation and qualified accountants on performance and the roles of MAPs among MSMEs in Malaysia. The study indicate that MAPs fully mediate the relationship between financial literacy of owner/managers, risk orientation and qualified accounting staff with performance. This indicates that businesses with higher financial competency, greater emphasis on risk orientation and deploy qualified accounting staff will lead higher usage of financial and non-financial information provided by management accounting thereby can significantly improve performance. As today’s market has become more competitive and uncertain, smaller businesses need to be equipped with relevant skills and competency in order to make the financial right decisions. It is important for owner/manager of MSMEs to have a good financial knowledge and skills as they would aware the risks and ways to mitigate it. Small enterprises should also be able to use critical information for business decision-making by deploying accounting staff who can prepare thorough and systematic financial reporting.

The findings produce some novel results on the use of MAPs by Malaysian MSMEs and contribute to the current literature in this area. The findings also provide valuable insight for relevant policymakers towards further development of MSMEs in the context of developing countries. Understanding key variables that determine performance, can help prevent business failure among MSMEs. MSMEs should focus on how to increase their financial competencies, either by increasing the financial knowledge of owners or managers, hiring more trained accounting staff, or putting a greater emphasis on risk management. Training programs should be made available to small businesses that will raise their awareness and knowledge of suitable business management practices and skills.

This study has some limitations that need to be addressed. First, this research examined the financial literacy, risk orientation, and qualified accountants on performance among MSMEs in the southern region of Malaysia; hence, the sample size is quite small. Caution must be exercised to generalise the results to overall MSMEs. This study suggests the need for further research on MAPs and performance in MSMEs. Future research should consider additional variables that could have moderating variables on the relationships between FL, QAS, RO, MAPs, and performance. To improve a detailed understanding of the effect of each variable on performance, future studies can examine each of the variables separately. This would give deeper context on

the interactions between the independent variables, MAPs, and performance. As this research was carried out in a small number of MSMEs, future studies should obtain a larger sample size in order to increase the validity and generalisation of the results.

## 6. ACKNOWLEDGEMENTS

The financial support from the University of Tun Hussein Onn Malaysia, Ministry of Higher Education, under a research grant Q431 is acknowledged with gratitude.

## REFERENCES

- Abiodun, A. (2016), Financial literacy and SME firm performance. *International Journal of Research Studies in Management*, 5(1), 31-43.
- Adu-Gyamfi, J., Yusheng, K., Ayisi, A.L., Peki, W.E. (2021), Determinants of management accounting practices by manufacturing firms. *EPRA International Journal of Economics, Business and Management Studies*, 8(5), 55-61.
- Ahmad, K. (2014), The adoption of management accounting practices in Malaysian small and medium-sized enterprises. *Asian Social Science*, 10, 236-249.
- Ahmad, K., Mohamed Zabri, S. (2015), Factors explaining the use of management accounting practices in Malaysian medium-sized firms. *Journal of Small Business and Enterprise Development*, 22(4), 762-781.
- Ahmad, K., Mohamed Zabri, S. (2024), The role of management accounting on the relationship between corporate social responsibility and performance in SMEs. *Measuring Business Excellence*, 28(1), 122-136.
- Alabdullah, T.T.Y. (2019), Management accounting and service companies’ performance: Research in emerging economies. *Australasian Accounting, Business and Finance Journal*, 13(4), 100-118.
- Almatarneh, Z., Jarrah, B., Jarrah, M. (2022), The role of management accounting in the development of supply chain performance in logistics manufacturing companies. *Uncertain Supply Chain Management*, 10(1), 13-18.
- Anton, S.G., Nucu, A.E.A. (2020), Enterprise risk management: A literature review and agenda for future research. *Journal of Risk and Financial Management*, 13(11), 281.
- Armitage, H.M., Lane, D., Webb, A. (2020), Budget development and use in small-and medium sized enterprises: A field investigation. *Accounting Perspectives*, 19(3), 205-240.
- Armitage, H.M., Webb, A., Glynn, J. (2016), The use of management accounting techniques by small and medium-sized enterprises: A field study of Canadian and Australian practice. *Accounting Perspectives*, 15(1), 31-69.
- Atkinson, A., Messy, F. (2012), Measuring Financial Literacy: Results of the OECD/International Network on Financial Education (INFE) Pilot Study. *OECD Working Papers on Insurance and Private Pensions*.
- Basar, S.A., Ibrahim, N.A., Tamsir, F., Rahman, A.R.A., Zain, N.N.M., Poniran, H., Ismail, R.F. (2024), I-FinTech adoption mediation on the financial literacy elements and sustainable entrepreneurship among Bumiputera MSMEs in Malaysia. *International Journal of Economics and Financial Issues*, 14(4), 138-147.

- Chabaefe, N.N., Qutieshat, A. (2024), Financial literacy, financial education and financial experience: Conceptual framework. *International Journal of Economics and Financial Issues*, 14(4), 44-55.
- Dahal, R.K., Bhattarai, G., Karki, D. (2020), Management accounting techniques on rationalize decisions in the Nepalese listed manufacturing companies. *Researcher: A Research Journal of Culture and Society*, 4(1), 112-128.
- Demiröz, S. (2019), State-of-the-art management accounting for SMEs. *Control Management Review*, 63, 56-61.
- Department of Statistic Malaysia DOS. (2021), *Census of Establishments and Enterprises. Profile of Small and Medium Enterprises*. Malaysia: Department of Statistic Malaysia.
- Eichholz, J., Hoffmann, N., Schwering, A. (2024), The role of risk management orientation and the planning function of budgeting in enhancing organizational resilience and its effect on competitive advantages during times of crises. *Journal of Management Control*, 35, 17-58.
- Eniola, A.A., Entebang, H. (2017), SME managers and financial literacy. *Global Business Review*, 18(3), 559-576.
- Erdin, C., Ozkaya, G. (2020), Contribution of small and medium enterprises to economic development and quality of life in Turkey. *Heliyon*, 6(2), e03215.
- Esiebugie, U., Richard, A.T., Emmanuel, A.L. (2018), Financial literacy and performance of small and medium scale enterprises in Benue State, Nigeria. *International Journal of Economics, Business and Management Research*, 2(4), 65-79.
- Grossi, G., Kallio, K.M., Sargiacomo, M., Skoog, M. (2020), Accounting, performance management systems and accountability changes in knowledge-intensive public organizations: A literature review and research agenda. *Accounting, Auditing and Accountability Journal*, 33(1), 256-280.
- Hayes, A.F., Rockwood, N.J. (2017), Regression-based statistical mediation and moderation analysis in clinical research: Observations, recommendations, and implementation. *Behaviour Research and Therapy*, 98, 39-57.
- Khavis, J.A., Krishnan, J., Tipton, C. (2022), Implications of employee satisfaction and work-life balance in accounting firms. *Current Issues in Auditing*, 16(1), 16-26.
- Lavia Lopez, O., Hiebl, M.R. (2014), Management accounting in small and medium-sized enterprises: Current knowledge and avenues for further research. *Journal of Management Accounting Research*, 27(1), 81-119.
- Lusardi, A., Messy, F.A. (2023), The importance of financial literacy and its impact on financial wellbeing. *Journal of Financial Literacy and Wellbeing*, 1(1), 1-11.
- Matsoso, M.L., Nyathi, M., Nakpodia, F.A. (2021), An assessment of budgeting and budgetary controls among small and medium-sized enterprises: Evidence from a developing economy. *Journal of Accounting in Emerging Economies*, 11(4), 552-577.
- Mohamed Zabri, S., Ahmad, K., Adonia, S.A. (2021), The influence of managerial characteristics on external financing preferences in smaller enterprises: The case of Malaysian micro-sized enterprises. *Cogent Business and Management*, 8, 1912524.
- Nair, S., Nian, Y. (2017), Factors affecting management accounting practices in Malaysia. *International Journal of Business and Management*, 12, 177.
- Nielsen, S., Pontoppidan, I.C. (2020). Exploring the inclusion of risk in management accounting and control. *Management Research Review*, 43(1), 82-112.
- Nangpiire, C., Gyebi, F.O., Nasse, T. (2024), Sustainable procurement practices and organisational performance of small and medium enterprises in Ghana. *International Journal of Economics and Financial Issues*, 14(1), 95-106.
- Nuhu, N.A., Baird, K., Appuhami, R. (2016), The association between the use of management accounting practices with organizational change and organizational performance. *Advances in Management Accounting*, 26, 67-98.
- Ojra, J., Opute, A.P., Alsolmi, M.M. (2021), Strategic management accounting and performance implications: A literature review and research agenda. *Future Business Journal*, 7, 64.
- Oladele, T.O., Alagbe, E.A., Ojo, O.I. (2023), Management accounting techniques and performance of SMES in Nigeria: Moderating role of accounting information quality. *Nigerian Journal of Management Sciences*, 24(1), 62-73.
- Oppi, C., Cavicchi, C., Vagnoni E. (2020), How does management accounting affect entrepreneurial orientation in SMEs? A structural equation modelling. *Management Control*, 1, 63-78.
- Pedroso, E., Gomes, F.C. (2020), The effectiveness of management accounting systems in SMEs: A multidimensional measurement approach. *Journal of Applied Accounting Research*, 21(3), 497-515.
- Pelz, M. (2019), Can management accounting be helpful for young and small companies? Systematic review of a paradox. *International Journal of Management Reviews*, 21, 256-274.
- Pitcher, G.S. (2015), *Management Accounting in Support of the Strategic Management Process*. CIMA Executive Summary Report. Vol. 11. United Kingdom: CIMA.
- Rahim, S., Balan, V. (2021), Financial literacy: The impact on the profitability of the SMEs in Kuching. *International Journal of Business and Society*, 21, 1172-1191.
- Senftlechner, D., Hiebl, M.R. (2015), Management accounting and management control in family businesses: Past accomplishments and future opportunities. *Journal of Accounting and Organizational Change*, 11(4), 573-606.
- Siswanti, I., Halida A.M. (2021), Financial knowledge, financial attitude, and financial management behavior: Self-control as mediating. *The International Journal of Accounting and Business Society*, 28(1), 105-132.
- SMEs Corp. (2024), *Official National SME Definition*. Available from: <https://www.smeinfo.com.my/official-definition-of-sme> [Last accessed on 2024 Jun 05].
- Tuffour, J.K., Amoako, A.A., Amartey, E.O. (2022), Assessing the effect of financial literacy among managers on the performance of small-scale enterprises. *Global Business Review, International Management Institute*, 23(5), 1200-1217.
- Valeri, M. (2021), *Contingency and choice in organization theory*. In: *Organizational Studies. Contributions to Management Science*. Cham: Springer.
- Vanauken, H.E., Ascigil, S., Carraher, S. (2016), Turkish SMEs' use of financial statements for decision making. *The Journal of Entrepreneurial Finance*, 19(1), 1-30.
- Vetchagool, W., Augustyn, M.M., Tayles, M. (2020), Impacts of activity-based costing on organizational performance: Evidence from Thailand. *Asian Review of Accounting*, 28(3), 329-349.
- Walker, P.L., Shenkir, W.G. (2018), *Enterprise Risk Management Tools and Techniques for Effective Implementation*. Available from: <https://asiapac.imanet.org/research-publications/statements-on-management-accounting/enterprise-risk-management-tools-and-techniques-for-effective-implementation?psso=true>
- Yanti, F., Endri, E. (2024), Financial behavior, overconfidence, risk perception and investment decisions: The mediating role of financial literacy. *International Journal of Economics and Financial Issues*, 14(5), 289-298.
- Ylä-Kujala, A., Kouhia-Kuusisto, K., Ikäheimonen, T., Laine, T., Kärri, T. (2023), Management accounting adoption in small businesses: Interfaces with challenges and performance. *Journal of Accounting and Organizational Change*, 19(6), 46-69.