



# Determinants of Accounting Information Use with Environmental Uncertainty as Moderation in Food and Beverages MSMEs in Jambi City

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**Abstract:** This study examines the determinants of accounting information use among food and beverage MSMEs in Jambi City, with environmental uncertainty as a moderating variable. The use of accounting information is essential for improving decision-making quality and ensuring business sustainability; however, many MSME owners have not yet utilized it optimally. Therefore, this study aims to analyze the effects of business owners' educational background, business scale, and accounting knowledge on the use of accounting information. A quantitative approach was employed using a survey method. Data were collected through structured questionnaires distributed to 99 MSME owners or managers selected using simple random sampling. The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) and moderated regression analysis to test both direct and moderating effects. The results show that educational background ( $\beta = 0.439$ ;  $p < 0.001$ ), business scale ( $\beta = 0.258$ ;  $p < 0.001$ ), and accounting knowledge ( $\beta = 0.254$ ;  $p < 0.001$ ) have significant positive effects on accounting information use. Environmental uncertainty significantly moderates the effects of educational background ( $\beta = -0.126$ ;  $p = 0.014$ ) and business scale ( $\beta = -0.126$ ;  $p = 0.034$ ), both in a weakening direction. However, it does not significantly moderate the effect of accounting knowledge ( $\beta = -0.036$ ;  $p = 0.618$ ). The model explains 75.2% of the variance in accounting information use ( $R^2 = 0.752$ ). In conclusion, this study highlights that accounting knowledge is the most stable determinant, while environmental uncertainty weakens the influence of other factors. These findings imply that strengthening accounting knowledge through training is a key strategy to improve accounting information use in MSMEs regardless of environmental conditions.

**Keywords:** Educational Background, Business Scale, Accounting Knowledge, Environmental Uncertainty, Use Of Accounting Information

## Introduction

The use of accounting information refers to the process of utilizing financial and non-financial data that has been processed into relevant information to support business decision-making, planning, control, and organizational performance evaluation (Cascino et al., 2021). In the context of MSMEs, particularly the food and beverages sector, the use of accounting information plays a more complex strategic role compared to large enterprises

due to limited resources and simple organizational structures. Business scale, measured through indicators such as total assets, revenue, number of employees, or operational area, reflects the capacity and operational complexity of a firm (D'Amato & Falivena, 2020). Larger businesses tend to have more complex transactions, more diverse stakeholders, and greater reporting requirements, thus driving the adoption of more systematic accounting practices. Data indicates that of 64.2 million MSME units in Indonesia, an estimated 85–92% do not maintain financial statements in accordance with SAK EMKM standards, and 35–50% do not perform systematic financial recording at all (BPS-Statistics Indonesia, 2024; Kadin Indonesia, 2023). This condition results in difficulties accessing capital, suboptimal performance evaluation, and decision-making that is not based on accurate data.

A review of the literature reveals that factors influencing the use of accounting information have produced diverse and contradictory findings. Regarding the effect of business owner educational background, studies by Xuan et al. (2020), Santos et al. (2023), and Hendrawan et al. (2023) found significant effects, while Marcuta et al. (2024) and Baroroh et al. (2020) found no effect. The relationship between business scale and accounting information use also shows inconsistency, with Igboke & Ogbu (2023), Jacobs & Kabaso (2025), and Al-Okaily (2024) demonstrating significant effects, which contradict the findings of Le et al. (2020) and Kalantonis et al. (2021). Accounting knowledge shows a similar pattern Tambunan et al. (2022), Wijekoon et al. (2024), and Fitrius et al (2022) found significant effects, whereas Fatimah (2022) and Christanty et al. (2023) concluded otherwise. When these variables are moderated by environmental uncertainty, Putri & Aufa (2022) and Zhao et al. (2022) showed significant effects, while Mustofa & Trisnarningsih (2023) found no significant moderation.

This study employs Contingency Theory as its theoretical foundation, which posits that no accounting system is universally optimal for all organizations; rather, its effectiveness depends on the fit with specific contingency factors (Lartey, 2020; Safari & Saleh, 2020). This research draws upon Ermawati et al. (2024) with several significant differences as novelty: (1) the research subject focuses on food and beverages MSMEs in Jambi City; (2) the independent variables comprise business owner educational background, business scale, and accounting knowledge; and (3) the focus is on the modern culinary industry with distinct operational characteristics. Based on the research gap and novelty described above, this study aims to analyze the effects of business owner educational background, business scale, and accounting knowledge on the use of accounting information in food and beverages MSMEs in Jambi City, as well as to analyze the moderating role of environmental uncertainty on these relationships.

## Research Method

### Research Design

This study employs a quantitative method with a survey approach through questionnaire distribution. Data analysis uses Partial Least Square-Structural Equation Modeling (PLS-SEM) and moderated regression analysis to test the research hypotheses. The dependent variable is the use of accounting information, the independent variables

include business owner educational background, business scale, and accounting knowledge, with environmental uncertainty as the moderating variable.

### Population, Sample, Sampling

The research population consists of 11,296 culinary MSME units in Jambi City based on data from the Jambi City Department of Manpower, Cooperatives, and SMEs (2024). The sample size was calculated using the Slovin formula with a 10% margin of error, yielding a minimum sample of 99 respondents. The sampling technique uses simple random sampling through two stages: (1) identification and mapping of the food and beverages population through the Jambi Urban Life database, Google Maps, social media, and field surveys; (2) random selection of samples from the list meeting inclusion criteria.

Inclusion criteria encompass: MSMEs operating in the modern-concept food and beverages sector, operating within Jambi City, active for at least 1 year, classified as MSMEs under Government Regulation No. 7 of 2021, possessing a clear business entity form and basic business permits, maintaining routine operational activities at least 5 days per week, and willing to participate. Exclusion criteria include traditional culinary businesses, international franchises, informal businesses, and those without business permits.

### Instrument

The research instrument is a questionnaire using a 1–5 Likert scale developed based on scholarly references (Cascino et al., 2021; Igboke & Ogbu, 2023; T. Tambunan et al., 2021; Wijekoon et al., 2024) and adapted to the operational conditions of food and beverages in Jambi City. Each variable is measured with 5 indicators. Instrument validity was tested through convergent validity (outer loading > 0.7; AVE > 0.5), discriminant validity (cross loading), and reliability through Cronbach's Alpha and Composite Reliability (> 0.7), following the evaluation criteria established by Hair & Alamer (2022). Data analysis employed PLS-SEM, which provides flexibility in handling non-normally distributed data and relatively small sample sizes (Hair & Alamer, 2022). Data collection was conducted through Google Forms distributed via direct contact, social media, and field visits.

## Result and Discussion

**Table 1.** Descriptive Statistics

Variable	N	Min	Max	Mean	Std. Dev.
X1 Educational Background	99	1	4	2.496	2.696
X2 Business Scale	99	1	4	2.561	2.448
X3 Accounting Knowledge	99	1	4	2.547	2.597
Y Use of Accounting Info	99	3	5	4.385	3.032
Z Environmental Uncertainty	99	1	4	2.505	2.775

Source: Processed Data by Researcher (2026)

As shown in Table 1, the use of accounting information variable (Y) has the highest mean value of 4.385 (very high category), indicating that respondents generally utilize accounting information for decision-making. Meanwhile, the independent variables (X1, X2, X3) and the moderating variable (Z) fall within the low category with means ranging from

2.496 to 2.561, suggesting a gap between the high use of accounting information and the low scores of predictor variables.

**Table 2.** Bootstrapping Path Coefficients Results

Path	$\beta$	T-Statistics	P-Values	Result
X1 $\rightarrow$ Y	0.439	8.247	0.000	Accepted
X2 $\rightarrow$ Y	0.258	4.655	0.000	Accepted
X3 $\rightarrow$ Y	0.254	4.387	0.000	Accepted
Z $\times$ X1 $\rightarrow$ Y	-0.126	2.467	0.014	Accepted
Z $\times$ X2 $\rightarrow$ Y	-0.126	2.128	0.034	Accepted
Z $\times$ X3 $\rightarrow$ Y	-0.036	0.499	0.618	Rejected

Source: SmartPLS Output by Researcher (2026)

**Table 3.** R-square, Q-square, and F-square Results

Evaluation Criteria	Value	Category
R <sup>2</sup> (Y)	0.752	High
Q <sup>2</sup> (Y)	0.514	Very Predictive
F <sup>2</sup> X1 $\rightarrow$ Y	0.734	Large
F <sup>2</sup> X2 $\rightarrow$ Y	0.244	Medium
F <sup>2</sup> X3 $\rightarrow$ Y	0.246	Medium
F <sup>2</sup> Z $\times$ X1 $\rightarrow$ Y	0.052	Small
F <sup>2</sup> Z $\times$ X2 $\rightarrow$ Y	0.057	Small
F <sup>2</sup> Z $\times$ X3 $\rightarrow$ Y	0.005	No Effect

Source: SmartPLS Output by Researcher (2026)

Based on Table 2, hypothesis testing using PLS-SEM through bootstrapping procedures shows that of the six hypotheses proposed, five were accepted and one was rejected. The research model explains 75.2% of the variance in accounting information use (R<sup>2</sup>=0.752) with very good predictive relevance (Q<sup>2</sup>=0.514).

Business owner educational background has a significant effect on the use of accounting information with the largest path coefficient ( $\beta$ =0.439; T=8.247; p=0.000) and a large effect size (F<sup>2</sup>=0.734). This finding aligns with Contingency Theory, which states that managerial characteristics constitute internal contingency factors that influence the design and use of accounting information in organizations (Safari & Saleh, 2020). Formal education equips business owners with the knowledge capital necessary to understand accounting concepts and apply them in business decision-making. This result is consistent with Santos et al. (2023), who demonstrated a significant effect of education level on accounting information use among SMEs in Portugal, as well as Xuan et al. (2020) and Hendrawan et al. (2023), who found that educational background is a key factor in enhancing managerial capacity for accounting information use.

Business scale has a significant effect on the use of accounting information ( $\beta$ =0.258; T=4.655; p=0.000) with a medium effect size (F<sup>2</sup>=0.244). From a Contingency Theory perspective, larger business size creates higher operational complexity and more intensive coordination needs, thus requiring more structured accounting information (Lartey, 2020).

Larger food and beverages MSMEs face more complex raw material inventory management challenges, higher transaction volumes, and more sophisticated financial planning requirements. D'Amato & Falivena (2020) confirmed that firm size is a significant factor influencing organizational practices, where larger firms demonstrate more structured reporting and accountability systems. This finding is consistent with Igboke & Ogbu (2023), Jacobs & Kabaso (2025), and Al-Okaily (2024), who demonstrated significant effects of business scale on accounting information utilization.

Accounting knowledge has a significant effect on the use of accounting information ( $\beta=0.254$ ;  $T=4.387$ ;  $p=0.000$ ) with a medium effect size ( $F^2=0.246$ ). Sound accounting knowledge enables business owners to implement accurate recording systems, conduct cost structure analyses, and optimize working capital, which is critical in the food and beverages industry with thin profit margins. This result is consistent with Wijekoon et al. (2024), who demonstrated the effect of accounting knowledge levels on financial information utilization among SMEs in Sri Lanka, as well as Tambunan et al. (2022) and Fitrius et al. (2022), who found significant effects of accounting knowledge on the effectiveness of accounting information systems.

Environmental uncertainty significantly moderates the effect of business owner educational background on accounting information use in a weakening direction ( $\beta=-0.126$ ;  $T=2.467$ ;  $p=0.014$ ). Under high uncertainty, backward-looking and historical accounting information becomes less relevant for prediction, leading even highly educated business owners to rely more on business intuition and real-time market information. This finding is consistent with Ermawati et al. (2024) and Putri & Aufa (2022), who found moderating effects of environmental uncertainty on the relationships between determinant factors and accounting information use.

Environmental uncertainty also significantly moderates the effect of business scale on accounting information use in a weakening direction ( $\beta=-0.126$ ;  $T=2.128$ ;  $p=0.034$ ). Larger businesses with formal accounting information systems tend to be less flexible and responsive to rapid changes in the business environment. Chen & Tian (2022) found that under high uncertainty, organizations need to develop adaptive capabilities beyond traditional formal information systems. Darvishmotevali et al. (2020) reinforced this finding by demonstrating that environmental uncertainty moderates the relationship between organizational agility and creativity in the hospitality industry.

Environmental uncertainty does not significantly moderate the effect of accounting knowledge on the use of accounting information ( $\beta=-0.036$ ;  $T=0.499$ ;  $p=0.618$ ;  $F^2=0.005$ ). This finding reveals that accounting knowledge is a fundamental cognitive competency that is relatively stable against external environmental changes. Unlike educational background, which reflects formal knowledge that may become less relevant under high uncertainty, or business scale, whose effectiveness may shift in volatile environments, accounting knowledge is a technical ability that, once mastered, continues to be applied across varying environmental conditions (Lartey, 2020). This finding contributes novelty by demonstrating that not all internal contingency variables interact with external contingency variables in the same manner, implying that enhancing accounting knowledge through training can be an

effective strategy regardless of business environment conditions.

## Conclusion

This study highlights important theoretical and practical implications. Empirically, the findings confirm that business owners' educational background, business scale, and accounting knowledge are significant determinants of accounting information use among food and beverage MSMEs in Jambi City, with the model explaining 75.2% of the variance. Educational background has the strongest influence, followed by business scale and accounting knowledge. However, environmental uncertainty weakens the effects of educational background and business scale, while the effect of accounting knowledge remains stable and unaffected, indicating its role as a more robust cognitive competency. Theoretically, these findings reinforce contingency theory by demonstrating that not all internal factors interact with external environmental conditions in the same way.

Practically, the results suggest that improving accounting knowledge through training, mentoring, and capacity-building programs is the most effective and consistent strategy to enhance the use of accounting information in MSMEs, regardless of environmental uncertainty. For future research, it is recommended to expand the geographical scope, increase the sample size, and apply longitudinal designs to capture dynamic changes over time, as well as to include additional variables such as information technology adoption, business age, and owner motivation to provide a more comprehensive understanding of the determinants of accounting information use.

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