

Business Model Transformation and Information Technology Use on the Quality of Accounting Information Systems in MSMEs in Indonesia

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ABSTRACT

This research investigates the impact of business model transformation (BMT) and information technology utilization (ITU) on the quality of accounting information systems (QAIS) in Micro, Small, and Medium Enterprises (MSMEs) in Indonesia. A quantitative approach is employed, with data collected through a survey of MSMEs across various industries. Structural Equation Modeling (SEM) with Partial Least Squares (PLS) is used for data analysis. The findings reveal significant positive relationships between BMT, ITU, and QAIS. Business model transformation and IT utilization are found to significantly enhance the quality of accounting information systems in Indonesian MSMEs. These results highlight the importance of innovative business practices and effective technology adoption in improving financial management processes within MSMEs, providing valuable insights for practitioners, policymakers, and researchers.

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1. INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) play a critical role in Indonesia's economic landscape by driving economic growth, innovation, and job creation [1]–[5]. These enterprises are critical to expanding employment opportunities, reducing poverty, and contributing significantly to the country's GDP, exports, and capital formation. Favorable tax policies can positively influence investment decisions and business growth of MSMEs, leading to sustainable development and favorable economic outcomes. Providing MSMEs with access to financial resources, technical assistance, and business development support can further empower them to expand operations, increase production capacity, and create new jobs. However, challenges such as limited business management skills, risk aversion, and lack of government support hinder the full potential of MSMEs in Indonesia.

Digital transformation is crucial for Micro and Small Enterprises (MSEs) in Indonesia, especially in adopting modern practices such as Accounting Information Systems (AIS) [6], [7]. Although MSEs show significant adoption of digital technology, challenges such as limited resources, digital skills, and resistance to change remain [8]. Implementing technology-based AIS can improve business efficiency and help MSEs adapt to Industry 4.0, but it also poses challenges if technological advancements are not adopted [9]. In regions such as Banyumas, solutions such as the Village Results Information System (SIHASA) V2 website are proposed to support MSEs and the government in managing activities effectively [10]. The understanding of accounting and the benefits of financial records have a positive impact on MSEs in maintaining the quality of financial records, which is crucial for their development and growth. Therefore, embracing digital transformation and optimizing IT, including AIS, is crucial for Indonesian MSEs to thrive in the ever-evolving business landscape.

Micro, Small, and Medium Enterprises (MSMEs) in Indonesia play an important role in driving economic growth and providing employment [11]–[13]. These enterprises face various challenges such as limited resources, technological obsolescence, and limited market access [14], [15]. To overcome these constraints, the adoption of innovative business models and Information Technology (IT) solutions can significantly improve the competitiveness, efficiency, and sustainability of MSMEs. Various studies emphasize the positive impact of digital marketing, financial management, access to capital, entrepreneurial orientation, financial capital, and innovation on the competitiveness and sustainability of MSMEs in different regions of Indonesia. Therefore, utilizing innovative business models and IT solutions can be a catalyst to empower Indonesian MSMEs to thrive in the face of challenges and drive economic progress.

Despite the growing recognition of AIS's pivotal role in MSMEs' decision-making processes and financial management, there exists a discernible gap in understanding how transformative business models and IT utilization influence AIS quality within the Indonesian context. Therefore, this research endeavors to address this gap by investigating the following primary research question:

What is the impact of business model transformation and the utilization of IT on the quality of AIS in MSMEs in Indonesia?

This research aims to achieve several objectives: first, to examine the correlation between business model transformation and the quality of Accounting Information Systems (AIS) in Indonesian Micro, Small, and Medium Enterprises (MSMEs); second, to investigate the relationship between IT utilization and AIS quality within the Indonesian MSME context; third, to assess the collective effect of business model transformation and IT utilization on AIS quality in Indonesian MSMEs; and finally, to offer practical recommendations for policymakers, MSMEs, and stakeholders derived from the research findings.

2. LITERATURE REVIEW

2.1 Business Model Transformation

Business model transformation in MSMEs is essential to improve competitiveness and sustainability [16], [17]. Digital transformation plays an important role in driving business model innovation, with key drivers including ubiquitous connectivity, functional dematerialization, relational decentralization, and flexible scalability [18]. The phenomenon of digital transformation impacts society and businesses globally, driving business model innovation [19]. To facilitate business model innovation driven by digital transformation, enterprises should focus on creating integrated digital customer interfaces [20]. The systematic literature review emphasized the importance of examining context-specific aspects of business model transformation, entrepreneurial techniques, and international dimensions for future investigation. MSMEs can benefit from reconfiguring their business models based on ecosystem-based entrepreneurial activities to improve social and economic efficiency.

2.2 Information Technology Utilization

Information Technology (IT) is essential for Micro, Small, and Medium Enterprises (MSMEs) to improve operational efficiency, decision-making, and strategic capabilities. Various studies emphasize the positive impact of IT adoption on human resource performance, overall employee productivity, and organizational growth [21]–[23]. IT innovation enables MSMEs to manage

and market products efficiently, leading to improved organizational performance and competitiveness [24], [25]. Developing a customized IT Governance Framework for MSMEs is essential to align IT with business objectives, ensuring effective utilization of technology. Investing in IT not only benefits companies but also contributes to job creation and economic growth, emphasizing the need for MSMEs to embrace technology for sustainable business practices.

2.3 Accounting Information Systems

Accounting Information Systems (AIS) are essential for organizations to effectively collect, process, and present financial data [7], [26]–[29]. In the context of Micro, Small, and Medium Enterprises (MSMEs), AIS helps with financial management, performance tracking, and strategic decision-making. Implementing technology-based AIS can improve efficiency and help MSMEs adapt to the challenges of Industry 4.0, although this can pose adoption hurdles. Factors that influence AIS performance in organizations include management support and formalization of AIS development. High-quality AIS provides accurate, timely, and relevant financial information, supporting sound decision-making, regulatory compliance, and stakeholder accountability. MSMEs benefit significantly from a well-functioning AIS, enabling them to navigate financial complexities and make strategic plans.

2.4 Conceptual Framework

Building upon the literature review, the conceptual framework for this research is developed as follows:

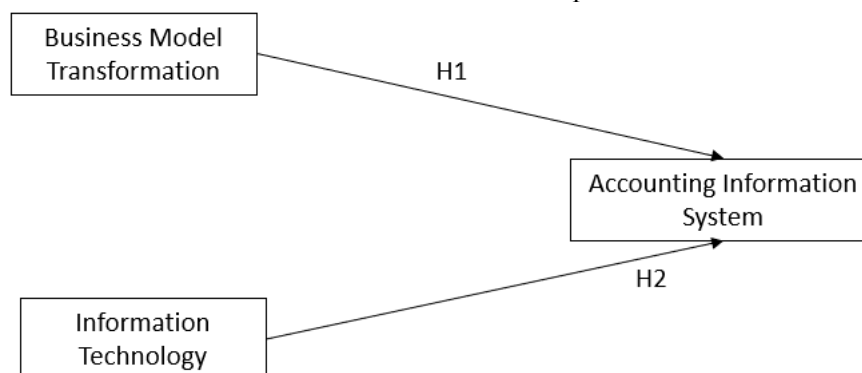


Figure 1. Conceptual Framework

3. METHODS

In this study, we delineate the research design, population, and sampling techniques, data collection methods, and data analysis approaches utilized to explore the impact of business model transformation (BMT) and information technology utilization (ITU) on the quality of accounting information systems (QAIS) in Micro, Small, and Medium Enterprises (MSMEs) in Indonesia. Furthermore, we elucidate the application of Structural Equation Modeling (SEM) with Partial Least Squares (PLS) 3 for data analysis. Employing a quantitative research design, the study examines variable relationships and tests proposed hypotheses through a cross-sectional survey method targeting MSMEs across diverse industries in Indonesia. The population under consideration comprises MSMEs in Indonesia, with purposive sampling employed to select entities that have undergone business model transformation and utilize information technology. A sample size of 120 MSMEs is aimed for, determined through a formula for estimating proportions with a specified margin of error and confidence level. Data collection will ensue via structured questionnaires administered to chosen MSMEs, encompassing items on business model transformation, information technology utilization, and QAIS quality. Respondents will rate their agreement using Likert-type scales, with provision for qualitative comments or suggestions.

Data Analysis

The collected data will be analyzed using Structural Equation Modeling (SEM) with Partial Least Squares (PLS) 3. SEM-PLS is a powerful statistical technique suitable for analyzing complex relationships among latent variables and observed indicators, making it well-suited for this study's multidimensional research model.

The data analysis process will encompass several crucial steps: firstly, Data Preprocessing, where collected data undergoes scrutiny for completeness, consistency, and normality, with appropriate handling of missing data. Secondly,

Measurement Model Assessment ensures the reliability and validity of the measurement model through assessments of internal consistency and convergent validity. Thirdly, Structural Model Assessment employs PLS-SEM to analyze relationships between latent constructs, estimate path coefficients, and evaluate model fit. Fourthly, Bootstrapping will be utilized to enhance the robustness of parameter estimates, especially in small sample sizes. Fifthly, Model Evaluation will utilize indices like R-squared, Q², and SRMR to assess overall fit. Lastly, Hypothesis Testing will determine the acceptance or rejection of proposed hypotheses based on estimated path coefficients and significance levels.

4. RESULTS AND DISCUSSION

This section presents the results of the data analysis conducted to investigate the impact of business model transformation (BMT) and information technology utilization (ITU) on the quality of accounting information systems (QAIS) in Micro, Small, and Medium Enterprises (MSMEs) in Indonesia. The discussion provides insights into the findings, implications, and limitations of the study.

4.1 Descriptive Statistics

In this section, we present the descriptive statistics for the demographic characteristics of the respondents and the key variables under investigation: business model transformation (BMT), information technology utilization (ITU), and the quality of accounting information systems (QAIS). The data is based on responses obtained from a survey conducted among Micro, Small, and Medium Enterprises (MSMEs) in Indonesia. The demographic characteristics of the respondents include information such as the size of the MSMEs, industry sector, and years of operation. Table 1 provides a summary of these demographic characteristics:

Table 1. Demographic Sample

Demographic Characteristic	Frequency	Percentage
Size of MSME		
- Micro	45	37.5%

- Small	50	41.7%
- Medium	25	20.8%
Industry Sector		
- Manufacturing	35	29.2%
- Services	45	37.5%
- Retail	40	33.3%
Years of Operation		
- Less than 5 years	30	25.0%
- 5-10 years	40	33.3%

- More than 10 years	50	41.7%
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Source: Data processed by the author (2024)

4.2 Descriptive Statistics for Key Variables

The key variables under investigation - business model transformation (BMT), information technology utilization (ITU), and the quality of accounting information systems (QAIS) - are measured on a Likert scale ranging from 1 to 5, where 1 represents "Strongly Disagree" and 5 represents "Strongly Agree". Table 2 presents the descriptive statistics for these variables:

Table 2. Descriptive Statistics

Variable	Mean	Standard Deviation	Minimum	Maximum
Business Model Transformation (BMT)	3.84	0.66	2	5
Information Technology Utilization (ITU)	4.27	0.54	3	5
Quality of Accounting Information Systems (QAIS)	4.03	0.72	2	5

Source: Data processed by the author (2024)

These descriptive statistics provide an overview of the central tendency and dispersion of the data for each variable, allowing for a better understanding of the respondents' perceptions regarding business model transformation, information technology utilization, and the quality of accounting information systems in Indonesian MSMEs.

4.3 Measurement Model Assessment

The measurement model assessment evaluates the reliability and validity of the latent constructs, including Business Model Transformation (BMT), Information Technology Utilization (ITU), and Accounting Information Systems (AIS). The evaluation is based on factor loadings, Cronbach's alpha, composite reliability, and average variance extracted (AVE), as presented in the table below:

Table 3. Validity and Reliability

Variable	Code	Loading Factor	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Business Model Transformation	BMT1	0.863	0.916	0.941	0.799
	BMT2	0.931			
	BMT3	0.914			
	BMT4	0.865			
Information Technology	IT1	0.871	0.902	0.931	0.773
	IT2	0.901			
	IT3	0.906			
	IT4	0.836			
Accounting Information Systems	AIS1	0.899	0.887	0.922	0.747
	AIS2	0.884			
	AIS3	0.857			
	AIS4	0.815			

Source: Data processed by the author (2024)

The reliability assessment reveals that Cronbach's alpha values for all constructs surpass the acceptable threshold of 0.7, indicating strong internal consistency reliability, while composite reliability values also exceed the recommended threshold, further affirming the constructs' reliability. In terms of convergent validity, all indicators of each construct exhibit loading factors above 0.7, signifying robust convergent validity, and the AVE values for each construct exceed 0.5, suggesting substantial explained variance. Overall, the measurement model assessment underscores the high reliability and convergent validity of the Business Model Transformation, Information Technology Utilization, and Accounting Information Systems constructs. These findings instill

confidence in the measurement model's robustness, supporting subsequent structural model analysis to examine hypothesized relationships between the constructs.

4.4 Discriminant Validity

Discriminant validity assesses the extent to which each construct in the measurement model measures a distinct concept from the other constructs. This assessment is crucial to ensure that the constructs are not measuring the same underlying construct. Discriminant validity is typically evaluated by examining the correlation matrix between constructs and ensuring that the square root of the AVE for each construct is greater than the correlations between that construct and other constructs.

Table 4. Discriminant Validity

	Accounting Information Systems	Business Model Transformation	Information Technology
Accounting Information Systems	0.864		
Business Model Transformation	0.717	0.894	
Information Technology	0.607	0.586	0.879

Source: Data processed by the author (2024)

The diagonal values, representing the square root of the Average Variance Extracted (AVE) for each construct, are as follows: approximately 0.865 for Accounting Information Systems, 0.894 for Business Model Transformation, and 0.879 for Information Technology. These values exceed the correlations between the respective constructs and others, demonstrating satisfactory discriminant validity. For instance, the correlation between Accounting Information Systems and Business Model

Transformation (0.717) is lower than both their respective AVE square roots (0.865 and 0.894). Similarly, the correlation between Accounting Information Systems and Information Technology (0.607) is lower than their AVE square roots (0.865 and 0.879), and the correlation between Business Model Transformation and Information Technology (0.586) is lower than their AVE square roots (0.894 and 0.879).

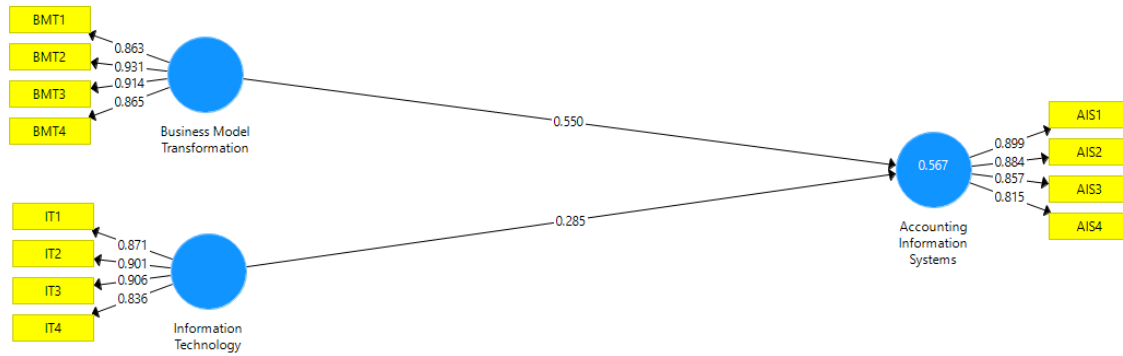


Figure 2. Internal Model Assessment

4.5 Model Fit

Model fit refers to how well the hypothesized model aligns with the observed data. It is crucial to assess model fit to determine the validity and adequacy of the structural equation model (SEM) in explaining the relationships between variables. The fit indices provided for both the Saturated Model and the Estimated Model are essential for evaluating the goodness of fit.

Table 5. Model fit

	Saturated Model	Estimated Model
SRMR	0.057	0.057
d_ULS	0.256	0.256
d_G	0.160	0.160
Chi-Square	114.931	114.931
NFI	0.898	0.898

Source: Data processed by the author (2024)

Several fit indices were utilized to assess the goodness of fit for the models. The Standardized Root Mean Square Residual (SRMR), measuring the difference between observed and model-implied correlations, yielded a value of 0.057 for both the Saturated and Estimated Models, indicating a favorable fit. Similarly, the indices d_ULS and d_G, evaluating the discrepancy between observed and model-implied covariance matrices, showed consistent fit with values of 0.256 and 0.160 respectively for both models. Furthermore, the Chi-Square (χ^2) statistic, reflecting differences between observed and model-implied covariance matrices, yielded a non-significant value of 114.931 for both models, suggesting an acceptable fit. Lastly, the Normed Fit Index (NFI), gauging the

proportion of observed data variance accounted for by the model, yielded a value of 0.898 for both models, indicating a good fit overall.

Table 6. R Square

	R Square	R Square Adjusted
Accounting Information Systems	0.567	0.559

Source: Data processed by the author (2024)

R-Square (Coefficient of Determination) and Adjusted R-Square serve as measures to evaluate the fit of regression models, including structural equation models (SEM), by indicating the proportion of variance in the dependent variable explained by the independent variables in the model. In this study, these values were computed for the Accounting Information Systems (AIS) construct. The R-Square value for AIS reveals that around 56.7% of the variance in the quality of accounting information systems is elucidated by the independent variables (business model transformation and information technology utilization) incorporated in the model. This suggests that the model captures a significant portion of the variability in AIS quality among Indonesian MSMEs. The Adjusted R-Square, which adjusts for the number of predictors in the model, presents a more conservative estimate of the model's explanatory power. For AIS, the Adjusted R-Square is calculated to be 0.559, indicating that after accounting for the number of predictors, approximately 55.9% of the variance in AIS quality is explained by the independent variables.

4.6 Hypothesis Testing

Hypothesis testing involves assessing the statistical significance of relationships between independent and dependent variables in the proposed model. In this study, two hypotheses were tested: (1) Business Model Transformation (BMT) -> Accounting Information Systems (AIS), and (2) Information Technology (IT) -> Accounting Information Systems (AIS). The results are presented in terms of the original sample, sample mean, standard deviation, T statistics, and p-values. For the hypothesis regarding Business Model Transformation -> AIS, the p-value of 0.000 indicates a statistically

significant relationship at the 0.05 significance level. Hence, the null hypothesis is rejected, confirming a significant positive relationship between Business Model Transformation and the Quality of Accounting Information Systems in Indonesian MSMEs. Similarly, for the hypothesis concerning Information Technology -> AIS, the p-value of 0.001 also signifies statistical significance at the 0.05 level. Consequently, the null hypothesis is rejected, indicating a significant positive relationship between Information Technology Utilization and the Quality of Accounting Information Systems in Indonesian MSMEs.

Table 7. Hypothesis Testing

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Business Model Transformation -> Accounting Information Systems	0.550	0.555	0.090	6.112	0.000
Information Technology -> Accounting Information Systems	0.285	0.283	0.087	3.262	0.001

Source: Data processed by the author (2024)

DISCUSSION

The findings of this study provide valuable insights into the dynamics between business model transformation (BMT), information technology utilization (ITU), and the quality of accounting information systems (QAIS) in Micro, Small, and Medium Enterprises (MSMEs) in Indonesia. The discussion below delves into the implications and contributions of the research findings:

Importance of Business Model Transformation

The relationship between business model transformation and accounting information system quality is critical to improving the financial reporting process within MSMEs. [30] This relationship emphasizes the importance of innovative business practices in driving improved efficiency, competitiveness, and sustainability of MSMEs. By adopting new business models in line with evolving market dynamics and customer preferences, MSMEs can improve their overall performance and adaptability." [31] Additionally, the integration of information technology plays an important

role in influencing the quality of financial reporting within MSMEs, highlighting the need for technological advancements to support the accuracy and timeliness of financial reporting." [32] The digitalization of accounting information among MSMEs further confirms the positive impact of technology on the sustainable innovation ecosystem and value creation for society, demonstrating the benefits of using digital tools for long-term success." [33]

Role of Information Technology Utilization

Research on Indonesian MSMEs underscores the importance of information technology (IT) utilization in improving the quality of accounting information systems [7], [9], [34]. Although MSMEs face challenges such as limited resources and technical skills that hinder optimal digitalization [35], the adoption of effective IT solutions such as accounting software and ERP systems can improve financial processes, ensure data accuracy, and facilitate informed decision-making [36]. Investing in technology infrastructure and digital capabilities is

critical for MSMEs to unlock value, drive growth, and successfully navigate the challenges of Industry 4.0. By utilizing IT tools, MSMEs can streamline operations, improve financial reporting, and ultimately thrive in a competitive business landscape.

Implications for MSMEs and Policymakers

MSME owners and managers can leverage the insights from this study to prioritize investments in business model innovation and IT adoption, thereby enhancing their financial management practices and competitive positioning. By embracing digital transformation initiatives and adopting best practices in business model design, MSMEs can unlock new growth opportunities and navigate challenges in an increasingly digitalized economy.

Policymakers and government agencies can use the findings to formulate policies and programs that support MSMEs in their journey toward digital transformation. Initiatives such as providing access to digital infrastructure, offering training and capacity-building programs, and creating conducive regulatory environments can facilitate MSMEs' adoption of innovative business models and technology solutions, ultimately driving economic growth and job creation.

Limitations and Future Research Directions

It's important to acknowledge the limitations of this study, including its focus on Indonesian MSMEs and the use of cross-sectional data. Future research could address these limitations by conducting longitudinal studies across different countries and

industry sectors, exploring additional factors influencing AIS quality, and employing advanced research methodologies to deepen our understanding of the relationships between business model transformation, IT utilization, and AIS quality.

5. CONCLUSION

In conclusion, this study sheds light on the interplay between business model transformation, information technology utilization, and the quality of accounting information systems in Indonesian MSMEs. The empirical findings underscore the significance of innovative business practices and digital capabilities in enhancing financial management processes and driving competitive advantage within MSMEs. MSME owners and managers can leverage these insights to prioritize investments in business model innovation and IT adoption, thereby improving their operational efficiency, decision-making capabilities, and long-term sustainability. Policymakers and government agencies can use the findings to formulate policies and programs that support MSMEs in their digital transformation journey, ultimately fostering economic growth and development. While this study contributes to the existing literature, future research could explore additional factors influencing AIS quality, conduct longitudinal studies across different contexts, and employ advanced research methodologies to further enrich our understanding of financial management practices in MSMEs.

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