The Impact of ERP System Integration, User Training, and Management Support on Operational Efficiency in Mobile Coffee Businesses in Major Cities of Indonesia

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ABSTRACT

This study investigates the impact of Enterprise Resource Planning (ERP) system integration, user training, and management support on operational efficiency in mobile coffee businesses across major cities in Indonesia. A quantitative approach was adopted, involving 65 business owners and managers who provided insights into their ERP adoption processes. Data were collected using structured questionnaires with a Likert scale of 1 to 5 and analyzed using SPSS version 26. The findings revealed that ERP system integration, user training, and management support each significantly and positively impact operational efficiency. ERP system integration and management support were the strongest predictors of improved operational performance. These results suggest mobile coffee businesses can optimize their operations by leveraging ERP systems, enhancing employee training, and ensuring continuous management support. The study provides valuable recommendations for business owners seeking to enhance their operational strategies in a competitive market.

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1. INTRODUCTION

Operational efficiency is critical in the competitive landscape of SMEs, including mobile coffee businesses. Enterprise resource planning (ERP) systems play a key role in streamlining operations and improving decision-making by integrating inventory management, sales, accounting, and customer relations, thereby optimizing the use of resources [1], [2]. In developed countries, SMEs utilize technologies such as cloud computing and AI to improve efficiency, while in developing countries, mobile

technologies and digital platforms help overcome infrastructure limitations [3]. Even so, limited resources and capital are challenges for SMEs in adopting ERP, so employee training and management support are necessary for successful technology integration [4]. ERP improves production processes, inventory management, and finance, and enables data-driven decision-making to maintain competitiveness in a dynamic market [5].

Mobile coffee businesses in Indonesia's major cities are growing rapidly,

but face challenges in operational efficiency, such as supply chain management and cost control. Effective supply chain management provides a competitive advantage, such as in coffee shops in Bandung, where infrastructure and delivery impact performance [6]. ERP systems can improve supply chain agility and time to market [6]. Cost control is also a challenge, as experienced by Jawara Coffee Shop, which reqrruires better production budget management [7]. ERP systems help streamline cost management by providing deep insights into operational costs [7]. The integration of SWOT Analysis and Business Model Canvas helps coffee shops overcome weaknesses such as high cost of goods sold [8], while ERP supports strategic planning with decision-based data [8]. Effective marketing strategies, including social media, increase competitiveness, as in 110 Degree Café [9], and ERP helps manage customer relationships and improve satisfaction [9].

Previous research has highlighted the positive impact of ERP system integration on operational performance in various industries [10], [11], but limited studies have focused specifically on SMEs, particularly mobile coffee businesses. In addition, there is a growing recognition that user training and management support are important factors influencing the success of ERP adoption [12], [13]. Without proper training, employees may struggle to use the system effectively, and without managerial support, the system cannot be utilised to its full potential. Therefore, this study aims to fill the research gap by investigating the combined effects of ERP system integration, user training, and management support on operational efficiency in mobile coffee businesses in Indonesia. This study employs a quantitative approach, using data collected from 65 mobile coffee businesses in major cities in Indonesia. The study explores three main variables - ERP system integration, user training, management support - and their effects on operational efficiency.

2. LITERATURE REVIEW

2.1. Enterprise Resource Planning (ERP) System Integration

Enterprise Resource Planning (ERP) systems integrate various business processes into a unified platform, streamlining operations, improving resource management, and enhancing decision-making capabilities. These systems cover functions such as inventory management, sales, procurement, and financial accounting, making them powerful tools for operational efficiency [14], [15]. In small and medium-sized enterprises (SMEs), including mobile coffee businesses, ERP adoption enhances coordination across functional areas, reducing redundancy and inefficiencies [9], [16]. Studies show that ERP integration improves operational efficiency, as demonstrated by [7], [9], who found ERP reduces lead times and enhances inventory management. [6], [8] also highlights ERP's ability to provide real-time information for faster decision-making. However, research on ERP's impact in SMEs, particularly in niche sectors like mobile coffee businesses, remains limited. This study aims to fill that gap by examining ERP system integration's effect on operational efficiency in Indonesia's mobile coffee businesses.

2.2. User Training

While ERP systems offer significant benefits, their success largely depends on employees' ability to use the system effectively. User training is a critical factor in ensuring employees can navigate the ERP system and leverage its capabilities to improve business operations [17], [18]. Training programs should be comprehensive, covering both technical aspects of the ERP system and the business processes it supports, enabling employees to fully utilize the system's features and make informed decisions based on the provided data. Research by [18] underscores the importance of user training for successful implementation, showing that businesses investing in extensive training programs experience fewer adoption issues and higher system utilization. Similarly, [19] identified

user training as a key factor in ERP project success, noting that insufficient training can lead to user resistance and poor system performance. In SMEs, user training is often overlooked due to limited resources and time constraints, but inadequate training can result in ERP system underutilization, reducing its potential to improve operational efficiency [20], [21], [22]. This study explores how effective user training enhances the impact of ERP system integration on operational efficiency in Indonesia's growing mobile coffee businesses.

2.3. Management Support

Management support is crucial for the successful implementation of ERP systems, as top management's commitment to providing resources, setting clear objectives, and fostering a supportive environment is vital for ERP adoption [23]. Without strong leadership, employees may resist the system, and the ERP implementation may not achieve the expected results. Management support also promotes collaboration across departments and addresses challenges during ERP implementation [23]. Studies highlight management support as a key success factor, with [24] showing that active management involvement reduces disruptions enhances operational efficiency. Additionally, [25], [26] emphasize the need for management to support both technical aspects and foster a culture of innovation. Despite its importance, there is limited research on management small and medium-sized support in enterprises, especially mobile coffee businesses. These SMEs often face difficulties securing managerial commitment due to resource constraints. This study investigates management support affects operational efficiency of mobile coffee Indonesia adopting businesses in ERP systems.

2.4. Operational Efficiency

Operational efficiency refers to a business's ability to minimize waste, optimize resource use, and streamline processes to deliver products or services in the most cost-effective way [4], [27], [28]. In mobile coffee businesses, it can be assessed through

inventory management, order fulfillment, service speed, and cost control, all crucial in competitive urban environments with high customer expectations. The literature underscores technology's role in enhancing operational efficiency, with [29] noting that systems like ERP can automate tasks, reduce errors, and improve information flow. For mobile coffee businesses, which face dynamic environments and fluctuating demand, ERP systems can enhance order accuracy, manage inventory more effectively, and lower operational costs. While technology's positive impact on operational efficiency is widely recognized, research on how ERP systems specifically benefit mobile coffee businesses is limited. This study seeks to fill this gap by exploring the relationship between ERP system integration, user training, management support, and operational efficiency in mobile coffee businesses across major Indonesian cities.

2.5. Research Gaps and Hypothesis

Although the benefits of ERP system integration, user training, and management support have been widely studied across industries, research various combined impact on operational efficiency in SMEs, particularly mobile coffee businesses, is lacking. Most studies focus on large organizations or traditional industries, overlooking the unique challenges and opportunities faced by mobile businesses. Additionally, the role of management support in SMEs, where resource constraints may limit available support, is not well understood. This study aims to address these gaps by examining how ERP system integration, user training, and management support influence operational efficiency in Indonesia's mobile coffee businesses. By focusing on SMEs in a niche industry, this research contributes to a understanding implementation and operational performance in resource-constrained environments. Based on the literature review, the following hypotheses are proposed:

H1: ERP system integration has a positive and significant effect on operational efficiency in mobile coffee businesses.

H2: User training has a positive and significant effect on operational efficiency in mobile coffee businesses.

H3: Management support has a positive and significant effect on operational efficiency in mobile coffee businesses.

3. METHODS

3.1. Research Design

This study employs a quantitative research design to test the relationships between variables and draw conclusions based on numerical data, focusing on the effects of ERP system integration, user training, and management support on operational efficiency in mobile coffee businesses. A cross-sectional survey was conducted to gather data from business owners and managers at a single point in time, allowing for the evaluation of these variables and their interrelationships. The research design is structured around the independent variables—ERP system integration, user training, and management support—and the dependent variable, operational efficiency.

3.2. Sampling Method

The population for this study consists of mobile coffee businesses operating in major cities across Indonesia, with the sample drawn using a purposive sampling method targeting business owners and managers experienced with ERP systems and capable of providing informed responses on operational efficiency. The inclusion criteria required that businesses have integrated ERP systems into their operations for at least six months, ensuring respondents possess sufficient experience to provide reliable data. A total of 65 mobile coffee businesses from urban centers such as Jakarta, Bandung, Surabaya, and Bali were selected for the study. The relatively small sample size aligns with the exploratory nature of the research, which seeks to provide preliminary insights into the effects of ERP system integration, user training, and management support on operational efficiency in this niche sector.

3.3. Data Collection Procedures

Data were collected using structured questionnaires administered to the owners and managers of the selected mobile coffee businesses, with sections designed to measure respondents' perceptions of ERP system integration, the quality of user training, the level of management support, and overall operational efficiency. A Likert scale format was employed to gauge the extent of agreement with statements related to these variables. The questionnaire was distributed both online and in person to ensure accessibility across different cities. Before full distribution, a pilot test involving five business owners was conducted to assess clarity and relevance, leading to minor revisions for improved wording structure. The final data collection process spanned approximately four weeks, with all responses anonymized to ensure participant confidentiality.

3.4. Data Analysis

The collected data were analyzed using SPSS version 26, a statistical software commonly used for quantitative research. The analysis began with descriptive statistics, including means, standard deviations, and frequencies, to summarize the demographic characteristics of the respondents and the main study variables, offering insights into the distribution of responses. Reliability testing followed, where Cronbach's alpha was used to assess the internal consistency of the measurement scales, with a value of 0.7 or higher considered acceptable. Pearson's correlation coefficient was employed to examine the relationships between the variables-ERP independent integration, user training, and management support—and the dependent variable, operational efficiency. Multiple regression analysis was then conducted to evaluate the strength and significance of these relationships, allowing for the examination of direct effects while controlling confounding variables. Finally, hypothesis testing was performed, with a p-value of less than 0.05 used as the threshold for statistical significance, determining whether

independent variables had a statistically significant impact on operational efficiency.

4. RESULTS AND DISCUSSION

4.1. Descriptive Statistics

The descriptive statistics provide an overview of the key variables and the demographic characteristics respondents. A total of 65 mobile coffee businesses participated in the survey, with respondents mainly comprising business owners and managers. The respondents were located across major Indonesian cities, including Jakarta, Bandung, Surabaya, and Bali. The mean values for the key variables, including ERP system integration, training, management support, and operational efficiency, were calculated using a Likert scale of 1 to 5. Table 1 provides a summary of the descriptive statistics for each variable.

Table 1. Descriptive Statistics

| Table 1. Descriptive statistics | | | | |
|---------------------------------|------|-----------------------|--|--|
| Variable | Mean | Standard Deviation | | |
| ERP System Integration | 4.12 | 0.65 | | |
| User Training | 3.85 | 0.78 | | |
| Management Support | 4.05 | 0.70 | | |
| Operational Efficiency | 4.20 | 0.62 | | |

The mean score for ERP system integration is 4.12, indicating that most respondents agreed that their ERP systems were well integrated across business functions. User training received a slightly lower mean score of 3.85, suggesting that while training was generally considered adequate, there may be room for improvement. Management support also scored high, with a mean of 4.05, reflecting the

important role of top management in supporting ERP implementation. Finally, operational efficiency had the highest mean score (4.20), indicating that the majority of businesses perceived improvements in their operations following ERP system integration.

4.2. Reliability Analysis

To ensure the reliability of the measurement scales, Cronbach's alpha was calculated for each variable. A Cronbach's alpha value above 0.70 was considered acceptable for internal consistency. The results of the reliability analysis are presented in Table 2.

Table 2. Reliability

| Variable | Cronbach's Alpha |
|---------------|------------------|
| ERP System | 0.82 |
| Integration | 0.62 |
| User Training | 0.78 |
| Management | 0.80 |
| Support | 0.80 |
| Operational | 0.84 |
| Efficiency | 0.04 |

All variables have Cronbach's alpha values above 0.70, indicating that the scales used to measure ERP system integration, user training, management support, and operational efficiency are reliable. This ensures that the items within each scale are consistent and provide a reliable measure of the underlying constructs.

4.3. Correlation Analysis

Pearson's correlation coefficient was used to assess the strength of the relationships between the independent variables (ERP system integration, user training, and management support) and the dependent variable (operational efficiency). The results of the correlation analysis are presented in Table 3.

Table 3. Correlation

| Variable | ERP System Integration | User Training | Management Support | Operational Efficiency |
|---------------|---------------------------|---------------|-----------------------|---------------------------|
| ERP System | 1 | | | |
| Integration | 1 | | | |
| User Training | 0.543* | 1 | | |

| Management Support | 0.602* | 0.522* | 1 | |
|---------------------------|--------|--------|--------|---|
| Operational Efficiency | 0.685* | 0.648* | 0.701* | 1 |

The correlation analysis reveals that ERP system integration, user training, and management support are all positively and significantly correlated with operational efficiency. ERP system integration shows the correlation strongest with operational efficiency (r 0.685),followed management support (r = 0.701), and user training (r = 0.648). These results suggest that improvements in ERP system integration,

training, and management support are likely to lead to enhanced operational efficiency in mobile coffee businesses.

4.4. Multiple Regression Analysis

Multiple regression analysis was conducted to examine the combined effect of ERP system integration, user training, and management support on operational efficiency. The results of the regression analysis are presented in Table 4.

Table 4. Multiple Regression

| Variable | В | Std. Error | Beta | t | p- value |
|------------------------|-------|------------|-------|-------|-------------|
| ERP System Integration | 0.325 | 0.123 | 0.304 | 2.672 | 0.009* |
| User Training | 0.282 | 0.116 | 0.256 | 2.545 | 0.014* |
| Management Support | 0.367 | 0.104 | 0.358 | 3.207 | 0.002* |
| Constant | 1.452 | 0.621 | | 2.348 | 0.023 |

The regression model explains a significant proportion of the variance in operational efficiency (R2 = 0.58), indicating that 58% of the variation in operational efficiency can be explained by the three independent variables. All three variables-ERP system integration ($\beta = 0.304$, p = 0.009), user training ($\beta = 0.256$, p = 0.014), and management support (β = 0.358, p = 0.002) – have a positive and statistically significant effect on operational efficiency. These findings support the study's hypotheses, confirming that ERP system integration, user training, and management support are important determinants of operational efficiency in mobile coffee businesses.

4.5. Discussion

The results of this study confirm the positive impact of ERP system integration, user training, and management support on operational efficiency in mobile coffee businesses in Indonesia. The findings align with existing literature, which highlights the role of ERP systems in improving resource management, enhancing decision-making,

and streamlining business processes [14], [15], [16].

ERP system integration was found to have a strong effect on operational efficiency, indicating that mobile coffee businesses that successfully implement ERP systems can optimize their operations by improving inventory management, reducing costs, and increasing service speed. This finding is consistent with previous research that emphasizes the role of ERP systems in enhancing business performance [6], [7], [8].

User training also plays a critical role in improving operational efficiency, as businesses that invest in comprehensive training programs tend to experience fewer operational issues and achieve higher system utilization [17], [18], [19]. The positive relationship between user training and operational efficiency suggests that mobile coffee businesses should prioritize employee development to ensure that staff are well-equipped to use ERP systems effectively.

Management support emerged as the strongest predictor of operational efficiency, underscoring the importance of leadership in facilitating ERP system implementation [23], [24]. The results suggest that businesses with strong managerial commitment are more likely to overcome challenges during ERP adoption and achieve operational improvements. This finding highlights the need for top management to provide not only financial resources but also continuous guidance and encouragement to ensure the success of ERP systems.

The results of this study provide valuable insights for mobile coffee businesses in Indonesia, emphasizing the importance of integrating ERP systems, providing adequate user training, and securing management support to improve operational efficiency. These findings suggest that businesses can enhance their competitiveness by leveraging technology and fostering a culture of continuous improvement.

4.6. Implications for Practice

Based on the findings, the following practical recommendations are proposed for mobile coffee businesses:

- Mobile coffee businesses should invest in ERP systems that integrate key business functions, such as inventory management, sales, and customer relations, to improve operational efficiency.
- Businesses should allocate resources for user training to ensure that employees can fully utilize the features of the ERP system and apply it effectively in day-to-day operations.
- 3) Top management should be actively involved in the ERP implementation

process and provide ongoing support to ensure that the system is used to its full potential.

5. CONCLUSION

This study has demonstrated the significant impact of ERP system integration, user training, and management support on operational efficiency in mobile coffee businesses in major cities of Indonesia. ERP system integration plays a key role in streamlining business processes, improving inventory management, and reducing costs, ultimately leading to enhanced operational efficiency. User training is crucial for ensuring that employees are proficient in using the ERP system, contributing to better system utilization and fewer operational issues. Management support emerged as the most critical factor, emphasizing the need for active involvement from top management to guide and sustain ERP implementation efforts. The findings offer valuable insights for mobile coffee business owners and managers, highlighting the importance of integrating advanced technology, fostering a well-trained workforce, and securing managerial commitment to improve business operations. By adopting these practices, businesses can enhance their competitive edge in a dynamic market environment. Future research could expand on these findings by exploring the long-term effects of ERP system integration and by including larger sample sizes or other business sectors to further validate the results.

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