

**Financial Management Analysis for the Development of SMEs in the Era of the Industrial Revolution 4.0 (Case Study on SMEs in Junrejo City, Batu)**

Septiana Epliani Marni <sup>1\*</sup>, Poppy Indrihastuti <sup>2</sup>, Nur Hidayat <sup>3</sup>, and Nur Ida Iriani <sup>4</sup>

Correspondence Author: [septianamarni997@gmail.com](mailto:septianamarni997@gmail.com)

<sup>1,2,3,4</sup> Management, Faculty of Economics, University of Tribhuwana Tungadewi, Malang, Indonesia

INDEXING	ABSTRACT
<p><b>Keywords:</b> Keyword 1; Financial Keyword 2; Management Keyword 3; Development Keyword 4; SMEs Keyword 5; Industrial Revolution</p>	<p>Technological developments in the Industry 4.0 era present digital business models, artificial intelligence, and big data that drive changes in SME financial management. This research aims to analyze the financial management of SMEs in the era of the Industrial Revolution 4.0. Using a qualitative approach with a descriptive design, the study was conducted in Junrejo District, Batu City, from December 2024 to January 2025. Primary data is obtained through observation and interviews with SME owners, while secondary data comes from business documents and academic references. The sample was determined by purposive sampling, including SMEs operating for at least five years and applying technology in production, promotion, and finance. Data analysis was carried out thematically through reduction, presentation, and conclusion. The study results show that using technology in financial recording and business operations increases the efficiency and competitiveness of SMEs. A study on three SMEs, namely Tohu Srijaya and Orchid Nursery, shows the use of accounting, IoT, and e-commerce software in managing cash flow, investment, and access to financing. Good financial literacy allows for more optimal financial management. Therefore, increased financial understanding, technology adoption, and government support in access to funding and training are needed for SMEs to develop sustainably.</p>

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**INTRODUCTION**

Technological developments have entered the 4.0 era, which emphasizes digital business models, artificial intelligence, big data, or the so-called disruptive innovation phenomenon, so it is undeniable that financial recording can also change (Nair *et al*, 2024). With the rapid development of technology, it is hoped that SMEs in Indonesia who are used to manual recording will switch to digital applications so that they do not fall behind with the times. There is a need to help SMEs in Indonesia to make it easier for them to record transactions so that their finances can be managed better (Ramadhani & Trisnaningsih, 2022).

SMEs are also a central pillar of the Indonesian economy. On the other hand, SMEs still face many challenges in managing their business, including financial management (Purwantoro, 2025). Many SMEs still go out of business due to a lack of ability to manage finances (Gendalasari & Riyadi, 2022). This cannot be separated from the lack of awareness among SME stakeholders on the importance of business financial management. Financial management is one of the important aspects of the progress and development of the company (Farwitawati, 2018).

In running a business, financial management is important for all SME stakeholders. Finance is essential in maintaining a business's survival (Ruscitasari *et al.*, 2022). Micro, Small, and Medium Enterprises (SMEs) that do not carry out financial planning or management will certainly fail. Because the business does not manage capital, it cannot be sure of the amount of income and expenses that continue to be used in the industry. (Bahiu *et al.*, 2021).

Junrejo is one of the areas located in the Batu City area. Business owners in the Junrejo area have increased their economic level, and few live there. This is due to small and medium business actors' lack of clear financial management. Based on 2020 data, Junrejo District, Batu City, has the highest number of SMEs in other business fields. To support the SME economy in Junrejo, we need to market local products so that the wider community better knows them. So that Junrejo can become a sub-district that motivates other regions to develop SMEs, improve the economy, and help the people in Batu City.

This research was conducted in Junrejo District due to problems regarding the ability of business actors in financial management, especially in the 4.0 era. In addition, Junrejo District is also a place that has many SMEs so that it makes it easier for researchers to conduct research. In addition, the reach to Junrejo is also easy and the researcher also knows several business actors there, thus allowing the researcher to carry out his duties well and smoothly.

## **LITERATURE REVIEW**

In general, SMEs only record income and expenses. Some do not record rent as business expenses, so their business is making a big profit because their costs are not recorded correctly. As a result, the recording does not reflect the company's actual financial position (Farwitawati, 2018). This problem is caused by the self-assessment ability of SME managers in financial management, which is still very weak (Machado *et al.*, 2020). The orientation of SMEs tends to be limited to making profits, which are then used for consumption activities to meet short-term living needs, as well as described by Handrito *et al.* (2023). The ability to manage finances professionally is an important factor in the progress and success of SMEs. That's why SMEs are required to know about education and financial inclusion (Zayed *et al.*, 2022).

According to Setiawan & Saputra (2020), financial knowledge plays an important role in the financial decision-making process. Good financial decisions can improve people's well-being in the future. In addition, the low level of financial literacy of the community will result in limited investment opportunities so that the potential risks will be greater. Knowledge of basic financial knowledge such as inflation, interest rates, risk diversification and compound interest are important elements for society, especially for micro, small and medium enterprises (Klapper and Lusardi, 2020).

## **RESEARCH METHOD**

This study uses a qualitative approach with a descriptive design to understand social phenomena related to SME financial management in the era of the Industrial Revolution 4.0. The research was conducted in Junrejo District, Batu City, from December 2024 to January 2025. The data used consisted of primary data obtained through direct observation, in-depth interviews with SME owners or managers, and secondary data from business documents and academic references. The research population was 27 SMEs in Junrejo District, with the sample selected using the purposive sampling method based on the criteria of SMEs that have been operating for at least 5 years and use technology in production, promotion, and financial

management. Data was collected through observation, interviews, and document review, which were then analyzed using thematic analysis methods with stages of data reduction, data presentation, and conclusion.

## **RESULT AND DISCUSSION**

### **Financial Management Applied in Developing SMEs In The Industry 4.0 Era**

The researcher conducted direct interviews with several SMEs. Based on the results of interviews with several SMEs

1. Based on the results of the interview with Mr. Dedek, the owner of UKM Orchid Nursery:

"In our SMEs, we utilize technology to manage transaction recording. I always do careful financial planning for both the short and the long term. Every year, I also create a budget covering all aspects, such as orchid nursery costs. I also ensure that the money that comes in and out is recorded clearly and on time, not forgetting that I always hold financial performance evaluations. I ensure transparency in financial management, both in internal reports for the management team and external reports for those in need."

In the era of Industry 4.0, UKM Orchid Nursery has implemented various financial management strategies to increase business efficiency and competitiveness. One of the main steps taken is using cloud-based accounting software that allows real-time recording of financial transactions. With this technology, they can monitor cash flow, operational costs, and profits more efficiently, making faster and more precise financial decisions. In addition, cash flow monitoring is also carried out regularly to ensure that finances remain stable and funds are available for urgent needs.

Reducing business risks, Orchid Nursery diversifies its revenue by selling orchid plants and related products such as pots, fertilizers, and plant care services. This approach allows them to survive despite fluctuations in demand in the market. In addition, they also routinely conduct cost and profitability analyses to ensure spending efficiency and identify products with the most significant profit margins.

Improving operational efficiency and implementing automation in several business processes, such as raw material purchasing and inventory management, is also a priority. With this automation, Orchid Nursery can reduce operational time and costs by focusing more on product development and marketing strategies. This step helps to increase the business's effectiveness and optimize the available resources.

In marketing, Orchid Nursery has shifted to a digital strategy by leveraging e-commerce and social media to reach a broader market. They have websites and social media accounts that promote products and accept orders online. This digital transformation helps them expand their market reach, increase sales, and strengthen their business position in the ornamental plant industry.

In addition to focusing on daily operational needs, Orchid Nursery has long-term financial planning for business development. They allocate funds for investment in product innovation, nursery land expansion, and research in the field of plants. With this strategy, they can face future challenges better prepared and continue to evolve in an increasingly competitive industry.

2. Based on the results of the interview with Mr. Sukirno as the owner of SME Tohu Srijaya (business in the furniture sector):

"At Tohu Srizaya, we use Microsoft Excel to monitor cash flow and transactions carried out in our business. We also carefully maintain the cash flow balance because our products are often affected by the times, so to overcome that, we use budget planning in the production process for the sale."

Based on the interview above, it can be explained that Tohu Srijaya's SMEs use accounting software to monitor cash flow and transactions in real-time. This allows them to ensure that liquidity is maintained and financial reports are accurate without waiting for a long time. Tohu Srijaya also uses a digital-based inventory system integrated with an accounting system to ensure that raw material expenditure and stock management are carried out efficiently. Tohu Srijaya also carefully maintains a cash flow balance, especially since the furniture business is often affected by seasons or market trends, by using budget planning apps to predict future cash flows, adjust raw material purchases, and determine production capacity based on sales predictions. With this system, they can avoid overspending at times of low demand.

Due to fluctuations in demand in certain seasons, they must ensure flexible budget planning. For example, when the demand for furniture products increases in specific periods (e.g., the holiday season or large projects), they adjust the budget to maximize production and distribution. This is done with the help of software that estimates working capital requirements more accurately. In addition to financial planning, financial data security in SMEs is strictly maintained by using advanced security systems and data encryption for every transaction and sensitive information, both in transactions with customers and suppliers. They also expand the market by promoting through Instagram social media, thus allowing their products to be sold online in the broader market.

3. Based on the results of an interview with Mrs. Puji, the owner of the UKM Furnio.com

"In our UKM, we manage finances using two methods: I find the manual method easier, but my child uses Excel. My son has also taken financial management training. I think it is also better to use Excel because it is easier and financial management is more accurate."

Financial management in the development of SMEs in the era of the Industrial Revolution 4.0 must adapt to technological advances to increase efficiency and competitiveness. Digitizing the financial system through accounting applications and cloud-based software enables real-time transaction recording and economic analysis, making decision-making faster and more accurate.

Cash flow monitoring is also easier with digital payment systems, which help SMEs like Furnio.com track income and expenses effectively. In addition, the use of analytical data is key to understanding market trends, customer preferences, and more accurate budget planning. SMEs also have access to more flexible financing options, such as crowdfunding, technology-based loans, and venture capital investments, further facilitating business expansion and innovation.

Good financial management should be based on clear and measurable planning. In the context of Furnio.com SME, it is essential to set a realistic budget for production, marketing, and product development costs. Using technology in budget planning and monitoring is very helpful in minimizing waste.

### **The benefits of financial knowledge for the development of SMEs in the era of industry 4.0**

1. Based on the results of the interview with Mr. Dedek, the owner of UKM Orchid Nursery:

"In my opinion, financial knowledge is essential and very much needed in a business; without financial knowledge, it is possible for my SMEs to develop. Financial knowledge provides several benefits for my SMEs, namely the existence of good work

financial management, being able to plan in purchasing materials and resources, and being able to manage income and expenses so that it can increase competitiveness in the market."

Based on the results of the interviews, financial knowledge is the primary foundation in the development and success of SMEs, including Orchid Nursery. One of the benefits is that it helps in working capital management, especially since the crop business has a specific life cycle before it can be marketed. With a good financial understanding, plant care costs, the purchase of seeds, fertilizers, and other equipment can be managed more efficiently so that operations run smoothly. In addition, planning for the purchase of materials and resources becomes more controlled so that nursery owners can avoid waste and adjust stocks to the planting season.

Additionally, financial knowledge plays a role in managing income and expenses, especially since the nursery business often faces sales fluctuations. With good management, SMEs can prepare reserve funds to deal with periods of low sales and manage debts and receivables not to disrupt liquidity. Furthermore, financial understanding also helps in decision-making related to technology investments, such as automated irrigation systems or more efficient methods of propagating seeds, which can reduce operational costs and increase competitiveness in the market.

2. Based on the results of the interview with Mr. Sukirno as the owner of SME Tohu Srijaya (business in the furniture sector):

"I think financial knowledge is essential for the development of SMEs in the Industry 4.0 era, including in Tohu Srijaya (furniture business). Of course, by having financial knowledge, one can manage cash flow well. In addition, the planning and cost management process can run stably so that SMEs can develop and compete in the modern era like today."

Based on the interview, financial knowledge is vital in developing Mr. Sukirno's business. Good cash flow management ensures smooth production and distribution, while careful investment planning helps purchase machinery or improve raw material quality. In addition, understanding production costs allows for efficiency in material selection and work processes. With neat financial records, SMEs also have easier access to financing for business expansion so that they can increase production capacity and competitiveness in the market.

3. Based on the results of an interview with Mrs. Puji, the owner of the UKM Furnio.com

"Financial knowledge is essential and mandatory so that financial management can run well because good financial management is the key to success in running and developing a business."

Financial knowledge plays an essential role in the development of SMEs, from better cash flow management to effective budget planning so that funds are allocated efficiently. With financial understanding, they can avoid excessive debt, assess business profitability, and make more informed business decisions, such as determining selling prices and choosing profitable products. In addition, this knowledge also helps in business investment, both for increasing production capacity and market expansion, so that the business can develop sustainably.

### **The role of industry 4.0 in the development of SMEs**

1. Based on the results of the interview with Mr. Dedek, the owner of UKM Orchid Nursery:

"In planting orchids, technology assists us with an automatic pump that helps us

control soil moisture and air humidity. Orchid Nursery leverages technology to improve efficiency and expand market reach. With IoT, we can monitor plant conditions in real time through sensors that measure soil moisture, temperature, and air, ensuring optimal orchid growth. In addition, the ERP system helps us manage our inventory, bookings, and finances in a more structured way. In marketing, we rely on e-commerce and social media to reach domestic and international customers and use CRM to improve customer relationships. Through data analysis, we can also understand demand trends and manage stocks more efficiently to maintain business profitability."

Tohu Srijaya SMEs utilize Industry 4.0 technology to increase efficiency and competitiveness in the furniture business. Scroll saws and CNC machines can speed up production, producing products more accurately and consistently. Digitalization is also applied in financial and inventory management through cloud-based systems, allowing real-time stock monitoring and more efficient cash flow management. In addition, they utilize e-commerce and digital marketing platforms to expand the market to the international level. Big data analysis is also used to understand market trends and design products that better suit customer preferences so that these SMEs remain competitive and innovative in the furniture industry.

2. Based on the results of an interview with Mrs. Puji, the owner of the UKM Furnio.com

"In the manufacturing process, we are also assisted by wood-cutting machines, and in the sales process, we also use social media as a promotional place such as Instagram, Facebook, and TikTok, and for financial management, we use computers. So we are taking advantage of this era of digitalization in developing our SMEs."

Technological developments are essential in optimizing the operations and growth of SMEs such as Furnio.com. Production automation with IoT machines and devices increases efficiency and enables the creation of more complex furniture designs quickly. Through e-commerce and digital platforms, Furnio.com can reach a broader market with an easier and faster online shopping experience. Using data and analytics helps tailor products and marketing strategies based on customer trends and preferences. In addition, digital marketing through social media, email marketing, and SEO allows for more effective and efficient promotion. Technology also supports product personalization, where customers can customize the size, color, and material as desired, thereby increasing satisfaction and competitiveness in the market.

## **CONCLUSION**

The results of research on three SMEs show that financial management and the use of technology in the Industry 4.0 era play an essential role in business development. Tohu Srijaya and Orchid Nursery use accounting, IoT, and e-commerce software for production efficiency and financial management. Financial knowledge helps manage cash flow, investment, and access to external financing, while digital technology increases competitiveness and market reach. Increasing financial literacy, technology adoption, and government support in accessing funding and training are needed to develop SMEs rapidly.

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