



The Effect of Operational Costs on Sales at Mujur Jaya Photocopy Business in Pandan, Central Tapanuli Regency

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ABSTRACT

This study aims to analyze the effect of operational costs on sales at the Mujur Jaya Photocopy Business in Pandan. This research employed a quantitative approach using simple linear regression analysis. The data used were secondary data obtained from the business financial reports during the 2020–2024 period, which included operational cost components such as paper costs, ink or toner expenses, electricity costs, machine maintenance, and employee salaries, as well as sales data. The results of the study indicate that operational costs have a positive and significant effect on sales. The coefficient of determination (R^2) value of 0.845 indicates that 84.5% of the variation in sales can be explained by operational costs, while the remaining 15.5% is influenced by other factors outside the research model. The t-test results show a significance value of 0.000 (< 0.05), indicating that the hypothesis stating that operational costs significantly affect sales is accepted. In addition, the classical assumption tests confirm that the data are normally distributed and that the regression model is appropriate for analysis. The study concludes that effective and efficient management of operational costs plays an important role in increasing sales, maintaining business sustainability, and strengthening the competitiveness of the photocopy business.

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INTRODUCTION

Photocopy businesses are one of the micro-enterprises commonly found in educational environments, office areas, and residential communities that have a high demand for document duplication services. The services offered by these businesses are not limited to photocopying documents but also include document printing, binding, laminating, and the sale of office stationery. The high demand for such services makes photocopy businesses have relatively stable revenue potential despite being categorized as micro, small, and medium enterprises (MSMEs). MSMEs themselves play an important role in promoting regional economic growth and creating employment opportunities for the community (Tambunan, 2019).

Economic development and the increasing number of business actors have intensified competition in the service sector, including photocopy businesses. Business owners are required to improve service quality, set competitive prices, and maintain operational efficiency in order to retain customers and increase sales. In such a competitive environment, the management of operational costs becomes an important factor that can influence business success. Operational costs refer to all expenses incurred by a company to support daily operational activities in generating revenue (Hansen & Mowen, 2018).

In photocopy businesses, operational costs generally include the cost of purchasing paper, ink or toner, electricity expenses, machine maintenance costs, and employee salaries. These expenditures represent essential components that cannot be avoided in running business activities. Therefore, effective and efficient management of operational costs is necessary to ensure that the business can achieve optimal sales performance. If operational costs are not properly managed, they may reduce business profits and potentially lead to financial losses (Mulyadi, 2016).

However, in reality, many micro-enterprises still do not have adequate financial recording and analysis systems. Most business owners operate their businesses based on experience or habit without conducting evaluations of the relationship between the costs incurred and the sales revenue generated. This condition often results in an imbalance between operational costs and business income, which may hinder improvements in business performance.

Mujur Jaya Photocopy Business, located in Pandan, Central Tapanuli Regency, is one of the service businesses engaged in photocopy and document printing services. This business provides various services such as document photocopying, file printing, binding, laminating, and the sale of office stationery. In conducting

its operations, the business incurs various operational costs including expenses for paper, ink or toner, electricity, machine maintenance, and employee salaries. Based on the financial records of the business during the 2020–2024 period, operational costs have increased each year in line with the growth of business activities and operational needs.

On the other hand, the increase in operational costs has also been accompanied by an increase in sales each year. This indicates that operational costs play an important role in supporting service production activities that ultimately affect the level of business sales. However, operational expenditures that are not managed efficiently may negatively impact business profitability. Therefore, a deeper analysis is required to determine the extent to which operational costs influence the level of sales in this photocopy business.

Based on the above explanation, this study aims to analyze the effect of operational costs on sales at the Mujur Jaya Photocopy Business in Pandan, Central Tapanuli Regency. The results of this study are expected to provide an overview of the relationship between operational costs and sales and serve as a reference for business owners in managing operational costs more effectively in order to improve business performance.

METHODS

This study employed a quantitative approach to analyze the relationship and influence of operational costs on sales in a photocopy business. The quantitative approach was chosen because the data used are numerical and analyzed using statistical techniques to test the research hypotheses. Quantitative research is a method based on the philosophy of positivism used to examine a specific population or sample, with data collected through research instruments and analyzed statistically to test predetermined hypotheses (Sugiyono, 2018).

This research was conducted at Mujur Jaya Photocopy Business located in Pandan, Central Tapanuli Regency, North Sumatra. The business is situated near the Pandan Sports Center (GOR Pandan) and close to the Central Tapanuli Regent's Office. The research was carried out from March to August 2025, which included data collection, interviews with the business owner, data processing, and the preparation of the research report.

The population of this study consisted of all financial report data of the Mujur Jaya Photocopy Business related to operational costs and sales during the 2020–2024 period. A population refers to the entire set of elements that possess certain characteristics and become the object of research (Handayani, 2020). Based on this population, the research sample was selected using a purposive sampling technique, which involves selecting samples based on specific criteria aligned with the research objectives. The sample criteria included operational cost data, photocopy business sales data, and financial reports from the past five years. Therefore, the sample used in this study consisted of operational cost and sales report data from the Mujur Jaya Photocopy Business during the 2020–2024 period.

The type of data used in this research was quantitative data in the form of numerical values obtained from the financial records of the photocopy business, particularly those related to operational costs and sales. The data source used in this study was secondary data obtained from simple financial report documents, operational cost records, sales data, and other relevant documents related to the research (Siyoto & Sodik, 2016).

The data collection techniques used in this research included observation, interviews, and documentation. Observation was conducted by directly observing the operational activities of the photocopy business. Interviews were carried out with the business owner to obtain information related to operational activities and financial record-keeping. Documentation was conducted by collecting data in the form of operational cost reports and sales reports during the research period.

The variables in this study consisted of independent and dependent variables. The independent variable in this study was operational costs (X), which include all expenses incurred to support business operational activities such as electricity costs, paper purchases, ink or toner, employee salaries, and machine maintenance costs. Meanwhile, the dependent variable was sales (Y), defined as the total revenue generated from photocopy services and related services, measured through total annual sales turnover.

Data analysis in this study was conducted using statistical analysis techniques. The analysis stages included descriptive analysis to describe the condition of operational costs and business sales, a normality test to determine whether the data were normally distributed using the Kolmogorov–Smirnov method, and a heteroscedasticity test using the Glejser test to identify variance inequality in the regression model (Situmorang

& Lutfi, 2016). In addition, a multicollinearity test was performed by examining the Variance Inflation Factor (VIF) values to determine whether there was a strong relationship among independent variables (Gujarati, 2015).

Furthermore, the relationship between operational costs and sales was analyzed using simple linear regression analysis. The coefficient of determination (R^2) was used to measure the extent to which the independent variable influences the dependent variable. Hypothesis testing was conducted using the t-test to determine whether operational costs significantly affect sales at the Mujur Jaya Photocopy Business in Pandan, Central Tapanuli Regency, with a significance level of 5% (Sugiyono, 2017).

RESULTS AND DISCUSSION

Results

Overview of the Research Object

Mujur Jaya Photocopy Business is a service enterprise engaged in printing services and the sale of office stationery located on Dr. Ferdinand L. Tobing Street, Pandan, Central Tapanuli Regency. The business provides various services, including document photocopying, printing, scanning, binding, laminating, and the sale of office stationery. The business was established in 2008 by Mr. Hapnas Simanjuntak with an initial capital of IDR 78,000,000, which was used to purchase two photocopy machines, two printers, two computers, and various office stationery supplies. At the beginning of its establishment, the business was operated independently without employees.

Along with the increasing public demand for printing and photocopy services, the business has experienced considerable growth. The owner subsequently added more operational equipment and recruited several employees to assist with daily operations. Currently, Mujur Jaya Photocopy Business is equipped with several supporting facilities, including four photocopy machines, four printers, three computers, two photo printing machines, one laminating machine, and other supporting equipment.

Organizationally, the business is directly managed by the owner, who is responsible for overseeing all operational activities. In carrying out daily business operations, the owner is assisted by an operational supervisor and several employees who serve customers and manage the printing processes. Adequate human resources and relatively complete operational facilities play an important role in supporting the smooth operation of the business.

Descriptive Analysis of Operational Costs

Based on the results of the data analysis, it was found that the operational costs of Mujur Jaya Photocopy Business in Pandan increased annually during the period of 2020–2024. The total operational cost in 2020 amounted to IDR 77,300,000 and increased to IDR 93,700,000 in 2024. Overall, the total operational cost during the five-year period reached IDR 421,000,000, with an average operational cost of IDR 84,200,000 per year. The average growth rate of operational costs was recorded at 4.94% per year.

The increase in operational costs was mainly caused by rising raw material costs and supporting operational expenses. The cost of paper increased from IDR 10,000,000 in 2020 to IDR 18,000,000 in 2024. In addition, ink or toner expenses also increased from IDR 8,000,000 to IDR 10,500,000. Electricity costs used to operate photocopy machines and printing equipment increased from IDR 11,700,000 to IDR 16,000,000 during the research period. Meanwhile, employee salary expenses remained relatively stable at IDR 45,600,000 per year. This increase in operational costs indicates a rise in business activity and greater resource utilization in running the business operations.

Descriptive Analysis of Sales

The analysis of sales data indicates that Mujur Jaya Photocopy Business experienced an increase in sales during the research period. In 2020, total sales amounted to IDR 70,000,000 and gradually increased to IDR 100,000,000 in 2024. This increase indicates that the business experienced positive development in terms of revenue.

The highest sales growth occurred in 2020 with an increase of IDR 20,000,000 compared to the previous year. In the following years, sales continued to increase although at a slower growth rate. In 2021, sales increased by IDR 11,750,000, followed by an increase of IDR 4,750,000 in 2022. Furthermore, sales increased by IDR 6,000,000 in 2023 and by IDR 7,500,000 in 2024.

Overall, the increase in sales indicates that Mujur Jaya Photocopy Business has been able to maintain market demand and improve the quality of service provided to customers. The business location, which is situated in an area close to offices and educational institutions, also contributes to the stability of demand for photocopying and printing services.

Classical Assumption Testing

Before conducting the regression analysis, classical assumption tests were carried out to ensure that the regression model met the required statistical assumptions.

The results of the normality test using the Kolmogorov–Smirnov and Shapiro–Wilk methods showed that the significance values for the operational cost and sales variables were greater than 0.05. This indicates that the research data were normally distributed and therefore met the normality assumption.

Furthermore, the multicollinearity test showed a tolerance value of 1.000 and a Variance Inflation Factor (VIF) value of 1.000. These results indicate that there was no multicollinearity in the regression model used. This means that the independent variable in the study does not have a strong correlation with other variables.

The heteroscedasticity test was conducted using the Glejser method. The test results showed that the significance value of the operational cost variable was 0.756, which is greater than 0.05. Therefore, it can be concluded that there was no heteroscedasticity in the regression model, indicating that the model met the homoscedasticity assumption.

Hypothesis Testing

Hypothesis testing was conducted using the t-test to determine the effect of operational costs on sales. The regression analysis results showed that the significance value of the operational cost variable was 0.000, which is smaller than 0.05. This result indicates that operational costs have a significant effect on sales at Mujur Jaya Photocopy Business in Pandan, Central Tapanuli Regency.

These findings indicate that the increase in operational costs used to support business activities, such as the purchase of raw materials, electricity usage, and equipment maintenance, can have a positive impact on increasing sales. In other words, the greater the operational activities carried out to improve service quality and production capacity, the greater the potential increase in sales that can be achieved.

Coefficient of Determination

Based on the regression analysis results, the coefficient of determination (R Square) was found to be 0.845. This value indicates that the operational cost variable is able to explain 84.5% of the variation in sales changes. Meanwhile, the remaining 15.5% is influenced by other factors outside the research model, such as service quality, marketing strategies, business location, and the level of market demand.

The high coefficient of determination indicates that the regression model used has a strong ability to explain the relationship between operational costs and sales.

Discussion

The results of this study show that operational costs have a significant influence on sales at Mujur Jaya Photocopy Business in Pandan. The increase in operational costs during the research period does not merely reflect higher business expenditures but also indicates increased production activities and customer service.

Operational cost expenditures such as the purchase of paper, ink, and electricity usage are essential components in supporting the production process of photocopy and printing services. As the volume of work increases, the demand for raw materials and equipment usage also rises. This condition leads to higher operational costs but at the same time contributes to an increase in business revenue.

The findings of this study indicate that proper management of operational costs can have a positive impact on sales performance. Therefore, business owners need to manage operational costs effectively and efficiently in order to increase productivity without reducing the quality of service provided to customers.

CONCLUSION

Based on the results of the data analysis at Mujur Jaya Photocopy Business in Pandan during the 2020–2024 period, it can be concluded that operational costs showed an increasing trend with an average growth rate of 4.94% per year, particularly in the components of paper and electricity costs, while employee salary

expenses remained relatively stable. During the same period, sales also increased with an average annual growth rate of 15.53%, influenced by the expansion of business activities and rising customer demand. The statistical analysis results indicate a very strong positive relationship between operational costs and sales, with a correlation coefficient of 0.919 and a coefficient of determination (R^2) of 0.845. Furthermore, the t-test results demonstrate a significant effect with a significance value of $0.000 < 0.05$. Therefore, effective and efficient management of operational costs is crucial in supporting sales growth and ensuring business sustainability. Based on these findings, business owners are advised to optimize operational cost management, particularly for cost components that experience significant increases such as paper and electricity, and to allocate expenditures toward improving service quality through regular machine maintenance, the use of high-quality raw materials, and employee skill development. In addition, the business is encouraged to diversify its services, such as offering digital printing or graphic design services, to increase revenue sources. Cost control measures should also be implemented through efficient electricity usage and better raw material inventory management. Future research is recommended to include additional variables such as marketing strategies, service quality, and customer loyalty in order to provide a more comprehensive understanding of the factors influencing sales in photocopy businesses.

REFERENCES

- Anthony, R. N., & Govindarajan, V. (2017). Sistem pengendalian manajemen (Edisi ke-13). Salemba Empat.
- Anggraeni, R. (2021). Pentingnya legalitas usaha bagi usaha mikro kecil dan menengah. *Eksaminasi: Jurnal Hukum*, 1(1), 77–83.
- Assauri, S. (2018). Manajemen pemasaran. Rajawali Pers.
- Gujarati, D. N. (2015). Basic econometrics (5th ed.). McGraw-Hill Education.
- Gujarati, D. N., & Porter, D. C. (2016). Dasar-dasar ekonometrika (Edisi ke-5). Salemba Empat.
- Handayani, R. (2020). Metodologi penelitian sosial. Deepublish.
- Hansen, D. R., & Mowen, M. M. (2018). Managerial accounting (16th ed.). Cengage Learning.
- Hidayat, T., & Nurjanah, S. (2020). Manajemen biaya operasional dalam meningkatkan laba usaha pada bisnis jasa fotocopy.
- Juliandi, A., Irfan, I., & Manurung, S. (2015). Metodologi penelitian bisnis: Konsep dan aplikasi. UMSU Press.
- Kotler, P., & Keller, K. L. (2016). Marketing management (15th ed.). Pearson Education.
- Kusnadi. (2019). Manajemen pemasaran: Teori dan aplikasi. Mitra Wacana Media.
- Mulyadi. (2016a). Akuntansi biaya (Edisi ke-5). UPP STIM YKPN.
- Mulyadi. (2016b). Akuntansi manajemen (Edisi ke-6). Salemba Empat.
- Prasetyo. (2018). Pengaruh biaya tenaga kerja dan biaya bahan baku terhadap pendapatan usaha fotocopy.
- Priatna, A., & Rudi, B. (2016). Pengaruh strategi penjualan terhadap peningkatan omzet pada UMKM.
- Rusdiana, D. (2021). Manajemen pemasaran. Yrama Widya.
- Sari, W., & Wijaya. (2019). Analisis pengaruh biaya operasional terhadap volume penjualan pada usaha mikro kecil menengah (UMKM).
- Senastri, K. (2020). Manajemen laba: Pengertian dan fungsi manajemen laba. *Accurate.id*. <https://accurate.id/akuntansi/pengertian-lengkap-manajemen-laba/>
- Situmorang, S. H., & Lutfi, M. (2016). Analisis data untuk riset manajemen dan bisnis (Edisi ke-2). USU Press.
- Siyoto, S., & Sodik, A. (2016). Dasar metodologi penelitian. Literasi Media Publishing.
- STIE Al Washliyah. (2025). Buku panduan penulisan skripsi dan tugas akhir. STIE Al Washliyah.
- Sugiyono. (2017). Statistika untuk penelitian. Alfabeta.
- Sugiyono. (2018). Metode penelitian kuantitatif. Alfabeta.
- Sugiyono. (2019). Metode penelitian kuantitatif, kualitatif, dan R&D. Alfabeta.
- Supriyono, R. A. (2016). Akuntansi biaya. BPFE.
- Supriyono, R. A. (2018). Akuntansi keperilakuan. Gadjah Mada University Press.
- Suroto. (2023). Analisis biaya operasional dalam meningkatkan laba perusahaan pada PT Segar Berjaya Makmur. <https://jurnal.amikwidyaloka.ac.id/>
- Tambunan, T. (2019). Usaha mikro, kecil dan menengah di Indonesia: Isu-isu penting. LP3ES.
- Wardiyah, M. L. (2017). Analisis laporan keuangan. Pustaka Setia.