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\*Corresponding author: Ade Dian Nuridha Rachmat, Sekolah Tinggi Ilmu Ekonomi Yasa Anggana Garut, Indonesia.

E-mail: [ad3d1ano879@gmail.com](mailto:ad3d1ano879@gmail.com)

## DESCRIPTIVE OF QUANTITATIVE DATA | SUPPLEMENTARY

## Optimising Inventory Turnover to Increase Profitability: A Case of Bayongbong Independent Village Unit Cooperative

Ade Dian Nuridha Rachmat<sup>1\*</sup>, Ami Cahya Utami Hadiyanti<sup>2</sup>

<sup>1,2</sup> Sekolah Tinggi Ilmu Ekonomi Yasa Anggana Garut, West Java, Indonesia. Email: [ad3d1ano879@gmail.com](mailto:ad3d1ano879@gmail.com)  
[ami\\_cahya@gmail.com](mailto:ami_cahya@gmail.com)

**Abstract:** This study is motivated by the importance of efficient inventory management in supporting the profitability of a company, especially in the livestock cooperative sector. The purpose of this study was to analyse the effect of inventory turnover on profitability at Koperasi Unit Desa Mandiri Bayongbong. This research uses a quantitative approach with descriptive and associative research designs. The population in this study is all data related to inventory turnover and cooperative profitability covering 2016-2021, with sampling techniques using secondary data taken from the cooperative's financial statements. The analysis technique used is simple regression analysis, correlation test, and coefficient of determination. The results showed that inventory turnover had no significant effect on profitability, with a very weak and negative correlation between the two variables. This suggests that other factors, such as product quality and external factors, have more influence on the rentability of the co-operative. The implication of this study is that it is important for cooperatives to consider other aspects besides inventory management in improving profitability, such as pricing policies and more effective product marketing.

**Keywords:** Inventory Turnover, Profitability.

### 1. INTRODUCTION

Nowadays, more and more companies are growing rapidly in Indonesia, both newly established and long-established. However, the business sector also faces various challenges, one of which is the impact of the Covid-19 pandemic which has slowed down several sectors, causing a number of companies to suffer setbacks. Competition between companies is getting tighter with the main goal of achieving maximum profit. The success of a company depends on various factors, including efficiency in managing inventory, which can affect the company's profitability. Therefore, research on the effect of inventory turnover on profitability in companies is very important to do so that companies can formulate the right strategy in increasing profits (Junaedi, 2024).

The selection of the object of this research, namely Koperasi Unit Desa (KUD) Mandiri Bayongbong, is based on several considerations. This co-operative has been operating for quite a long time and has a number of business units, one of which is the dairy unit that is the focus of this study. This unit was chosen because the turnover of raw material inventory of dairy milk is directly related to the profits earned by the cooperative. In addition, KUD Mandiri Bayongbong is a cooperative that plays an important role in the economy of the local community and experienced significant fluctuations in profits in recent years, thus providing a clear picture of the factors that affect profitability (Rosita, Y., NR, A., & Junaedi, 2024). By choosing this object, this research can make a contribution that is relevant and different from similar research conducted in other companies.

This study focuses on two main variables, namely inventory turnover and profitability. Inventory turnover is a ratio that shows how many times the inventory of goods (in this case dairy raw materials) can be rotated within a certain period of time, while profitability measures the company's ability to generate profits from its business activities. These two variables are interrelated, because efficiency in managing inventory turnover can increase profitability, which in turn affects the company's financial

performance. As explained by Junaedi (2022), efficient inventory management can reduce storage costs and increase the potential profit that can be obtained (Rachmat, 2023).

Previous research conducted by Jainuddin and Munandar (2020) stated that inventory turnover did not have a significant effect on profitability at KPRI Obor Bima. However, this research is limited to a different cooperative sector and a shorter period. In contrast, this study will examine in more depth the inventory turnover in the dairy unit of KUD Mandiri Bayongbong, which faces different challenges and conditions compared to previous studies. This provides room to find novelty in this research, especially in the context of cooperatives engaged in the dairy farming sector (Rosita, 2024).

This study aims to analyse the effect of raw material inventory turnover on profitability at KUD Mandiri Bayongbong. The novelty presented in this study is the focus on dairy units in cooperatives that have not been widely studied in the context of inventory turnover and profitability. The benefit of this research is to provide new insights for co-operative managers in managing inventory more efficiently, as well as providing practical recommendations to increase profits. Thus, this research is expected to make a positive contribution to the development of cooperatives in Indonesia and improve the competitiveness of cooperatives in facing the existing economic challenges.

## 2. LITERATURE REVIEW

### A. Inventory Turnover

Inventory turnover is a ratio used to measure how quickly a company's inventory of goods or raw materials is processed and sold within a certain period. A high inventory turnover indicates that the company is able to manage inventory efficiently, which in turn can reduce storage costs and increase the company's cash flow. In this context, inventory turnover is an important indicator in assessing the effectiveness of inventory management which affects the company's profitability (Khaeriyah, 2023). Proper inventory management not only reduces wasteful costs but also increases the company's profit potential (Sungkowo, Wulandari, 2024).

According to Nurhayati (2020), too much inventory can increase storage costs and the risk of damage to goods, while too little inventory can cause shortages of goods and loss of sales opportunities. Therefore, companies need to manage inventory efficiently to maintain stable operations and maximise profits.

### B. Rentability

Rentability is a measure of a company's ability to generate profits from assets or capital used in business operations. In research by Sungkowo (2024), profitability is influenced by how well a company manages various resources, including inventory, operating costs, and capital. A commonly used measurement of profitability is Return on Assets (ROA), which shows how effectively a company uses its assets to generate profits (Eldiani, 2021).

Junaedi (2022) emphasises that high profitability reflects good company management, especially in terms of cost management and operational efficiency. Good profitability also indicates that the company can generate optimal profits by utilising available capital. Therefore, the company must ensure that all aspects of its operations, including inventory turnover, are managed efficiently in order to increase the level of profitability.

### C. Effect of Inventory Turnover on Profitability

Inventory turnover has a direct relationship with corporate profitability. In this context, efficiency in managing inventory can increase the profit generated by the company. A fast inventory turnover can reduce storage costs and promote more optimal use of assets, which in turn can increase profitability. Conversely, inventory that is trapped too long in the warehouse will increase costs and reduce the company's ability to generate profits (Rachmat, 2023).

Research conducted by Sungkowo (2024) shows that efficient inventory management can increase profit margins and have a positive impact on profitability. In companies with good inventory management, such as cooperatives or small companies, high inventory turnover can reduce operating expenses and increase the company's competitiveness in the market (Sungkowo, 2024).

Previous research by Nurhayati (2020) states that financial performance, including inventory turnover, plays an important role in influencing firm value through the profit generated. However, there are not many studies that specifically examine the relationship between inventory turnover and profitability in the cooperative sector. This study will fill the gap by focusing on the dairy unit at KUD Mandiri Bayongbong. By considering the different characteristics of dairy farming cooperatives, this study is expected to provide new findings regarding the effect of inventory turnover on profitability in this sector (Nuridha, 2020).

### 3. RESEARCH DESIGN AND METHOD

The methodology used in this research is a quantitative approach with descriptive and associative research designs. This approach aims to describe the phenomena that occur, and analyse the relationship between the variables studied, both in terms of development, relationship, and influence between the independent and dependent variables.

According to Sugiyono (2017: 57), descriptive research is a type of research conducted to determine the value of one or more variables, both independent (independent variable) and the object of observation (dependent variable). On the other hand, associative research aims to determine the relationship or influence between two or more variables. In this study, we analyse the relationship and influence between inventory turnover (independent variable) and profitability (dependent variable). There are three types of relationships that can be analysed in this associative research: symmetrical, causal, and interactive (reciprocal) relationships (Yusuf Tojiri, M. M., Putra, H. S., & Nur Faliza, S. E., 2023).

The data used in this study consists of primary and secondary data. Primary data is obtained directly from the research object through internal documentation at the Village Unit Cooperative (KUD) Mandiri Bayongbong, including financial statements, records of inventory purchases and sales, and milk production data to analyze inventory turnover and profitability in the dairy unit. Meanwhile, secondary data is sourced from previously available materials such as scientific articles, journals, company annual reports, and relevant websites that discuss inventory turnover and profitability in cooperatives or other sectors. The use of secondary data aims to support a more comprehensive analysis, provide additional references, and broaden insights into the research topic (Subagyo et al., 2023).

#### A. Data Collection Technique

To obtain accurate and relevant data, this research will use several data collection techniques, including:

1. Direct observation: Observe and record information related to inventory management in the dairy unit of KUD Mandiri Bayongbong.
2. Interview: Conducting interviews with the manager or manager of the co-operative to obtain more information about inventory turnover and factors affecting profitability.
3. Documentation: Collecting data from financial statements, transaction records, and other relevant documents relating to inventory turnover and profitability.

#### B. Data Analysis Technique

Data analysis in this study was carried out using quantitative statistical techniques, specifically regression analysis to determine how much influence inventory turnover has on profitability. Validity and reliability tests will be conducted first to ensure the accuracy and consistency of the data. Furthermore, multiple regression analysis is used to see the relationship and influence between the independent variable (inventory turnover) and the dependent variable (profitability) (Yusuf Tojiri et al., 2023).

With this approach, it is hoped that the results of the study can provide a clear picture of the effect of inventory turnover on profitability at Koperasi Unit Desa Mandiri Bayongbong, as well as

provide practical recommendations for cooperative managers in improving their performance and profitability.

#### 4. RESULTS

##### A. Simple Regression Test

**Table 1. Linear Regression Analysis Results**

Model	Unstandardised Coefficients	Standardised Coefficients	t	Sig.
	B	Std. Error	Beta	
1	(Constant)	81.169	26.381	3.077
	Inventory Turnover	-0.001	0.056	-0.010

Based on the test table above, the regression equation between inventory turnover and profitability is as follows:

Regression Equation:

$$Y = a + bX$$

$$Y = 81.169 + (-0.001)X$$

##### B. Simple Correlation Test

**Table 2. Correlation Test Analysis Results**

	Inventory Turnover	Rentability
Inventory Turnover	Pearson Correlation	1
	Sig. (2-tailed)	.984
	N	6
Rentability	Pearson Correlation	-0.010
	Sig. (2-tailed)	.984
	N	6

Based on the test table above, it can be seen that the correlation obtained between inventory turnover and profitability is -0.10. This indicates a very low negative correlation between inventory turnover and profitability.

##### C. Determination Coefficient Test

**Table 3. Coefficient of Determination Test Analysis Results**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.010	0.394	-0.250	26.98617

Based on the test table above, it is known that the coefficient of determination (R Square) is 0.394. Thus, it can be concluded that the effect of the independent variable (inventory turnover) on the dependent variable (profitability) is 39.4%. Meanwhile, the remaining 60.6% is influenced or explained by other variables not examined in this study.

##### D. Hypothesis Test

**Table 4. Results of Hypothesis Test Analysis**

Model	Unstandardised Coefficients	Standardised Coefficients	t	Sig.
	B	Std. Error	Beta	
1	(Constant)	81.169	26.381	3.077
	Inventory Turnover	-0.001	0.056	-0.010

Based on the results of the hypothesis test analysis above, the test criteria are determined based on the significance value (Sig.), provided that the Sig value <0.05. Based on the table above, the Sig value = 0.984 is obtained, which means  $0.984 > 0.05$ . Thus, the regression equation model based on this research data is not significant, or the regression equation model does not meet the criteria.

In addition, the  $t$  count is  $-0.021$ , which is smaller than the  $t$  table value ( $2.776$ ). This shows that the inventory turnover variable has no significant effect on profitability, and there is a negative correlation. This means that if the inventory turnover increases, the profitability will decrease, and vice versa if the inventory turnover decreases, the profitability will increase.

## E. Discussion

The results of the regression analysis show that inventory turnover has a very small and insignificant effect on profitability in the Village Unit Cooperative (KUD) Mandiri Bayongbong. In the regression model, the calculated  $t$  value is  $-0.021$  with a significance value of  $0.984$ , which is greater than  $0.05$ . This indicates that inventory turnover does not have a significant effect on the profitability of the cooperative. This means that although inventory turnover changes, it does not cause a considerable change in the profitability generated by the cooperative. In previous research, some studies show a more significant relationship between inventory turnover and financial performance or corporate profitability. For example, research by Rachmat (2023) who examined the effect of total asset turnover on return on equity (ROE) found a significant relationship between asset efficiency and company profitability. In the study, efficiency in managing assets has a positive effect on profitability, which indicates that efficient management, including in terms of inventory turnover, can increase profits. However, the results of this study are different, because the effect of inventory turnover on profitability in KUD Mandiri Bayongbong proved to be very weak.

This study also differs from the findings by Khaeriyah (2023), who found a positive relationship between finished goods inventory management and sales volume in other sectors. This difference in results could be due to external factors affecting dairy units, such as fluctuating milk prices or decreased production due to external factors such as the Covid-19 pandemic. In this case, price fluctuations and product quality may not be directly related to inventory turnover, which explains why the relationship between inventory turnover and profitability at KUD Mandiri Bayongbong is not significant.

The correlation test results show that the correlation between inventory turnover and profitability is  $-0.010$ , which indicates a very weak negative correlation between the two variables. This shows that even if inventory turnover changes slightly, there is not a strong enough relationship with profitability. In other words, changes in inventory turnover do not directly affect the level of profit obtained by the cooperative. Research conducted by Sungkowo (2024) on sales volume and working capital shows that efficient management of sales volume can have a positive impact on working capital and ultimately increase profitability. In this context, sales volume is a key factor in determining the results obtained. The difference with this study is that inventory turnover that is not followed by increased sales or stable product demand may explain why the correlation between these two variables is weak.

The coefficient of determination test results show that the contribution of inventory turnover to profitability is only  $39.4\%$ . This means that most ( $60.6\%$ ) of the factors affecting profitability cannot be explained by the inventory turnover variable. This suggests that despite the limited contribution, other factors, such as pricing policy, product quality, or even other external factors, have a greater influence on co-operative profitability. The difference in these results compared to research by Eldiani (2021) which discusses the financial performance of banks shows that the contribution of internal factors to performance is highly dependent on the industry sector studied. In the banking sector, internal factors such as capital structure and asset management tend to have more influence on financial performance compared to other sectors such as dairy farming cooperatives, which face greater dependence on external factors, such as market demand and price changes.

The  $t$  test shows that the inventory turnover variable has no significant effect on profitability, with a significance value of  $0.984$  which is greater than  $0.05$ . This shows that changes in inventory turnover do not have a large enough impact to affect the profits earned by the cooperative. Research by Nuridha (2020) which examined the effect of sales promotion on sales volume found significant results, indicating that effective promotion can increase sales and ultimately increase profitability. The difference with this study may be due to differences in the sectors studied and the approaches used in inventory management and promotion. In this study, factors such as promotion or marketing strategy may not be taken into account, so the contribution of inventory turnover to profitability is very limited.

Overall, the results of this study indicate that inventory turnover does not have a significant effect on profitability at the Bayongbong Independent Village Unit Cooperative. This result is different from several previous studies that show a significant influence between inventory or asset management and profitability. This difference can be explained by external factors affecting the dairy farming sector, such as fluctuations in milk prices and product quality, which are not explained in this study. Therefore, further research involving external variables such as prices and market policies is needed to provide a more comprehensive picture of the factors affecting the profitability of cooperatives in this sector.

## 5. CONCLUSION

Based on the results of the research that has been done, it can be concluded that inventory turnover does not have a significant effect on profitability at the Bayongbong Independent Village Unit Cooperative. Although inventory turnover fluctuates, the changes are not large enough to affect the level of profit obtained by the cooperative. This suggests that other factors, such as product quality, pricing policy, or even external factors such as market demand and economic changes, may have a more dominant role in determining the profitability of the cooperative. This study provides an understanding that inventory turnover management in dairy farming co-operatives does not always have a direct impact on the profitability of the co-operative, especially if there are external factors that affect milk production and prices. Therefore, to improve profitability, co-operatives need to consider various other factors beyond inventory management, such as pricing policies and more effective marketing efforts.

For future research, it is recommended to involve a wider range of external factors, such as pricing policies, promotions, or economic changes that may affect milk production and sales. Researchers could also consider using a more comprehensive analysis model involving more variables to get a clearer picture of the factors affecting profitability in the dairy farming cooperative sector. For the management of Bayongbong Independent Village Unit Cooperative, it is recommended not only to focus on managing inventory turnover, but also to develop a more comprehensive strategy in increasing profitability, such as improving product quality, evaluating milk selling prices, and strengthening distribution channels and product marketing. Paying attention to external aspects that affect price and demand will also be very important for the future sustainability of the cooperative. In addition, for researchers interested in studying other cooperative sectors, it is recommended to compare the results of this study with different cooperative sectors, such as cooperatives engaged in other consumer goods, to provide greater insight into the factors affecting profitability in different types of cooperatives.

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