Kilisuci International Conference on Economic & Business

Vol. 3 Year 2025

Application of Mundel Theory in Measuring Operational Productivity at Waroeng Tenda Gaul Restaurant, UGM Valley Branch

Radjandra putra al yusuf[1*], Lilia Pasca Riani[2]

[1,2]Yogyakarta state University, JL. Colombo No 1 kampus karang malang, Caturtunggal, Depok, Sleman, DIY, 55271

Radjandraputra.2022@student.uny.ac.id[1], lilia.pasca.riani@uny.ac.id[2]

*corresponding author

Article Information

Submission date April 14,2025

Revised date April 18,2025

Accepted date May 15,2025

Abstract

Research aim : *To analyze the factors affecting operational productivity at Waroeng Tenda Gaul Restaurant, Lembah UGM branch, using Mundel's Theory as a framework, and to provide strategic recommendations for optimizing labor utilization, improving service efficiency, and minimizing raw material waste*

Design/Methode/Approach : *This research adopts a descriptive case study approach with a combination of qualitative and quantitative methods to analyze operational productivity at Waroeng Tenda Gaul Restaurant, Lembah UGM branch. The study is designed to explore, describe, and evaluate the factors affecting productivity by using Mundel's Theory, which focuses on the relationship between inputs (resources) and outputs (results) in operational systems.*

Research Finding : *The analysis of operational productivity at Waroeng Tenda Gaul Restaurant, Lembah UGM branch, reveals several key findings based on data collected through observation, interviews, documentation, and time-motion study. These findings are categorized based on Mundel's productivity dimensions: effectiveness, efficiency, and utilization.*

Theoretical contribution/Originality : *This study contributes to the existing literature on operational productivity by applying Mundel's Theory of Productivity in a context that has received limited academic attention: a mid-scale, fast-service restaurant specializing in traditional Indonesian cuisine. While previous studies have broadly discussed operational efficiency in the food and beverage industry, this research offers a more focused and practical application of Mundel's framework in a real-world SME setting.*

Practitionel/Policy implication : *The findings of this study offer several practical implications for both business practitioners and policymakers, particularly in the context of small and medium-sized enterprises (SMEs) in the culinary sector*

Research limitation : *While this study provides valuable insights into the operational productivity of Waroeng Tenda Gaul Restaurant using Mundel's Theory, several limitations should be acknowledged*

Keywords : Operational Productivity, Mundel's Theory, Culinary SME

1. Introduction

Operational productivity is a critical component of business success across all industries, including the education sector. According to operational efficiency is the most important

consideration for those involved in the food and beverage industry in order to reduce increasingly high costs and increase production costs. The restaurant industry is constantly growing in many different regions due to the abundance of restaurants that offer competitive prices and high-quality services. In order to meet this challenge, business owners must prioritize operational productivity so that they can satisfy customer needs without sacrificing service quality or product quality. In this context, the implementation of theories such as the Mundel Theory is relevant for improving operational efficiency and boosting productivity in the culinary industry.(Novita, 2024)

Waroeng Tenda Gaul Restaurant Branch UGM is one of the culinary businesses that focuses on keeping a clean environment. This restaurant has the idea of quick service with a focus on maintaining authentic quality, which attracts many customers from many communities. This restaurant operates in a competitive environment with a strategic location in Lembah UGM, surrounded by several other culinary businesses that provide a variety of menu items. Operationally, Rumah Makan Waroeng Tenda Gaul manages the stock of building materials, ensures customer satisfaction, and implements a service strategy. As a result, this research will look at a variety of aspects of operational productivity in the restaurant industry, such as factors that affect worker efficiency, resource management, and performance strategy based on Mundel's theory.

This study is different from previous research that focused more on the operational productivity of the culinary industry as a whole. On the contrary, this study focuses on a special analysis of the application of the Mundel Theory in the Waroeng Tenda Gaul Restaurant, Lembah Branch of UGM. Previous research has discussed raw material management strategies and improving labor efficiency in the culinary industry but has not specifically measured the effectiveness of the Mundel Theory approach in the context of restaurants specializing in cooking menus. The novelty of this research lies in the application of the Mundel Theory methodology to evaluate specific factors that affect the operational productivity of medium-scale restaurants with traditional food concepts, as well as recommendations tailored to local business conditions (Awaluddin et al., n.d.)(Rahma, 2022)

One of the MSMEs that is growing rapidly in the culinary field, the Waroeng Tenda Gaul Restaurant, was chosen as the research location because it is located in an area that has fierce competition in the food and beverage industry. The restaurant faced several major problems during its operation. These include inefficient use of labor, suboptimal food serving time, and poor management of raw materials, which lead to a lot of waste. Additionally, the lack of an organized system to measure productivity makes it difficult for management to find which aspects need to be improved.

This research aims to be a solution to the problems faced by MSMEs such as the Waroeng Tenda Gaul Restaurant by applying the Mundel Theory as a method of measuring and increasing operational productivity. By analyzing the factors that affect work efficiency, this study will provide concrete recommendations to optimize the use of resources, speed up

the service process, and reduce waste of raw materials. Thus, the results of this study are expected to help restaurants in increasing their competitiveness in the midst of increasingly fierce culinary business competition and become a model for other MSMEs in increasing their productivity.(Aponno et al., 2017)

1.1. Statement of Problem

In the midst of fierce competition in the culinary industry, Waroeng Tenda Gaul Restaurant UGM Valley Branch faces difficulties in maintaining operational productivity. Some of the key issues faced include low labor efficiency, suboptimal food serving times, and ineffective management of raw materials, resulting in very high waste. In addition, there is no organized system for measuring productivity. As a result, management has difficulty finding which elements need to be improved to increase the company's competitiveness.

Not much research has been done on efficiency strategies in the culinary industry. However, the Mundel Theory method is still not used to measure and increase the operational productivity of medium-scale restaurants. Therefore, a more in-depth analysis is needed to evaluate the elements that affect work efficiency and resource utilization at the Waroeng Tenda Gaul Restaurant. The purpose of this study is to find the main obstacles in restaurant operations as well as develop the right strategies to increase productivity using the Mundel Theory approach

1.2. Objectives

The purpose of this study is to study the variables that affect the operational productivity of the Waroeng Tena Gaul Restaurant UGM Valley Branch. To find the obstacles that hinder operational performance, the main objective of this study was to evaluate labor efficiency, raw material management, and food serving time. This study will measure the level of restaurant productivity in a more systematic and structured manner using the Mundel Theory. The goal of this method is to provide a clearer picture of which components need to be improved to achieve a more optimal level of efficiency.

In addition, this study aims to formulate concrete strategies and recommendations in increasing restaurant operational productivity. Through in-depth analysis, it is hoped that this research can provide solutions to problems such as waste of raw materials, delays in service, and lack of an effective productivity measurement system. Thus, the results of this study are not only beneficial for Waroeng Tenda Gaul Restaurant, but can also be a model for other culinary MSMEs in increasing their competitiveness and operational efficiency in the midst of increasingly fierce business competition.(Rahma, 2022)

2. Method

The purpose of this descriptive study, which uses a quantitative approach, is to evaluate the operational productivity at the Waroeng Tenda Gaul Restaurant. This study uses primary data obtained through interviews with operational managers and direct observation of production and service processes in restaurants. The research process begins with determining the problem; Then, data is collected through interviews and observations; Mundel's productivity method is used; and finally, the results are interpreted to provide suggestions to improve productivity. (Ningtyas et al., 2019).

Research flow

1. Found productivity problems at Waroeng Tenda Gaul Restaurant, especially those related to work process efficiency, resource use, and optimal output achievement.
2. Read the literature on productivity measurement techniques, especially the Mundel Theory, and analyze the ways in which these techniques can be used to find and improve employee productivity in Waroeng Tenda Gaul.
3. Collect field data from various relevant sources through direct observation, interviews with operational managers, and documentation related to production and service processes.
4. Analyze data using the Mundel productivity method to measure operational efficiency and identify factors that affect productivity.
5. Interpret the results of the analysis to find potential efficiency improvements in labor usage, service time, and raw material management.
6. Compiling strategic recommendations that can be implemented by Waroeng Tenda Gaul to increase productivity and competitiveness in the culinary industry.
7. Concluding the results of the research and providing implications for other culinary MSMEs who want to apply similar methods to improve their operational efficiency.

The formula for drowning the productivity of mundel theory

3. Results and Discussion

	August			September		
	Quantity	**Price**	**Value**	**Quantity**	**Price**	**Value**
Output						
Total output	1250	IDR25.000	**IDR31,250,000**	1320	IDR25.000	**IDR33,000,000**
Input						
Workforce	6	IDR1,500,000	**IDR9,000,000**	6	IDR1,500,000	**IDR9,000,000**
Material						
chicken	163 kg	37.000	IDR6,031,000	165 kg	37.000	IDR6,105,000
Know	40 packs	5.000	IDR200.000	42 packs	5.000	IDR210.000
Tempeh	42 packs	6.000	IDR252,000	45 packs	6.000	IDR270,000

eggplant	20kg	8.000	IDR160,000	19kg	8.000	IDR152.000
Mammal liver	53 kg	20.000	IDR1,060,000	57kg	20.000	IDR1,140,000
Oyster mushrooms	10 kg	20.000	IDR200.000	12kg	20.000	IDR240.000
catfish	25 kg	25.000	IDR625.000	27 kg	25.000	IDR675.000
gallon of water	60	7.000	IDR420.000	60	7.000	IDR420.000
HV Tilapia	25 kg	30.000	IDR750.000	22 kg	30.000	IDR660.000
Total Material			**IDR 9,698,000**			**9.872.000**
Energy	1520	IDR5,000	**IDR7,600,000**	1520	IDR5,000	**IDR7,600,000**
Capital						
plate	50	IDR10,000	IDR500.000	50	IDR10,000	IDR500.000
glass	50	IDR7,000	IDR350.000	50	IDR7,000	IDR350.000
Spoon	50	IDR2,000	IDR100.000	50	IDR2,000	IDR100.000
Fork	50	IDR1,500	IDR75,000	50	IDR1,500	IDR75,000
Rice Paper	3 pack	IDR15,000	IDR45,000	4 pack	IDR15,000	IDR60,000
plastic straws	120	IDR250	IDR30,000	120	IDR250	IDR30,000
Total Capital			**IDR1,100,000**			**IDR1,115,000**
Total Inputs			**IDR27,398,000**			**IDR27,587,000**

To improve business performance, including in the culinary industry such as restaurants, measurement of operational productivity is essential. The Marvin E. Mundel method, which emphasizes the comparison between the inputs used and the outputs produced, is one of the most commonly used methods for measuring productivity. This method makes it possible to find areas that need improvement to improve operational effectiveness and efficiency. (Sriwana, 2019)

In addition, productivity evaluations often use the American Productivity Center (APC) Model. This model measures profitability, price improvement, and productivity, providing a holistic picture of a company's performance. The use of the APC model can help MSMEs understand what affects profitability and productivity and create appropriate improvement strategies. (Hanif et al., 2019)

MSMEs can conduct a thorough assessment of their operational performance by combining the APC model and the Marvin E. Mundel method. This method makes it possible to find the source of inefficiency, measure its effect on profitability, and create an effective plan to increase productivity. It is hoped that the application of this method will increase the competitiveness of MSMEs in the competitive culinary industry.(Manullang, 2020)

In this study, the data used were obtained from the period of August and September 2024. The data includes the amount of output produced, the amount of labor used, operational costs, and other factors that affect the productivity and profitability of MSMEs in the culinary sector. The analysis of data from the two months allows mapping productivity trends and evaluating the effectiveness of the strategies implemented.

Input	Productivity Index	Increase & decrease
Workforce	105,6	5,60%
chicken	104,32	4,32%
Know	100,57	0,57%
Tempeh	98,56	-1,44%
eggplant	111,15	11,15%
Mammal liver	98,18	-1,81%
Oyster mushrooms	88	-12%
catfish	97,77	-2,23%
gallon of water	105,6	5,60%
Tilapia	120	20%
Energy	105,6	5,60%
plate	105,6	5,60%
glass	105,6	5,60%
Spoon	105,6	5,60%
Fork	105,6	5,60%
Rice Paper	79,2	-20,80%
plastic straws	105,6	5,60%

Productivity indices in various sectors show varying upward and downward trends. Labor, chicken, tofu, gallon water, energy, and various tableware such as plates, glasses, spoons, and forks experienced an increase in productivity in the range of 0.57% to 5.60%. The highest increase occurred in tilapia with a 20% spike, which is most likely influenced by better aquaculture practices and the use of high-quality feed. Factors such as work efficiency, quality of raw materials, and production technology play a role in this increase.

On the other hand, some products experienced a decrease in productivity, such as tempeh (-1.44%), gizzard liver (-1.81%), catfish (-2.23%), and oyster mushrooms which dropped drastically by -12%. One of the main factors that cause a decrease in productivity is disruptions in the supply chain, changes in market demand, and suboptimal production conditions. For example, oyster mushrooms are highly dependent on a stable environment, so temperature or humidity fluctuations can have a significant impact on crop yields.

One of the most drastic declines occurred in rice paper with -20.80%, which could be due to reduced demand or a shift to more environmentally friendly alternatives. In contrast, the increase in productivity occurred in plastic straws (5.60%), although current global trends tend to reduce their use for environmental reasons. With increasing awareness of sustainability issues, the industry must be prepared to adapt to changing regulations and consumer preferences.

Overall, productivity is influenced by a combination of internal factors such as labor skills and production efficiency, as well as external factors such as environmental conditions, technology, and market policies. Therefore, continuous productivity improvement requires a

holistic approach, including innovations in technology, better resource management, as well as marketing strategies that are in line with consumer trends and needs.

4. Conclusion

Productivity measurement is an important aspect in improving business performance, especially in the culinary industry. The Marvin E. Mundel method and the American Productivity Center (APC) Model can be used together to identify operational inefficiencies, measure their impact on profitability, and design effective corrective strategies. With this approach, micro, small, and medium enterprises (MSMEs) can understand the factors that affect productivity and take concrete steps to increase their competitiveness in the market.

Based on data analyzed during August and September 2024, productivity in the culinary sector shows a varied trend. Some raw materials and resources have increased, such as tilapia which has risen by up to 20% thanks to better cultivation practices and the use of high-quality feed. However, there are also products that experience a decrease in productivity, such as tempeh, gizzard liver, and oyster mushrooms, caused by supply chain disruptions, changes in market demand, and suboptimal production conditions.

The most drastic decline occurred in rice paper with a figure of -20.80%, which is most likely influenced by a decrease in demand or a shift to more environmentally friendly alternatives. In contrast, increased productivity is also seen in products such as plastic straws, although current global trends are leading to a reduction in the use of plastics for the sake of environmental sustainability. This shows that external factors such as regulatory changes and consumer preferences also have a great influence on the productivity of the culinary industry.

Overall, productivity in the culinary industry is influenced by various internal and external factors, ranging from labor skills, production efficiency, quality of raw materials, to market policies and changes in consumer trends. Therefore, efforts to increase productivity require a comprehensive approach, including technological innovation, better resource management, and adaptive and sustainable marketing strategies.

References

[1] Aponno, C., Siahaya, S. L., Akuntansi, J., & Ambon, P. N. (2017). PENGUKURAN PRODUKTIVITAS KINERJA USAHA MIKRO GULA MERAH SAPARUA. *JURNAL MANEKSI*, *6*(2), 2017.

[2] Awaluddin, M., Ekonomi, F., Bisnis, D., Uin, I., & Makassar, A. (n.d.). *KAJIAN FAKTOR PENENTU KINERJA USAHA KECIL DI KOTA MAKASSAR*.

[3] IPHOV K. SRIWANA (2019). *Modul OL 6 PENGUKURAN PRODUKTIVITAS MARVIN. E. MUNDELL REKAYASA PRODUKTIVITAS*. http://esaunggul.ac.id0/9

[4] fauziah indah rahma. (2022). *ANALISIS PRODUKTIVITAS PADA INDUSTRI ABON IKAN*.

[5] Hanif, I., Maflahah, I., & Fahkry, M. (2019). ANALISIS PRODUKTIVITAS ROTI PIA PADA IRT PIA LATIEF KEDIRI. *AGROINTEK*, *13*(2), 143–154. https://doi.org/10.21107/agrointek.v13i2.5291

[6] Heizer, J. , & R. B. (2013). *Operations Management (11th Edition)* (J. , & R. B. Heizer, Ed.; 11th ed.).

[7] Kotler, P. , & K. K. L. (2016). *Marketing Management* (P. , & K. K. L. Kotler, Ed.; 15th ed.).

[8] Manullang, M. M. (2020). Analisis Pengukuran Produktivitas Dengan Menggunakan Metode Mundel dan APC Di PT X. *Jurnal Optimasi Teknik Industri*.

[9] Mundel, M. E. (1985). *Improving Productivity and Effectiveness (Prentice-hall International Series in Industrial & Systems Engineering)* (M. E. Mundel, Ed.).

[10] Yenny Novita. (2024). *Irwanto Samalo Arios-Analisis Produktivitas Perusahaan dengan menggunakan Metode ,·rr~~*.