

Differences in Profits in MSMEs Before and After the Implementation of e-Commerce (Case Study on Cornnah Home Industry)

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Abstract

This research is motivated by the large number of MSMEs in Kendari City but it is still rare to implement a sales system through e-commerce even though utilizing the e-commerce platform can increase sales and profits and can reduce production costs. This research was conducted in Anaiwoi Village, Kadia District, Kendari City, Southeast Sulawesi. The purpose of this study was to determine how the application of e-commerce and how the difference in profits before and after the application of e-commerce in MSMEs. The informants of this study were the owners of the Cornnah Home Industry. This research uses descriptive methods and quantitative data analysis using paired sample test analysis using SPSS 26 data analysis tools. The results of the study obtained that the Cornnah household industry utilizes e-commerce platforms such as Shopee and Tokopedia and utilizes Instagram social media and digital transactions in helping the sales and marketing process of Cornnah corn chips products based on the results of a different test using a paired sample test showing that a significant value of $0.040 < 0.05$ which gives the conclusion that the application of e-commerce provides a difference in profits for Cornnah Household Industry business owners before and after the application of e-commerce.

Keywords: e-commerce, profit, umkm, home industry.



INTRODUCTION

E-commerce has recently become popular not only with business people but also with users or consumers, the use of *e-commerce* has a huge impact on marketing business products, the reason for this is that *e-commerce* can increase the effectiveness and efficiency of business efforts because it can affect the minimization of costs from product marketing, labor and can even inhibit *overhead* costs. Then the existence of *e-commerce* can support the activities of business actors to reach maximum consumers because business actors can open virtual stores for 24 hours without stopping and can provide product information without having to be explained repeatedly.

Meanwhile, micro, small and medium enterprises (MSMEs) are one of the important sectors in the global economy that can contribute to job creation and economic growth of many countries, including the improvement of the economy in Indonesia which is connected to the role of micro, small and medium enterprises (MSMEs). The number of existing MSMEs continues to grow every year so that it can be said to be significant. The data shows that the number of micro, small and medium enterprises in Indonesia reaches 66 million, this figure reaches 99.9% of all businesses operating in Indonesia, the importance of MSMEs has a huge influence on the economy by contributing to Indonesia's Gross Domestic Product (GDP) income of more than 61% or around Rp9,580 Trillion each year, the data is the result of calculations from the number of registered MSMEs (BPS, 2023).

For MSME players, the application of *e-commerce* is a necessity in increasing profits and helping to expand market reach, increase operational efficiency, and build brands and customers more effectively, so that in this evolving digitalization era *e-commerce* becomes the foundation for the growth and success of MSMEs. Effective *e-commerce* implementation allows MSMEs to optimize the value chain of brand products, increase operational efficiency and reduce physical infrastructure costs. This can provide opportunities for MSME players to develop in a business environment and be digitally connected. The results of the study explain that after the application of *e-commerce*, the production activities of a product can increase and increase and affect product quality (Ningsih, 2018).

Corn is one of the important agricultural commodities in Indonesia that has a source of carbohydrates and has nutritional benefits as well as being a staple food in some regions, in the agricultural business corn is used as a raw material in the snack industry such as corn chips. Traditional marketing of corn chips that still relies on direct sales or through local distributors often limits market reach and potential profits, so the application of *e-commerce* can help open opportunities for MSMEs to expand their market reach, increase sales, and ultimately, increase





profits. The application of *e-commerce* to corn chips marketing can enable MSMEs to utilize various features of online stores, digital payments and help business owners in simplifying transactions to attract more consumers.

Cornnah corn chips home industry located in Kadia District, Kendari City, Southeast Sulawesi, is one part of Micro, Small and Medium Enterprises (MSMEs). Cornnah Home Industry implements the business of selling its products by utilizing the *e-commerce platform*, the platforms used are Shopee and Tokopedia, at first the owner did not use *e-commerce* but after a year of running the business the owner applied the *e-commerce* platform to his business, there were differences in total sales obtained before using *e-commerce* and after its application both in the marketing range, production costs, and the income he received.

Based on the explanation above, in conducting this research on the home industry, the authors want to see how the application of *e-commerce* has an impact on the home industry in increasing profits in their business. So that the author is interested in carrying out research by raising the title "The Difference in MSME Profits Before and After the Implementation of E-commerce (Case Study on the Cornnah Home Industry)" to be researched further, by taking a case study of the home industry will allow researchers to go deeper to provide more detailed insights into the obstacles, opportunities and potential possessed in an effort to increase profits.

METHOD

Informants in this study are corn chips business owners in the Cornnah Household Industry. The types of data used in this study are primary data and secondary data. Primary data was obtained directly from interviews and questionnaires distributed. Data collection techniques are carried out by observation, interviews, literature, and documentation. For the formula of production costs, revenue and profit as follows:

1. According to Zahara and Anwar (2021), the total cost of production can be analyzed using the total cost formula as follows:

$$TC = FC + VC$$

Description:

TC: *Total Cost* / total production cost (Rp / year)

FC: *Fixed Cost* (Rp/year)

VC: *Variable Cost* / variable cost (Rp / year)

2. Furthermore, the calculation of fixed costs (depreciation costs) is carried out, namely recording and summing up all costs incurred that are not related to the amount of



production. The amount of fixed costs can be known by the following formula: (Munawir, 2004)

$$D = \frac{I}{N}$$

Description:

D Depreciation of equipment (Rp/year)

I Price of equipment used (Rp/tool)

N Economic life of equipment (years)

3. Furthermore, calculating variable costs is by summing up all costs incurred for the total production of corn chips. The amount of variable costs can be found by using the following formula: (Riwayadi, 2006)

$$VC = (Px \cdot X)$$

Description:

VC: *Variable Cost* / variable cost (Rp / month)

X : Tools used ()

Px: Tool price (Rp/tool)

Acceptance Formula: (Suratiyah, (2009)

$$TR = Py \cdot Y$$

Description:

TR: Total *Revenue* (Rp/month)

Py: Price / Product Selling Price (Rp / package)

Y : Number of Products Produced (packaging/gram)

4. According to Rianse and Abdi (2009) to find out how much business profit is obtained, the formula that can be used is as follows:

$$\pi = TR - TC$$

Description:

π : Profit (IDR/year)

TR: Total Revenue (IDR/year)

TC: *Total Cost* / Total costs incurred (Rp/year)

After the calculation data is obtained, an analysis of the difference in benefits is carried out using a *Paired Sample T-Test (Paired Sample T-Test)* The *paired t-test* or *paired t-test* is carried out on two paired data using the SPSS 26 analysis tool to be able to compare the mean or average difference between two variables whose data sources come from the same subject.

RESULTS AND DISCUSSION

Implementation of E-commerce in Cornnah Home Industry MSMEs

E-commerce applied by corn chips MSMEs in the Cornnah Home Industry in Kendari City is based on e-commerce platforms such as Tokopedia and Shopee and Instagram social media, which are easily accessible via PC, laptop, tablet, and mobile phone, allowing managers to describe products, provide promotions, and interact with consumers. The manager conducted research on the application of e-commerce beforehand, such as getting to know e-commerce platforms, reading reviews, attending webinars, and training from the business community. The use of e-commerce aims to increase sales and expand market reach given the limitations of physical stores and the digital needs of consumers. Product prices are set by considering shipping costs and platform commissions to remain competitive, while uploading attractive photos and descriptions on e-commerce platforms and social media helps boost sales. The product delivery process is supported by logistics partners that are automatically integrated on the platform to reduce errors. Orders are managed through a dashboard that enables automatic stock management, with secure payment via bank transfer, OVO or COD. The implementation of e-commerce has yielded positive results and improved efficiency, in line with research that shows the significant impact of e-commerce on the performance of MSMEs in utilizing digital technology.

Profit Differences Before and After E-commerce Implementation

Production Costs in Cornnah Home Industry MSMEs

The types of costs incurred by the cornnah household industry can be seen in Table 1 below.

Table 1 Types of Fixed Costs in the Cornnah Home Industry

No.	Fixed Input Type	Before (Rp/year)		After (Rp/year)	
		2020	2021	2022	2023
1.	Frying pan	15.000	30.000	30.000	30.000
2.	Stove	53.286	106.571	106.571	106.571
3.	Gas cylinder	45.000	90.000	90.000	90.000
4.	Small spinner	100.000	200.000	200.000	200.000
5.	Big spinner	700.000	1.400.000	1.400.000	1.400.000
6.	Spatula	9.500	19.000	19.000	19.000
7.	Large jar	93.750	187.500	187.500	187.500
8.	Drainer	20.000	40.000	40.000	40.000
9.	Gram scales	20.750	41.500	41.500	41.500

10	Knife	13.500	27.000	27.000	27.000
11.	Basin	50.000	100.000	100.000	100.000
12.	Tax	250.000	500.000	500.000	500.000
13.	Scissors	3.750	7.500	7.500	7.500
14.	Regulator	44.000	88.000	88.000	88.000
Total		1.418.536	1418536	2.837.071	2.837.071
Average		101.324	101324	236.423	236.423

The type of fixed costs is not affected by changes in sales in production or sales in the cornnah home industry in Table 1 shows that the types of costs incurred are the same before and after the implementation of *e-commerce* in the cornnah home industry production equipment and other equipment have existed before the implementation of *e-commerce* and have a constant cost value and the type of costs incurred is a type of cost related to the structure or operation of the business not by the way sales are used so that it does not affect the type of costs in the cornnah home industry Unlike the types of variable costs, the types of variable costs can be seen in Table 2.

Table 2 Table of Variable Cost Types in the Cornnah Home Industry

No .	Variable Input Type	Before (Rp/year)		After (Rp/year)	
		2020	2021	2022	2023
1.	Raw materials	5.860.000	22.000.000	25.850.000	36.300.000
2.	Oil	4.233.000	9.605.000	11.288.000	15.980.000
3.	Variant seasoning	856.800	1.931.800	2.363.600	3.333.600
4.	Packaging	7.114.000	15.778.000	18.702.000	26.720.000
5.	Marketing costs	-	-	2.150.000	3.020.000
6.	Gas	1.200.000	4.000.000	3.600.000	6.400.000
7.	Electricity	300.000	600.000	600.000	600.000
8.	Transportation	300.000	600.000	600.000	600.000
9.	Labor	6.000.000	12.000.000	19.000.000	23.000.000
Total variable cost		25.863.800	66.514.800	84.153.600	115.953.600
Average		3.232.975	8.314.350	9.350.400	12.513.704

Table 2 shows that after the implementation of e-commerce, there are additional types of

variable costs, namely marketing and endorsement costs, which are the consequences of implementing e-commerce. These variable costs are higher than before the implementation of e-commerce, increasing along with the amount of production that increases due to increased orders and wider market access, as well as the ease for consumers to order products online. This is in line with Syafruddin and Aulia's (2021) research which explains that e-commerce can increase the competitive advantage of MSMEs, assist MSME players in applying digital marketing technology, and increase sales. However, e-commerce does not affect the type of fixed costs in MSMEs, because its application is more related to marketing strategies and effective sales patterns, not to fixed costs.

The results of the study show the total difference in production costs incurred in the cornah home industry MSMEs can be seen in Table 3.

Table 3 Production Costs in Cornnah Home Industry Corn Chips Business Before and After E-Commerce Implementation (2020-2023)

Description	Year	Cost Type (Rp/year)		
		Stay	Variables	Production
Before	2020	1.418.536	25.863.800	27.282.336
	2021	2.837.071	66.541.800	69.378.871
	Total	4.255.607	92.405.600	96.661.207
	Average	2.127.804	46.202.800	48.330.604
After	2022	2.837.071	84.153.600	86.990.671
	2023	2.837.071	115.953.600	118.790.671
	Total	5.674.142	200.107.200	205.781.342
	Average	2.837.071	100.053.600	102.890.671

Based on table 3, it can be explained as follows;

1. Fixed costs in the Cornnah Home Industry are expenses that remain the same every year, despite the addition of production inputs. Based on Table 3, the average fixed costs before the implementation of e-commerce amounted to Rp2,127,804 in contrast to after the implementation of e-commerce which amounted to Rp2,837,071. This difference occurred because the business started in the middle of the year, but after the first year, fixed costs stabilized each year. This cost is not affected by increased production because it includes the unchanged costs of production equipment, supporting tools, and taxes, in accordance

with the opinion of Wicaksono, et al. (2022) that fixed costs are costs that are not affected by changes in the number of products or services produced.

2. Variable costs in the Cornnah Home Industry are costs that change according to the amount of corn chip production. The higher the output, the greater the variable costs incurred. Based on Table 3, the average variable cost before the implementation of e-commerce was IDR 46,202,800, while after the implementation of e-commerce it increased to IDR 100,053,600. This increase was caused by the increase in production, which required additional raw materials and supporting materials. This is in line with the opinion of Riwayadi (2006), which states that variable costs depend on operational activities and are only incurred if there is a production process.
3. The calculation results from Table 3 show that the Cornnah Household Industry experienced an increase in average production costs, with costs before the implementation of e-commerce amounting to Rp48,330,604, while after the implementation of e-commerce it increased to Rp102,890,671. This difference is caused by an increase in variable costs due to an increase in the amount of production. This is in line with the opinion of Puryati, et al. (2017) which states that accuracy in calculating production costs and the application of e-commerce simultaneously have a significant effect on increasing sales. In other words, more effective use of e-commerce by the Cornnah home industry business can increase sales of its products.

Acceptance of in Cornnah Home Industry MSMEs

The total business revenue of Cornnah Home Industry corn chips products can be seen in Table 4.

Table 4 Revenue Before and After the Implementation of *E-commerce* in Cornnah Home Industry Corn Chips Business (2020-2023)

Description	Year	A	B	A.1	B.2	C
Before	2020	1.950	1.607	10.000	15.000	43.605.000
	2021	3.754	4.135	10.000	15.000	99.565.000
	Total amount of revenue					148.480.000
	Average revenue					74.240.000
After	2022	4.525	4.826	10.000	15.000	117.640.000
	2023	7.035	6.325	10.000	15.000	165.225.000
	Total amount of revenue					282.865.000

	Average revenue	141.432.500
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Ket

A Packaging Quantity of Corn Chips (65gram)

B Packaging Quantity of Corn Chips (100 grams)

A.1 Selling price of corn chips (IDR/65gram)

B.2 Selling price of corn chips (IDR/100gram)

C Total Revenue per Year (Rp/Year)

Based on Table 4, there was an increase in revenue in the Cornnah Home Industry, with an average revenue before the implementation of e-commerce of Rp74,240,000, which was lower than the average revenue after the implementation of e-commerce of Rp141,432,500. This increase is due to the increased amount of production and the ability of the business to reach a wider market, which allows an increase in the number of sales. Despite an increase in production costs and a reduction in administrative costs that must be paid to the sales service provider on the e-commerce platform, the revenue obtained shows that the implementation of e-commerce has a positive effect on increasing revenue. This result is in line with the opinion of Darma, et al. (2022) that e-commerce can increase the number of consumers and revenue by facilitating the process of buying and selling and shipping products online, so that the sales volume of Cornnah Home Industry corn chips is increasing.

Profits in Cornnah Home Industry MSMEs

The total profit on the Cornnah Home Industry corn chips product business can be seen in table 5.

Table 5 Profits Before and After the Implementation of *E-commerce* in Cornnah Home Industry Corn Chips Business (2020-2023)

Description	Year	1	2	3
Before	2020	43.605.000	27.282.336	16.322.664
	2021	99.565.000	69.378.871	30.186.129
	Total amount of profit			46.508.793
	Average			23.254.397
After	2022	117.640.000	86.990.671	30.649.329
	2023	165.225.000	118.790.671	46.434.329
	Total amount of profit			77.083.658

	Average	38.541.829
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Ket:

1 = Total Revenue (Rp/year)

2 = Total Production Cost (Rp/year)

3 = Total Profit (Rp/year)

Based on Table 5, there was an increase in profits in the Cornnah Home Industry, with an average profit before the implementation of e-commerce of Rp23,254,397, which was lower than the average profit after the implementation of e-commerce of Rp38,541,829. This increase is due to the application of e-commerce which brings changes to the level of profit, such as increasing market reach, transaction process efficiency, service quality, marketing capabilities, supervision, and product sales capabilities. These results are in line with the research of Ningsih, et al. (2018), which states that the application of e-commerce in MSMEs provides benefits in reaching wider consumers and developing products and market networks. This is also supported by the opinion of Sari (2022) which explains that e-commerce allows customers to shop and make transactions 24 hours a day, providing more choices to consumers.

Results of Differential Test Analysis of Profits in Cornnah Home Industry MSMEs

In this study, to find differences in profits, the paired sample T test statistical method was used to compare profits between two groups, namely profits before and after the application of *e-commerce* in the cornnah home industry. The results of the difference test using the SPSS 26 analysis tool can be seen in Table 6.

Table 6 Paired Samples Test Results

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Before	232.543,96	2	980.295,01	693.173,25
	After	385.418,29	2	111.616,80	789.250,00

Based on table 6, it is known that the two research variables, namely profits before and after the implementation of *e-commerce* with the number of samples tested as many as 4 samples, with a standard deviation value of the average profit received by business owners is Rp980,295.01 and the standard division obtained after the implementation of *e-commerce* is Rp111,616.80.

Table 7 Paired Samples Test Results

		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	Before	152.8	135.873,0	960.7	274.95	307.97	15.	91	0.040
	After	74,32		67,500	1,41	2.39	2		

***Significant at $\alpha=0.05$

H1=Significant

The results in table 7 show that in the *paired sample statistics test* that the mean value between before and after the implementation of *e-commerce* has changed and in the *paired sample test* with a significance value of 0.040, which is <0.05 , meaning that the hypothesis is accepted which shows that there is a difference in profit before and after implementing *e-commerce*. These findings support the results of previous research conducted by Putra and Safrudin (2021). In this study, it was found that the results of the t-test showed that there were differences in the income of MSME business owners before and after the implementation of *e-commerce*.

CONCLUSION

Based on the results of research and discussion, it can be concluded that the Cornnah Corn Chips Home Industry MSMEs implement *e-commerce* by utilizing *e-commerce* platforms such as shopee and tokopedia and utilizing Instagram social media and digital transactions in helping the sales and marketing process of Cornnah corn chips products. Cornnah Corn Chips Home Industry profits before the implementation of *e-commerce* are lower than after the implementation of *e-commerce*.



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