

# Technical Efficiency Analysis of MSMEs Fashion Offline and Online in Surabaya

*by Atik Purmiyati*

---

**Submission date:** 04-Nov-2022 04:36AM (UTC+0800)

**Submission ID:** 1943759046

**File name:** i\_Artikel\_Tambahan102\_Technical\_Efficiency\_Analysis\_of\_MSMEs.pdf (523.78K)

**Word count:** 6768

**Character count:** 36189

## Technical Efficiency Analysis of MSMEs Fashion Offline and Online in Surabaya

Atik Purmiyati<sup>1</sup>, Tamat Sarmidi<sup>2</sup>, Reza Pradipta<sup>3</sup>

<sup>1</sup>Faculty of Economics and Business, Airlangga University, Indonesia

<sup>2</sup>Faculty of Economics and Management, Universiti Kebangsaan Malaysia,

<sup>3</sup>Faculty of Economics and Business, Airlangga University, Indonesia

E-mail: [atik-p@feb.unair.ac.id](mailto:atik-p@feb.unair.ac.id)

Received: July 4, 2022; Revised: September 19, 2022; Accepted: September 19, 2022

Permalink/DOI: <http://dx.doi.org/10.17977/um002v14i22022p214>

### Abstract

The main purpose of this study is analyzing the level of technical efficiency of MSMEs fashion offline with offline and online in Surabaya, examine the differences between offline with offline and online, and determine the factors that affect technical efficiency. This study uses purposive sampling method with primary data. Non-parametric and parametric approach used with Data Envelopment Analysis, Independent sample T-Test and Tobit Regression. First, the results showed the average level of technical efficiency of offline MSMEs fashion was 65 percent with 8 efficient businesses. Meanwhile, the average level of technical efficiency of online and offline MSMEs fashion is 77.1 percent with 20 efficient businesses. Second, there are differences in the average efficiency of offline and online MSMEs fashion. The result of Tobit Regression on the offline MSMEs fashion show the length of business and number of store offline have positive and significant impact on technical efficiency, while number of workers and capital credit has no significant effect. While on offline and online MSMEs fashion, show the number of online stores and capital credit has a positive and significant impact on technical efficiency, while the length of business and the number of offline stores have no significant effect.

**Keywords:** *Technical Efficiency; MSMEs Fashion; Offline; Online*

**JEL Classification:** C01; D24; P23

### INTRODUCTION

Micro, Small and Medium Enterprises (MSMEs) are productive economic units whose existence is very important because they have a strategic role in national economic development, especially in developing countries such as Indonesia (Manzor et al., 2021; Khurana et al., 2021; Erdin and Ozkaya, 2020). Referring to data from the Central Bureau of Statistic Indonesia (2016) during the 1998 monetary crisis in Indonesia, MSMEs were able to absorb 65,601,591 workers. MSMEs in Indonesia continue to experience developments both in quality and quantity, according to data from the Ministry of Cooperatives and Small and Medium Enterprises which is processed from data from the Central Bureau of Statistic Indonesia in terms of quantity, MSMEs in 2015 amounted to 59,262,772

business units, in 2016 reaching 61,651,177 business units, in 2017 reached 62,922,617 business units, in 2018 reached 64,194,057 units, and in 2019 there are 65,465,497 so that the number of MSMEs in Indonesia increased by an average of 2.7 percent annually (Ministry of Cooperatives and Small and Medium Enterprises, 2019).

In Indonesia, MSMEs have several categories of business fields, namely the agricultural and non-agricultural sectors. The non-agricultural sector is divided into 20 categories which are coded based on the Indonesian Standard Classification of Business Fields in 2009. The wholesale and retail trade sector has the largest number of 12.33 million units, meaning that this sector is the most economically much compared to the others. The background of the large number of business units in this sector is the easy requirements to establish such as relatively small capital required, simple form of business, does not require special skills and can be run on a home scale (Lukiyanto & Wijayaningtyas, 2020). Although the number of MSMEs is increasing every year, MSMEs are still faced with problems such as marketing difficulties, raw material difficulties, lack of capital and intense business competition (Central Bureau of Statistic Indonesia, 2021; National Development Planning Agency, 2020).

In era of the global economy, MSMEs actors are required to increase their competitive advantage in order to compete in the global market (Singh et al., 2022). One of the factors that can increase the competitiveness of MSMEs is by utilizing information technology such as marketing and trade media (Reim et al., 2022; Putra and Santoso, 2020; Cenamor et al., 2019). According to Susanto (2018), the evolution of technology will encourage trading business actors to reach consumers widely and in a short time which is a potential and opportunity for business actors. According to the Central Bureau of Statistic Indonesia (2019), the first factor that causes MSMEs actors in Indonesia to not use e-commerce services is because MSMEs actors feel more comfortable selling directly (offline). Second, is the disinterest of MSMEs actors in Indonesia to sell online. Third, the lack of knowledge and expertise of MSMEs actors in the use of e-commerce services. Surabaya as the provincial capital of East Java Province has a strategic role on a national scale as a service center for Eastern Indonesia activities, especially in the trade sector at national and international nodes. This is indicated by the performance of the highest sector that contributes to the Product Domestic Regional Bruto (PDRB) of Surabaya in 2020 is the wholesale and retail trade sector, car and motorcycle repairs amounting to Rp106,340,870,000,000 (Central Bureau of Statistic Surabaya, 2021). One of the sectors in the wholesale and retail trade that is growing from upstream to downstream is the fashion industry. According to the director of the textile, leather and footwear industry at the Ministry of Industry Republic Indonesia (2019) quoted from [bdisurabaya.kemenperin.go.id](http://bdisurabaya.kemenperin.go.id), textile consumption will continue to increase in line with population growth and lifestyle changes.

In the development of business competition today, MSMEs fashion actors have begun to adapt to using e-commerce services. The use of information technology can increase the level of efficiency and innovation development for MSMEs actors (Wu et al., 2022; Dwivedi et al., 2021; Ulas, 2019; Verhoef & Bijmolt, 2019). An efficient situation is needed for business actors to survive in market competition by utilizing existing inputs to become optimal outputs or by

obtaining minimum inputs with certain outputs (Pathirana & Yarime, 2018; Swasono, 1993). However, there are still MSMEs fashion who choose to sell directly (offline) due to limited human resources and investment.

According to Ishak et al. (2019) examines the level of technical efficiency in the leading creative industry in Bandung using Data Envelopment Analysis (DEA). Producing the fashion industry and the music industry are the leading efficient creative industries in the city of Bandung. The fashion industry is one of the efficient ones because the inputs used can generate a large turnover, besides that the fashion industry is an icon of Bandung, making it a special attraction for local and out-of-town consumers to shop for fashion products in both traditional and modern markets in the city of Bandung. That is in line with research conducted by Parvin et al. (2021) and Shan et al. (2020) which states that the use of e-commerce not only makes SMEs more efficient but also emphasizes SMEs business transactions. Another research related to information technology was conducted Ghalib and Setiawan (2019) aims to analyze the differences before and after the use of social media on the development of catering businesses in Semarang, using the Wilcoxon Difference Test analysis tool and variables in the form of turnover, profit, number of production and number of workers. The results showed that there was an average increase in the four variables caused by the effect of using social media. By utilizing social media in terms of marketing, of course, it can expand the reach of the market or consumers rather than marketing through print media.

Considering technical efficiency in business, of course, it would be even better if followed by analyzing the factors that affect technical efficiency itself. Nittayakamolphon (2020) examines the level of technical efficiency and analyzes the factors that affect the technical efficiency of a community textile company in Chaloem Phra Kiat, Na Pho, Buriram Province, Thailand using the Two-Stage DEA method. The results showed that 70% of community textile companies in Chaloem Phra Kiat and Na Pho District, Buriram Province were inefficient in technical performance and pure technical performance. Therefore, it is important for entrepreneurs to explore the factors that can increase business efficiency if the efficiency value is not met. The factors that affect the technical efficiency of textile companies in Chaloem Phra Kiat and Na Pho, Buriram Province are the proportion of capital per worker, location, experience of the leader and the type of product in the business that can help textile businesses in the region to improve the technical efficiency of their business.

Based on the background and previous research, this study was conducted to analyze the technical efficiency of MSMEs fashion offline with offline and online in Surabaya. The location of Surabaya was chosen as the main object in this study because Surabaya is the center of industry and trade in the province of East Java. When compared to other regions, Surabaya is the largest contributor to the number of wholesale and retail trade business actors, representing 7.8% of the total wholesale and retail trade business actors in East Java Province (Central Bureau of Statistics, 2016).

## METHOD

21  
This study using primary data with purposive sampling method. Purposive sampling is a sampling technique with certain considerations, the criteria used include MSMEs fashion offline with offline and online in Surabaya. While determining

the sample size in this study using the Lemeshow formula (1997), the use of the Lemeshow formula was carried out because the total population was unknown. Here's the Lemeshow formula:

$$n = \frac{z^2 p(1-p)}{d^2} \quad (1)$$

Where,

- n = Samples required minimum number
- z = Distribution standard value ( $\alpha = 5\%$ )
- p = Prevalence of outcome (50%)
- d = 10% accuracy level

Based on the equation (1), this research using 192 respondents sample, consisting of 96 respondents of offline fashion MSMEs and 96 respondents of offline and online fashion MSMEs in Surabaya.

This research using Data Envelopment Analysis (DEA) to measure the level of technical efficiency of MSMEs fashion in offline, offline and online in Surabaya. DEA is an performance restrict technique to usage of non-parametric approach that using linear programming model to measure the ratio of output and input, and measures the relative efficiency of units. DEA has a production unit called the Decision Making Unit (DMU) where the resulting DEA efficiency score consists of 0 – 100% or 0 – 1 in decimals. DEA measures technical efficiency from one input and one output to multi-input and multi-output using the relative efficiency value as the ratio of inputs and outputs. Output-oriented model was chosen because the production capacity of micro-enterprises is smaller than the company's industrial level, so the required inputs are also small and input costs are difficult to push.

The DEA model in analyzing the technical efficiency of the apparel trading business in this study uses the return to scale (VRS) variable model (Coelli et al., 2005).

$$\text{Virtual Input} = v_1 x_1 + \dots + v_l x_l = \sum_{i=1}^l v_i x_i \quad (2)$$

$$\text{Virtual Output} = u_1 y_1 + \dots + u_j y_j = \sum_{j=1}^J u_j y_j \quad (3)$$

$v_i$  is the weight assigned to  $x_i$  input and  $u_j$  is the weight assigned to  $y_j$  output linear. So, the VRS Model is:

$$\begin{aligned} & \text{Max } \sum_r v_i x_{ij0} + u_0 \\ & u_i, v_i \\ & \text{s. t} \\ & \sum_r u_r y_{rj} - \sum_i v_i x_{ij} + u_0 \leq 0; \forall_j \\ & \sum_i u_r y_{rj0} = 1 \\ & u_r, v_i \geq 0; \forall_r \forall_i \end{aligned}$$

Where,

- $y_{rj}$  = the amount of output r produced by MSMEs fashion
- $x_{ij}$  = the amount of input i used by MSMEs fashion,



- $u_r$  = the weight assigned to the output  $r$ , ( $r = 1, \dots, t$  and  $t$  are the number of outputs),
- $v_i$  = the weight assigned to input  $i$ , ( $i = 1, \dots, m$  and  $m$  are the number of inputs),
- $n$  = number of MSMEs fashion,
- $j_0$  = MSMEs fashion that was given an assessment.

Coelli et al. (2005) noted that the concept of CRS is necessary if all firms operate at the right scale. The concept of CRS is used when companies are not working on the quality ladder, which confuses labor costs with quality of work. However, due to imperfect competition, financial constraints, unstable production processes, government regulations and weather restrictions, companies cannot achieve high production efficiency. Therefore, it is recommended to choose the variable return-to-scale (VRS) assumption. By using the VRS perspective, efficiency can be calculated without affecting the measurement efficiency.

**Table 1.** Variabel Data Envelopment Analysis

Variable	Definition
<b>Output</b>	
Y	Omzet per month
<b>Input</b>	
X <sub>1</sub>	Initial capital
X <sub>2</sub>	Labor cost
X <sub>3</sub>	Overhead cost
X <sub>4</sub>	Raw material cost

42

The test is used to test the hypothesis by using the independent sample t-test. This test aims to find differences between two groups by comparing the mean of two groups from two different (independent) samples and comparing the mean of the two models. In this study, this test was used to analyze the comparative performance of offline, offline and online fashion MSMEs in Surabaya. Then in the next analysis stage, this study uses Tobit regression. Tobit regression is used to determine the relationship between the variable (X) and the dependent variable (Y) by using the maximum likelihood estimate. The characteristic of Tobit regression is that the variable (Y) used has a constant value with a variable between 0 to 1. This Tobit regression test aims to identify factors related to the technical efficiency of offline MSMEs with offline and online MSMEs. The following formula is used for Tobit regression shown below:

$$Y_i = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e_i \quad (4)$$

Where  $Y_i$  is the first Decision Making Unit (DMU) technical efficiency value obtained based on the estimation of the DEA model, coefficient is the unknown parameter to be estimated, and  $e_i$  is the error term. Independent variable consist of length of business ( $X_1$ ), number of store ( $X_2$ ), number of workers ( $X_3$ ), use of credit capital ( $X_4$ ), and there is an additional variable in the number of online stores in offline and online apparel trading businesses. Credit capital variable is a dummy variable. The variables used in the study using Tobit regression are as follows.

**Table 2.** Variable Tobit Regression Analysis

Variable	Definition
X <sub>1</sub>	Length of business (years)
X <sub>2</sub>	Number of store (units)
X <sub>3</sub>	Number of workers (person)
X <sub>4</sub>	Use of credit capital (dummy) 0 = Not using credit capital 1 = Using credit capital

**RESULTS AND DISCUSSION**

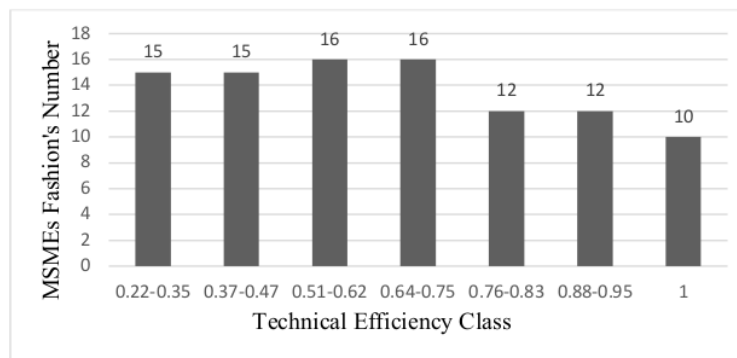
According to the estimation of the data envelopment analysis, the average technical efficiency is 0.65 in the technical efficiency range with a value range of 0.222 to 1 and a standard deviation with a value of 0.232. This technical efficiency performance shows that the average performance achieved by MSMEs with physical stores (offline) in Surabaya is 65% of the publicity potential of this work. Overall, MSMEs with physical stores in Surabaya can still increase by 35% to achieve the best results. According to Permatasari and Setyawan (2019), many factors affect the cost of low technology, such as labor costs, working capital and total capital while commercial copies have not achieved quality.

**Table 3.** Technical Efficiency of MSMEs fashion with Offline Store in Surabaya

	N	Average	Min	Max	Standard Deviation
TE-DEA VRS	96	0.65	0.222	1	0.232

\*TE-DEA VRS = Technical Efficiency-Variable Return to Scale

The DEA-CRS estimation results show that the 100% efficiency of MSMEs fashion that have offline stores in Surabaya is only achieved by only 10 units or 10.42% of the total. The number of MSMEs fashion that have offline stores with technical efficiency below 0.75 is 62 units or 64.58% of the total. In addition, the technical efficiency level of 0.76-0.99 was achieved by 24 units or 25% of the total.



**Figure 1.** Technical Efficiency Distribution of MSMEs Fashion Offline in Surabaya

Figure 2 shows the value of the average input and output of DEA which shows that the average input and output of MSMEs fashion in offline shows that omzet has a greater value than the others. This is because omzet is the accumulation of total sales generated by MSMEs fashion that have offline stores for a period of one month.

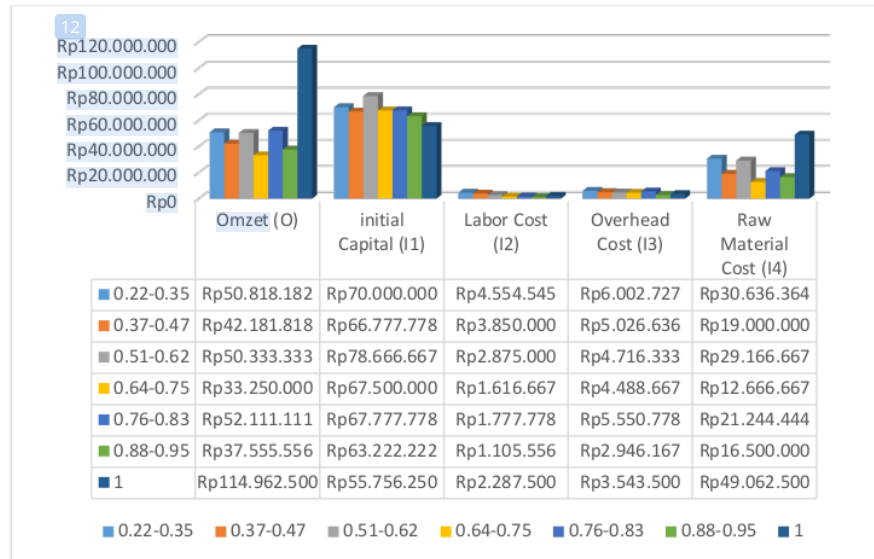


Figure 2. Average Input and Output DEA of MSMEs Fashion That Have Offline Stores in Surabaya

**Technical Efficiency of MSMEs Fashion with Offline and Online Stores**

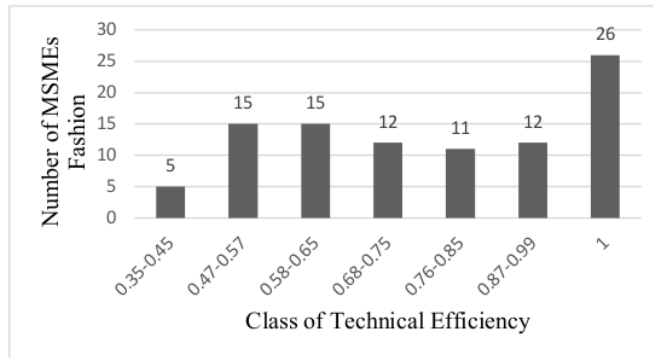
The value of average technical efficiency based on the estimation of Data Envelopment Analysis with the assumption of Variable Return to Scale (TE-DEA-VRS) is 0.771 in the efficiency range of 0.359-1 with a standard deviation of 0.197. This efficiency value shows that the average performance that can be achieved by MSMEs fashion that have offline and online stores in Surabaya is 77.1% of the maximum yield potential of this sector. This situation shows that the achievement omzet of MSMEs fashion that has offline and online stores in Surabaya can still increase by around 22.9% to achieve maximum efficiency.

Table 4. Technical Efficiency of MSMEs Fashion That Have Offline and Online Stores in Surabaya

	N	Average	Min	Max	Standard Deviation
TE-DEA VRS	96	0.771	0.359	1	0.197

\*TE-DEA VRS = Technical Efficiency-Variable Return to Scale





**Figure 3.** Distribution Technical Efficiency of MSMEs Fashion That Have Offline and Online Stores in Surabaya

The DEA-CRS estimation results show that the efficiency of 100% MSMEs fashion that have offline and online stores in Surabaya can be achieved by 26 units of the total MSMEs fashion that have offline and online stores in Surabaya, and the remaining 75 units of MSMEs fashion which have offline and online stores have not yet achieved technical efficiency. Based on these results, it is known that overall the development of the average level of technical efficiency MSMEs fashion that have offline and online stores in Surabaya has a fluctuating trend because the level of technical efficiency MSMEs fashion that have individual offline stores is also fluctuating. So it can be concluded that MSMEs fashion that have offline and online stores in Surabaya are still not optimal in managing their resources or are still in the inefficient category. The efficiency level of offline and online fashion MSMEs is higher than offline MSMEs because MSMEs that use e-commerce have a higher market reach and tend to have lower operational costs (Kartiwi et al., 2018). In addition, according to Melovic et al. (2021) and Reinartz et al. (2019) people are more interested in doing online shopping, especially millennials because online shopping more profitable than traditional shopping. Figure 4. shows the average input and output MSMEs fashion that have offline and online stores, it is known that omzet has a greater value than the others. This is because omzet is the accumulation of total sales generated by MSMEs fashion that have offline and online stores for one month.

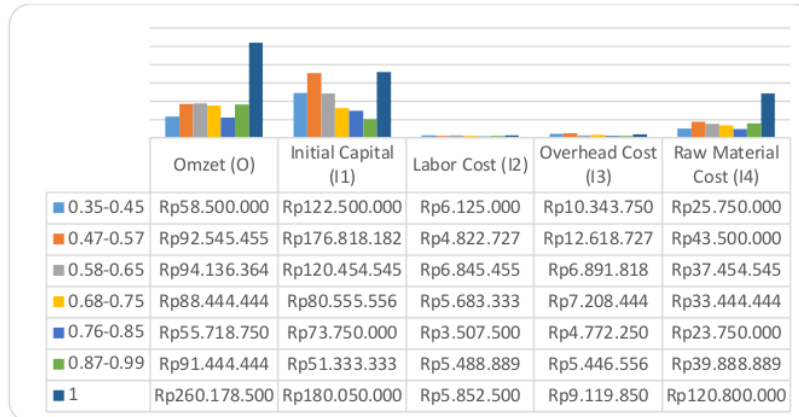


Figure 4. Average Input and Output DEA of MSMEs Fashion with Offline and Online Stores in Surabaya

The Table 5 show result of the calculation of the difference test. *Levene's Test for Equality of Variances* column produces has significance value 0.114 ( $p > 0.05$ ) which means that the two variances are the same, so equal variance assumed is used to compare the population averages. At equal variance assumed, *Sig* value is obtained. (2-tailed) of  $0.001 < 0.05$ , then according to the hypothesis it can be concluded that have difference in the average technical efficiency of offline MSMEs fashion with offline and online MSMEs fashion.

Table 5. Difference Test Calculation Results

		Independent Samples Test			
		Levene's Test for Equality of Means		t-test for Equality of Means	
		F	Sig.	T	Df
Technical Efficiency Results	<i>Equal variances assumed</i>	2.5	0.114	3.37	142
	<i>Equal variances not assumed</i>			3.37	138.2

**Determinants of the Technical Efficiency of MSMEs Fashion (Offline Stores)**

In this part, we discuss the results of the Tobit regression regarding the determinants of the technical efficiency of MSMEs fashion that have offline stores in Surabaya. Likelihood Ratio (LR) is a substitute for *F-statistics* and serves to test the independent variables simultaneously resulting in that simultaneously the independent variables has significant effect on the technical efficiency of MSMEs fashion who have offline stores, this is evidenced by a p-value of less than 0.05 (0.000).

**Table 6.** Estimated Maximum Likelihood Tobit Regression MSMEs fashion Offline

Variable	Code	dy/dx	Standard Deviation	Z-Statistic	Probability
Constant	C	0.3008	0.1417	2.12	0.037
Lenght of business	X <sub>1</sub>	0.0160	0.0046	3.42	0.001
Number of offline store	X <sub>2</sub>	0.1366	0.0499	2.73	0.006
Number of workers	X <sub>3</sub>	0.0110	0.0480	0.23	0.818
Credit capital	X <sub>4</sub>	0.0508	0.0606	0.84	0.402
LR				24.74	0.000
Log Likelihood				-0.719	0.005

The results show that only 2 variables significantly affect the technical efficiency of MSMEs fashion have offline stores, namely leght of business and number of offline stores. Accordance to Suminah et al. (2022) Nittayakamolphun (2020) and Vijayanti and Yasa (2017) and it is explained that the longer the business experience of the business owner, business owner knowledge's will also increase about the business he is doing and will have an impact on increasing customers, with this increase, business income will also increase and significantly indirectly will improve the technical efficiency of a business. Moreover, number of offline stores has significant and positive effect on technical efficiency of MSMEs fashion have offline store because increasing the number of stores, also make market share of the business increase. In addition, it will also improve business branding, so that it will affect the increase in consumer confidence in the store. In accordance with research conducted by Rahman (2019) and Nugraheni and Septiarini (2017) which states with branch offices has significant and positive effect on business's profitability.

Meanwhile, the variable number of workers and capital credit does not significantly affect technical efficiency. Number of workers has no significant effect because as in the theory of the Law of Diminishing Return proposed by Ricardo (1891) that when one input is added continuously but the other inputs remain, then the additional output generated will initially increase, but at a certain point there will be a decrease in the increase in output. These results are in accordance with Hidayat (2013) research, the of workers's number has no significant effect on MSMEs production's in Pekalongan City, this is due to the high burden of labor costs while the turnover has not yet reached optimal (Permatasari and Setyawan, 2019). Suminah et al. (2022) and Rita (2004) states that there is no difference in income between small and medium enterprises that use credit and those that do not. The results of another study conducted by Sudaryanti (2017) that the use of capital from cooperatives and banks will increase the operational burden derived from the interest on the loan funds.

#### **Determinants of the Technical Efficiency of MSMEs Fashion (Offline and Online Stores)**

The results of the Tobit regression on the determinants of the technical efficiency of MSMEs fashion that have offline and online stores is Likelihood Ratio (LR) is a substitute for F-statistics and serves to test the independent variables simultaneously resulting in that simultaneously the independent variables have a

significant effect on the technical efficiency of MSMEs fashion have offline stores, this is evidenced by a p-value of less than 0.05 (0.000).

**Table 7.** Estimated Maximum Likelihood Tobit Regression MSMEs fashion Offline and Online

Variable	Code	dy/dx	Standard Deviation	Z-Statistic	Probability
Constant	C	0.5867	0.0696	8.43	0.000
Lenght of business	X	-0.0079	0.0057	-1.37	0.171
Number of offline store	X	0.0071	0.0461	0.15	0.877
Number of online store	X	0.1346	0.0385	3.49	0.000
Number of workers	X	-0.1762	0.0424	-0.42	0.678
Credit capital	X	0.1798	0.0564	3.19	0.001
LR				31.93	0.000
Log Likelihood				-6.82	0.001

The results of the tobit regression analysis show the number of online store and capital credit has significant positive effect on the technical efficiency of MSMEs fashion that have offline and online stores. According to Cenamore (2021), Dwivedi et al. (2021), and Kartiwi (2018) the use of digital marketing can increase sales volume and increase business income. In this case the number of online stores will also expand the market and increase branding in the business. In addition, the market is currently competing to attract consumers by holding various promotions provided by the market, so opening stores in various markets will increase sales business opportunities which will have an impact on technical efficiency. While other variables that affect the efficiency MSMEs fashion offline and online is capital credit. These results indicate that the use of credit has a positive and significant effect on technical efficiency. In accordance with the research of Purmiyati et al. (2019) and Riawan and Kusnawan (2018) which states that loan capital (KUR) has a significant positive effect on MSMEs income. In addition, another study conducted by Sujarweni and Utami (2015) found that when business owners get business capital sourced from credit, it will provide more morale because they understand that there is an interest burden that must be paid every month, with enthusiasm for work. which continues to be increased, the business omzet obtained will also increase. Credit is also proven to support the survival of the company (Charfeddine and Zaouali, 2022).

There are 3 variables that have no effect on MSMEs fashion offline and online in Surabaya are lenght of business, number of offline store, and number of workers. Length of business variable has no significant effect on the technical efficiency of offline and online apparel trading businesses. This is because even though the business does not have enough experience, it can have knowledge about things in running a business by observing and imitating successful businesses. In addition, at this time there are many market places that hold many promos such as free shipping, cashback, discounts, etc (Tran, 2021). So diligently following the promos provided by the market place will be a good provision for the success of his business. In line with Nainggolan (2016) which results in length of business does

not affect turnover, because the length of a business is not used as an experience for business owners to develop their business and productivity.

Variable Number of offline stores has no significant effect on the technical efficiency of MSMEs fashion offline and online in Surabaya. This result is because even though it has many business stores, if it is not managed optimally it will actually cause a burden on business income such as the increase in labor costs, operational capital and overall capital which are higher in number with the turnover obtained so that it will lead to low technical efficiency values (Permatasari & Setyawan, 2019). In addition to the efficient offline and online apparel trading business, on average business owners rely on online stores because they have a wider market share (Dwivedi et al., 2021; Dolega et al., 2021; Verhoef and Bijmolt, 2019). Then, variable number of workers has no significant effect on the technical efficiency of MSMEs fashion offline and online in Surabaya because when the amount of labor is added while other variables are constant, initially it will cause an increase in output but if the labor variable continues to be added to a certain point then the additional output produced will decrease, the reason is in accordance with the Law of Diminishing Return which put forward by David Ricardo (1772-1823). In accordance with research Sulisty and Ediwijoyo (2020) which results that labor has no significant effect on the income level of precarious industry players in Kebumen Regency. This is due to the high burden of labor costs while the turnover has not yet reached optimal (Permatasari and Setyawan, 2019).

## CONCLUSION

Based on the results of the analyzing technical efficiency of MSMEs fashion offline with offline and online in Surabaya, MSMEs fashion offline have an average technical efficiency value is 65% and there are 10 businesses technically efficient, while MSMEs fashion offline and online have an higher average technical efficiency level by 77.1% and there are 26 businesses technically efficient. There is a difference in the average technical efficiency of MSMEs fashion offline with offline and online. Which is MSMEs fashion offline and online have higher performance than MSMEs fashion offline. The factors that affect the technical efficiency of MSMEs fashion offline in Surabaya are the length of business and the number of store, but the number of workers and credit capital variables do not have a significant effect. Meanwhile, the factors that affect the technical efficiency of the MSMEs fashion offline and online in Surabaya are the number of online stores and credit capital. MSMEs fashion actors can increase their business by expanding marketing by utilizing IT developments like online marketing. MSMEs fashion actors can also reduce labor costs and overhead costs to achieve efficiency levels. In addition, this research is expected to help the government through the Departement of Cooperatives and Small Medium Enterprises (SMEs) to provide assistance and training to MSMEs of fashion actors to using information and communication technology to reach technical efficiency.

## REFERENCES

- Cenamor, J., Parida, V., & Wincent, J. (2019). How entrepreneurial SMEs compete through digital platforms: The roles of digital platform capability, network capability and ambidexterity. *Journal of Business Research*, 100, 196-206.



- Badan Perencanaan Pembangunan Nasional. (2020). *Kajian kebijakan penanggulangan dampak Covid-19 terhadap UMKM*. Jakarta: Badan Perencanaan Pembangunan Nasional.
- Badan Pusat Statistik. (2016). *Sensus Usaha/Registrasi Usaha Tahun 2016*. Jakarta: Badan Pusat Statistik.
- Badan Pusat Statistik. (2016). *Tabel Klasifikasi Usaha Mikro Kecil dan Menengah Tahun 1997-2003*. Jakarta: Badan Pusat Statistik.
- Badan Pusat Statistik. (2016). *Statistik Usaha Pemasaran Online Tahun 2019*. Jakarta: Badan Pusat Statistik.
- Badan Pusat Statistik. (2016). *Survei Aktivitas Usaha Selama Pandemi Covid-19*. Jakarta: Badan Pusat Statistik.
- Badan Pusat Statistik. (2016). *PDRB Harga Konstan Kota Surabaya Tahun 2010-2021*. Jakarta: Badan Pusat Statistik.
- Charfeddine, L., & Zaouali, S. (2022). The effects of financial inclusion and the business environment in spurring the creation of early-stage firms and supporting established firms. *Journal of Business Research*, 143, 1-15.
- Coelli, T. J., Rao, D. S. P., O'Donnell, C. J., & Battese, G. E. (2005). *An Introduction To Efficiency And Productivity Analysis*. Switzerland AG: springer science & business media.
- Dolega, L., Rowe, F., & Branagan, E. (2021). Going digital? The impact of social media marketing on retail website traffic, orders and sales. *Journal of Retailing and Consumer Services*, 60, 102501.
- Dwivedi, Y. K., Ismagilova, E., Hughes, D. L., Carlson, J., Filieri, R., Jacobson, J., & Wang, Y. (2021). Setting the future of digital and social media marketing research: Perspectives and research propositions. *International Journal of Information Management*, 59, 102168.
- Erdin, C., & Ozkaya, G. (2020). Contribution of small and medium enterprises to economic development and quality of life in Turkey. *Heliyon*, 6(2), e03215.
- Ghalib, H., & Setiawan, A. H. (2019). Analisis Perbedaan Sebelum dan Setelah Penggunaan Sosial Media untuk Kegiatan Peningkatan Usaha Makanan di Kota Semarang. *Jurnal Ekonomi Diponegoro*, 1(1), 1-9.
- Hidayat, A. (2013). *Analisis Efisiensi Penggunaan Faktor Produksi Pada Usaha Kecil Menengah Batik di Desa Kauman Kota Pekalongan*. (Disertasi Doktor, Universitas Negeri Semarang) akses dari lib.unnes.ac.id/18037/
- Ishak, Riza Fathoni., & Somadi, S. (2019). Analisis Efisiensi Industri Kreatif Unggulan Kota Bandung Dengan Pendekatan Data Envelopment Analysis : Analisis Efisiensi Industri Kreatif Unggulan Kota Bandung Dengan Pendekatan Data Envelopment Analysis. *Kompetitif*, 14(1), 1-13.
- Kartiwi, M., Hussin, H., Suhaimi, M. A., Jalaldeen, M. R. M., & Amin, M. R. (2018). Impact of external factors on determining e-commerce benefits among SMEs in Malaysia. *Journal of Global Entrepreneurship Research*, 8(1), 1-12.
- Kementerian Koperasi dan Usaha Kecil Menengah. (2019). *Perkembangan Data Usaha Mikro Kecil Menengah (UMKM) dan Usaha Besar Tahun 2018 – 2019*. Jakarta: Kementerian Koperasi dan Usaha Kecil Menengah.
- Kementerian Perindustrian Republik Indonesia. (2019). *Melampaui 18 Persen, Industri Tekstil dan Pakaian Jadi Tumbuh Tertinggi*. <https://bdisurabaya.kemenperin.go.id/> (diakses pada 7 September 2022).

- Khurana, S., Haleem, A., Luthra, S., & Mannan, B. (2021). Evaluating critical factors to implement sustainable oriented innovation practices: An analysis of micro, small, and medium manufacturing enterprises. *Journal of Cleaner Production*, 285, 125377.
- Levy, P.S., & Lemeshow, S. (1997). *Sampling of Populations: Methods and Applications*, 3rd ed. New York: Wiley-Interscience.
- Lukiyanto, K., & Wijayaningtyas, M. (2020). Gotong Royong as social capital to overcome micro and small enterprises' capital difficulties. *Heliyon*, 6(9), e04879.
- Manzoor, F., Wei, L., & Siraj, M. (2021). Small and medium-sized enterprises and economic growth in Pakistan: An ARDL bounds cointegration approach. *Heliyon*, 7(2), e06340.
- Melovic, B., Sehic, D., Karadzic, V., Dabic, M., & Cirovic, D. (2021). Determinants of Millennials' behavior in online shopping—Implications on consumers' satisfaction and e-business development. *Technology in society*, 65, 101561.
- Nainggolan, R. (2016). Jenis kelamin, tingkat pendidikan dan lama usaha sebagai penentu pendapatan bagi UMKM di Surabaya. *Kinerja*, 20(1), 1-12.
- Nittayakamolpun, P. (2020). Factors Affecting Technical Efficiency of Textiles Community Enterprises in Chaloeam Phra Kiat and Na Pho Districts, Buriram Province, Thailand. *Journal of Community Development Research (Humanities and Social Sciences)*, 13(2), 70-82.
- Nugraheni, A.U., & Septiarini, D.F. (2017). Pengaruh Tingkat Ekuivalen, Profitabilitas, dan Jumlah Kantor Terhadap Dana Pihak Ketiga BPRS di Indonesia (2013-2015). *Jurnal ekonomi syariah teori dan terapan*, 4(11), 875-888.
- Parvin, M., Asimiran, S. B., & Ayub, A. F. B. M. (2021). Impact of introducing e-commerce on small and medium enterprises—a case on logistics provider. *Society and Business Review*.
- Pathirana, S., & Yarime, M. (2018). Introducing energy efficient technologies in small-and medium-sized enterprises in the apparel industry: A case study of Sri Lanka. *Journal of Cleaner Production*, 178, 247-257.
- Permatasari, M.F., & Setyawan, A.A. (2019). Pengukuran Efisiensi Kinerja UMKM menggunakan Metode Data Envelopment Analysis (DEA). *Prosiding Seminar Bisnis Magister Manajemen (SAMBIS) 2019*. 118-131.
- Purmiyati, A., Berma, M., Talib, B. A., & Rakhima, M. S. (2019). The role of banking capital in industrial sector micro enterprises for poverty alleviation: A study in east java, indonesia. *Foundations of Management*, 11(1), 131-142.
- Putra, P. O. H., & Santoso, H. B. (2020). Contextual factors and performance impact of e-business use in Indonesian small and medium enterprises (SMEs). *Heliyon*, 6(3), e03568.
- Rahman, M.A. (2019). Pengaruh Intellectual Capital, Jumlah Kantor Cabang, Kecukupan Modal, Non Performing Financing, Likuiditas, Efisiensi Operasional Terhadap Profitabilitas Bank Umum Syariah (Skripsi, Fakultas Ekonomi dan Bisnis UIN Jakarta) diakses dari <http://repository.uinjkt.ac.id/dspace/handle/123456789/47902>

- Reim, W., Yli-Viitala, P., Arrasvuori, J., & Parida, V. (2022). Tackling business model challenges in SME internationalization through digitalization. *Journal of Innovation & Knowledge*, 7(3), 100199.
- Reinartz, W., Wiegand, N., & Imschloss, M. (2019). The impact of digital transformation on the retailing value chain. *International Journal of Research in Marketing*, 36(3), 350-366.
- Riawan, R., & Kusnawan, W. (2018). Pengaruh Modal Sendiri dan Kredit Usaha Rakyat (KUR) Terhadap Pendapatan Usaha (Studi Pada UMKM di Desa Platihan Selatan Kecamatan Siman). *Jurnal Akuntansi dan Pajak*, 19(1), 31-37.
- Ricardo, D. (1891). *On the Principles of political economy and taxation*. Canada: Batoche Books.
- Rita, S. (2004). Analisis Pengaruh Pemberian Kredit Terhadap Peningkatan Pendapatan Usaha Kecil Menengah: Studi Kasus PT. BPR Laksana Abadi Sunggal Medan. (Skripsi, Fakultas Ekonomi Universitas Sumatera Utara).
- Shan, H., Li, Y., Shi, J., & Yao, C. (2020). Market Structure, Technical Efficiency and Performance: An Empirical Study of E-commerce in China. *In Proceedings of the 2020 4th International Conference on Management Engineering, Software Engineering and Service Sciences*, 101-106.
- Singh, R., Chandrashekar, D., Hillemane, B. S. M., Sukumar, A., & Jafari-Sadeghi, V. (2022). Network cooperation and economic performance of SMEs: Direct and mediating impacts of innovation and internationalisation. *Journal of Business Research*, 148, 116-130.
- Sudaryanti, D.S. (2017). Pengaruh Jumlah Anggota, Modal Eksternal, dan Total Aktiva Terhadap Sisa Hasil Usaha (Studi Empiris Pada Koperasi Simpan Pinjam Di Kota Tasikmalaya Tahun 2016). *Ekspektra: Jurnal Bisnis dan Manajemen*, 1(2), 156-172.
- Sujarweni, V. W., & Utami, L. R. (2015). Analisis Dampak Pembiayaan Dana Bergulir Kredit Usaha Rakyat (Kredit Usaha Rakyat) Terhadap Kinerja UMKM (Studi Kasus Di Daerah Istimewa Yogyakarta). *Jurnal Bisnis dan Ekonomi*, 22(1).
- Sulistyo, I.N.A., & Ediwijoyo, S.P. (2020). Analisis Kepuasan Masyarakat Terhadap Pelayanan Publik Berdasarkan Indeks Kepuasan Masyarakat Pada Kantor Kecamatan Ayah Kabupaten Kebumen. *Jurnal E-Bis (Ekonomi-Bisnis)*, 4(2), 276-286.
- Suminah, S., Suwanto, S., Sugihardjo, S., Anantanyu, S., & Padmaningrum, D. (2022). Determinants of Micro, Small, And Medium Enterprise performers' income during the Covid-19 pandemic era. *Heliyon*, 8(7), e09875.
- Susanto, W.K. (2018). Pengaruh Social Network Marketing (SNM) dan Electronic Word of Mouth (EWOM) Terhadap Minat Beli Pelanggan. *Jurnal Manajemen Bisnis dan Kewirausahaan*, 2(6), 68-73.
- Swasono, Y., & Sulistyaningsih, E. (1993). *Pengembangan sumber daya manusia: konsepsi makro untuk implementasi di Indonesia*. Jakarta: Izufa Gempita.
- Tran, L. T. T. (2021). Managing the effectiveness of e-commerce platforms in a pandemic. *Journal of Retailing and Consumer Services*, 58, 102287.
- Ulas, D. (2019). Digital transformation process and SMEs. *Procedia Computer Science*, 158, 662-671.

- Verhoef, P. C., & Bijmolt, T. H. (2019). Marketing perspectives on digital business models: A framework and overview of the special issue. *International Journal of Research in Marketing*, 36(3), 341-349.
- Vijayanti, M. D., & Yasa, I. G. W. M. (2017). The effect of length of business and capital on income and business efficiency of basic food traders in the Kumbasari market. *E-Jurnal Ekonomi Pembangunan Universitas Udayana*, 5(12), 165217.
- Wu, A., Song, D., & Liu, Y. (2022). Platform synergy and innovation speed of SMEs: The roles of organizational design and regional environment. *Journal of Business Research*, 149, 38-53.

# Technical Efficiency Analysis of MSMEs Fashion Offline and Online in Surabaya

## ORIGINALITY REPORT

17%

SIMILARITY INDEX

15%

INTERNET SOURCES

11%

PUBLICATIONS

0%

STUDENT PAPERS

## PRIMARY SOURCES

1	<a href="http://www.ecojoin.org">www.ecojoin.org</a> Internet Source	2%
2	<a href="http://journal.um.ac.id">journal.um.ac.id</a> Internet Source	2%
3	<a href="http://www.journal.nu.ac.th">www.journal.nu.ac.th</a> Internet Source	1%
4	<a href="http://link.springer.com">link.springer.com</a> Internet Source	1%
5	"The International Conference on ASEAN 2019", Walter de Gruyter GmbH, 2019 Publication	1%
6	<a href="http://repository.umi.ac.id">repository.umi.ac.id</a> Internet Source	1%
7	Devi Asiati, Ngadi Ngadi, Yulinda Nurul Aini, Yanti Astrelina Purba. "chapter 24 Sustainability of MSMEs in Indonesia", IGI Global, 2021 Publication	<1%



8	<a href="https://www.article.sciencepublishinggroup.com">article.sciencepublishinggroup.com</a> Internet Source	<1 %
9	<a href="https://ir.msu.ac.zw:8080">ir.msu.ac.zw:8080</a> Internet Source	<1 %
10	<a href="https://www.researchgate.net">www.researchgate.net</a> Internet Source	<1 %
11	<a href="https://j.ideasspread.org">j.ideasspread.org</a> Internet Source	<1 %
12	<a href="https://repository.ipb.ac.id">repository.ipb.ac.id</a> Internet Source	<1 %
13	<a href="https://eprints.undip.ac.id">eprints.undip.ac.id</a> Internet Source	<1 %
14	<a href="https://media.neliti.com">media.neliti.com</a> Internet Source	<1 %
15	<a href="https://www.atlantis-press.com">www.atlantis-press.com</a> Internet Source	<1 %
16	<a href="https://koreascience.or.kr">koreascience.or.kr</a> Internet Source	<1 %
17	Adi Poernomo, Lilis Sitibadriah, Diah Setyorini Gunawan, Suharno. "Impact Of The Implementation Of Strategic Cultivars On Traditional Cultivars In The Technical Efficiency Of Farmers And Welfare (The Case Of Strawberry Crop Farming In Serang	<1 %

Village)", IOP Conference Series: Earth and Environmental Science, 2019

Publication

18

Farhad Taghizadeh-Hesary, Han Phoumin, Ehsan Rasoulinezhad. "COVID-19 and regional solutions for mitigating the risk of SME finance in selected ASEAN member states", Economic Analysis and Policy, 2022

Publication

<1 %

19

[journals.sagepub.com](https://journals.sagepub.com)

Internet Source

<1 %

20

[ijrrjournal.com](https://ijrrjournal.com)

Internet Source

<1 %

21

[knepublishing.com](https://knepublishing.com)

Internet Source

<1 %

22

Miao Wang, M. C. Sunny Wong. "International R&D Transfer and Technical Efficiency: Evidence from Panel Study Using Stochastic Frontier Analysis", World Development, 2012

Publication

<1 %

23

[e-journal.unair.ac.id](https://e-journal.unair.ac.id)

Internet Source

<1 %

24

[eprints.utm.my](https://eprints.utm.my)

Internet Source

<1 %

25

[www.ejbmr.org](https://www.ejbmr.org)

Internet Source

<1 %

26	International Journal of Energy Sector Management, Volume 7, Issue 1 (2013-05-27) Publication	<1 %
27	<a href="http://ojs.poltekkes-malang.ac.id">ojs.poltekkes-malang.ac.id</a> Internet Source	<1 %
28	<a href="http://ojs.uma.ac.id">ojs.uma.ac.id</a> Internet Source	<1 %
29	<a href="http://repository.tudelft.nl">repository.tudelft.nl</a> Internet Source	<1 %
30	Bayu Arie Fianto, Christopher Gan, Baiding Hu, Jamal Roudaki. "Equity financing and debt-based financing: Evidence from Islamic microfinance institutions in Indonesia", Pacific-Basin Finance Journal, 2017 Publication	<1 %
31	Raíssa Souto Maior Corrêa de Carvalho, Denise Dumke de Medeiros. "A methodology for assessing the main difficulties faced by SMEs in implementing ISO 9001:2015 requirements", Total Quality Management & Business Excellence, 2021 Publication	<1 %
32	<a href="http://pkm.uika-bogor.ac.id">pkm.uika-bogor.ac.id</a> Internet Source	<1 %
33	<a href="http://pt.scribd.com">pt.scribd.com</a> Internet Source	<1 %

34

publikasi.dinus.ac.id

Internet Source

<1 %

35

www.emerald.com

Internet Source

<1 %

36

2dc40e33-085f-40e0-8172-9a1f898c1942.filesusr.com

Internet Source

<1 %

37

Kelemu Kaleb, Negatu Workneh. "Analysis of levels and determinants of technical efficiency of wheat producing farmers in Ethiopia", African Journal of Agricultural Research, 2016

Publication

<1 %

38

Muhammad Naeem, Wilson Ozuem. "The role of social media in internet banking transition during COVID-19 pandemic: Using multiple methods and sources in qualitative research", Journal of Retailing and Consumer Services, 2021

Publication

<1 %

39

N Z Wahdania, S A Mustaniroh, I Santoso, I Purwaningsih. "Clustering of potato chips SMEs in Batu City, Indonesia", IOP Conference Series: Earth and Environmental Science, 2021

Publication

<1 %

40

Rini Astuti, Ela Suryani. "THE EFFECT OF COOPERATIVE SCRIPT LEARNING MODEL ASSISTED BY FLASHCARD IMAGE MEDIA ON

<1 %

THE ABILITY TO UNDERSTAND NATURAL SCIENCE (IPA) CONCEPT OF STUDENTS IN CLASS IV ELEMENTARY SCHOOL", JURNAL PENDIDIKAN DASAR NUSANTARA, 2022

Publication

41

Vangelis Tzouvelekas, Christos J. Pantzios, Christos Fotopoulos. "Measuring multiple and single factor technical efficiency in organic farming", British Food Journal, 2002

Publication

<1 %

42

[jurnal.ar-raniry.ac.id](http://jurnal.ar-raniry.ac.id)

Internet Source

<1 %

43

[pure.rug.nl](http://pure.rug.nl)

Internet Source

<1 %

44

[www.mdpi.com](http://www.mdpi.com)

Internet Source

<1 %

45

Masoud Moradi, Mayukh Dass. "Applications of artificial intelligence in B2B marketing: Challenges and future directions", Industrial Marketing Management, 2022

Publication

<1 %

46

Suminah Suminah, Suwanto Suwanto, Sugihardjo Sugihardjo, Sapja Anantanyu, Dwiningtyas Padmaningrum. "Determinants of micro, small, and medium-scale enterprise performers' income during the Covid-19 pandemic era", Heliyon, 2022

Publication

<1 %



---

47	<a href="https://discovery.researcher.life">discovery.researcher.life</a> Internet Source	<1 %
48	<a href="https://docs.neu.edu.tr">docs.neu.edu.tr</a> Internet Source	<1 %
49	<a href="https://ekbang.unpar.ac.id">ekbang.unpar.ac.id</a> Internet Source	<1 %
50	<a href="https://etd.uum.edu.my">etd.uum.edu.my</a> Internet Source	<1 %
51	<a href="https://hdl.handle.net">hdl.handle.net</a> Internet Source	<1 %
52	<a href="https://jp.feb.unsoed.ac.id">jp.feb.unsoed.ac.id</a> Internet Source	<1 %
53	<a href="https://philpapers.org">philpapers.org</a> Internet Source	<1 %
54	Manal Y. Alduaij, Mariam A. Alterkait. "Exploring Contextual Factors of User E-Commerce Adoption During Coronavirus", International Journal of Technology Diffusion, 2022 Publication	<1 %
55	Tika Widiastuti, Ilmiawan Auwalin, Lina Nugraha Rani, Muhammad Ubaidillah Al Mustofa. " A mediating effect of business growth on zakat empowerment program and	<1 %

---

welfare ", Cogent Business & Management,  
2021

Publication

56

journal.ipb.ac.id

Internet Source

<1 %

57

Apostolos Ampountolas. "Postcrisis REIT performance using financial ratios: A DEA approach", Tourism Economics, 2020

Publication

<1 %

58

Xiaofei Wang, Lei Chen, Chuangeng Liu, Yiqing Zhang, Ke Li. "Optimal production efficiency of Chinese coal enterprises under the background of de-capacity—Investigation on the data of coal enterprises in Shandong Province", Journal of Cleaner Production, 2019

Publication

<1 %

Exclude quotes On

Exclude matches Off

Exclude bibliography On

# Technical Efficiency Analysis of MSMEs Fashion Offline and Online in Surabaya

---

GRADEMARK REPORT

---

FINAL GRADE

**/0**

GENERAL COMMENTS

**Instructor**

---

PAGE 1

---

PAGE 2

---

PAGE 3

---

PAGE 4

---

PAGE 5

---

PAGE 6

---

PAGE 7

---

PAGE 8

---

PAGE 9

---

PAGE 10

---

PAGE 11

---

PAGE 12

---

PAGE 13

---

PAGE 14

---

PAGE 15

---

PAGE 16

---