The impact of COVID-19 on the performance of food clusters MSMEs in Surabaya

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Abstract. Based on the results of the Inter-Census Agricultural Survey (SUTAS) in 2018 and the Economic Census (SE) in 2016 was done by the East Java Provincial Government, the City of Surabaya had 385,054 MSMEs. However, Surabaya’s current condition was bad because until 17 May 2020 the number of people infected by COVID-19 in Surabaya was 1035 patients of supervision and 3190 people under monitoring (ODP), with 110 people who died as a result of this pandemic and 130 people had recovered from COVID-19. A large number of patients infected by COVID-19 in Surabaya may be an impact on the condition of Food Clusters MSMEs in Surabaya. This research aims to determine the impact of COVID-19 on the performance of food clusters MSMEs in Surabaya. This research method is descriptive, namely research that describes a situation without any treatment of the object under study. The result, that COVID-19 has any impact on the performance of food clusters MSMEs in Surabaya such as difficulties in accessing raw materials, decreasing production levels (including production costs), individual capital difficulties, marketing difficulties (including transportation costs), administrative procedures, and training become unsustainable.

1. Background
In 2020 had been a tragedy that rocked various sectors in many countries. Until 16 May 2020, there were 4,720,196 people in the world infected by COVID-19, 313,220 died and 1,811,674 have recovered from the coronavirus [1].

Not only cause death, but this virus also resulted in economic losses of up to the US $ 9 Trillion in the world. In the year, aviation revenue’s potential has been lost around $ 314 Million, and 50 million people will lose their jobs in the tourism sector.

Moody’s Investor Service has predicted that Indonesia’s economic growth in 2020 will be a slowdown at 4.8% of Gross Domestic Product (GDP). This value s below the growth in 2019 which was at 5.02%. This economic slowdown was expected continue until 2021 even though it accompanied by a slight strengthening, namely growing by only 4.9% [2].

The impact of COVID-19 was also felt by the MSMEs sector in Indonesia. This occurred because of reduced global exports in February which were recorded at $ 50 million and the shrinkage of the tourism sector around 25% in 2020 due to the implementation of lockdown in the regions. Decreased in the tourism sector is one of the causes of reduced productivity at MSMEs. Because the majority of MSME’s products were very dependent on the tourism sector.

This MSMEs sector gave a big contributed to Indonesia's GRDP, reaching 60% with large workforce absorption until 97.02% in 2017. In fact, around 98.7% of the business sector in Indonesia included in the MSMEs category, most of which were informal businesses. The MSMEs sector also absorbed large number of workers [3]. The large potential of MSMEs became the driving force and
survival when Indonesia’s economy was not healthy. The reason because MSMEs produce consumer goods and services that closed to the community’s needs, used the local resources, and weren’t supported by banking funds, but their own capital [4]. However, due to the pandemic, many MSMEs sectors had negative affect.

Based on research that had been done by the Indonesian Institute of Sciences (LIPI), one of those affected by Covid-19 after the tourism sector was MSMEs, especially the food and beverage business unit. As much as 27% of food clusters MSMEs and 17.03% in handicrafts made of wood and rattan. Meanwhile, the total losses from the tourism sector reached the US $ 2 billion with decreasing aircraft growth of 0.013%, accommodation service by 0.008%, and food by 0.006% [5]. Meanwhile, based on KemenkopUKM (The Ministry of Cooperative and SMEs of The Republic of Indonesia), around 37,000 MSMEs were affected by COVID-19 with decreasing sales (56% reported), 22% reported problems in the financing aspect, 15% reported problems with distribution of goods, and 4% reported difficulties in obtaining raw materials [6].

Indonesia’s economic growth in the first quarter of 2020 was only 2.97% and became the lowest growth for the last 19 years. This condition influenced the economic decline in the MSMEs sector, for instance in East Java. The condition of MSMEs in East Java (52 business actors studied) were known to have decreased incomes and business actors felt unable to survive in this pandemic, such as several MSMEs in areas that were closed and died [7]. The tables and graphs below show that there were 9 MSMEs business units affected by COVID in East Java.

![Figure 1. MSME business units affected by COVID in East Java](image)

Similar to East Java, the economy in Surabaya had been affected by COVID-19, even though the city has many creative MSMEs. Based on the results of the Inter-Census Agricultural Survey (SUTAS) in 2018 and the Economic Census (SE) in 2016 were done by the East Java Provincial Government, Surabaya City had 385,054 MSMEs [8]. However, the Surabayas’s condition was down because until 17 May 2020, the number of people were infected by COVID-19 was 1035 patients under supervision and 3190 people under monitoring (ODP), with 110 people who died as a result of this pandemic and those who declared cured were 130 people [9]. The large number of patients infected from COVID-19 in Surabaya City will likely also have impact on the condition of MSMEs in Surabaya City.

The Mayor of Surabaya, Tri Rismaharini, explained that COVID-19 had given impact on the Surabaya economy, especially on micro, small and medium enterprises (MSMEs) such as the food cluster MSMEs, then the service sector, likely hotels, and restaurants. However, there were still some MSMEs that continued to exist during this pandemic, this was because MSMEs in Surabaya were invited to collaborate with the City Government in resolved the Covid-19 pandemic [10]. During the pandemic, MSMEs in Surabaya City were invited to collaborate starting from made masks, personal protective equipment (PPE) such as hazmat suits and face shields, to process food products then distributed for affected residents by COVID-19 [11].

Although several MSMEs still existed in the pandemic, it was undeniable that MSMEs have decreased because COVID-19 such as MSMEs Wiyung, there was a significant positive impact on
decreasing income because enforced LSSR (Large-scale Social Restrictions) in Surabaya City [12]. Therefore, it was necessary to research the impact of COVID-19 on MSMEs in Surabaya City, especially in MSMEs food and beverage cluster.

2. Method of Research

2.1 Approach of Research
The approach used in this research is the rationalism approach. A rationalism approach that held ratio is the source of all truth (Endro, 2010). In other words, the knowledge built from the results of sensory observation supported by a theoretical basis and thought process.

This research began with study of the theory of economic development through the development of MSMEs food and beverage cluster and then this theory will be explained until determine what impacts and risks in MSMEs food and beverage cluster, especially in the city of Surabaya.

2.2 Types of Research
This research type was quantitative research. Quantitative research method is research that involves taking statistical data so that calculations and interpretations can be carried out which can be presented in the form of graphs, diagrams, tables and hypothesis testing.

This research approach used to achieve the objectives of the research as follows:
1. Mapping the food clusters MSMEs in Surabaya City
2. Identifying the impact of COVID-19 on the development of MSMEs food and beverage cluster in Surabaya City

2.3 Variable of Research
In the development of variables, researchers were collect and describ all case studies/phenomena that occurred because of COVID-19 and gave an impact on MSMEs businesses in Indonesia and other countries. From several articles, researchers were develop variables that influence in assessing the impact of Covid-19 on MSMEs. From these variables, the researchers will make a questionnaire on the impact of Covid-19 on MSMEs food and beverage cluster. Following are the variables of the impact of Covid-19 on the performance of food clusters.
1) Workers / HR
2) Convenience of raw materials
3) Production
4) Capital
5) Technology
6) Marketing
7) Administrative Procedures
8) Education and Training

2.4 Sample of Research
Determination of the sample in the study used the slovin method with a purposive sampling approach, where the sample was adjusted to certain criteria based on the research objectives. Here are the calculations;

The population of MSMEs in Surabaya is 378 businesses.

$$n = \frac{378}{1 + (0.15)^2 \cdot 378}$$

$$n = \frac{378}{9,505}$$

$$n = 40$$
Distribution of food cluster samples

\[
\text{Food and beverage cluster} = \frac{168}{370} \times 40 - 18 \text{ sampel}
\]

3. Analysis and Study

3.1 The Mapping of MSMEs Food and Beverage Cluster in Surabaya City

The large number of MSMEs in Surabaya couldn’t be separated from the support of the Surabaya’s Government. This was because many MSMEs development based on training from the government, such as training held by the Surabaya City Department of Industry and Trade and Bappenas. Below is the percentage the number of MSMEs at Surabaya City in 2019 based on their clusters.

![Pie chart showing MSME distribution](image)

**Figure 2.** Percentage of MSMEs in the City of Surabaya in 2019 Based on Clusters

*Sumber: Surabaya City Trade and Industry Service, 2019*

Based on the picture above, it known that Surabaya City was dominated by MSMEs food and beverage cluster with 45% of the total number of MSMEs, which was around 168 MSMEs food and beverage cluster. This food clusters MSME had a various variations such as cake processing, seafood cracker processing, herbal medicine production, catering business, and others. The following is the distribution of MSMEs food and beverage clusters at Surabaya City.
### 3.2 Analysis Impact of COVID-19 to MSMEs Food and Beverage Cluster at Surabaya City

After had research about sample of MSMEs food and beverage cluster at Surabaya City, then the surveyors distributed questionnaires. The results of this questionnaire used as material in analyzing how the impact of COVID 19 on the performance of MSMEs food and beverage cluster at Surabaya.

In analyzing the impact of COVID 19 on the enforcement of MSMEs food and beverage cluster at Surabaya used several variables, such as workers / HR, raw materials, production, capital, technology, marketing, administrative procedures as well as education and training. The valuation impact of COVID 19 on the enforcement of MSMEs food and beverage cluster at Surabaya were done by a qualitative descriptive method based on the results of the questionnaire distribution. For more details, here are the results of analysis of impact of COVID 19 on the enforcement MSMEs food and beverage cluster at Surabaya.

Based on the picture above shows that 72% of MSMEs food and beverage cluster at Surabaya City didn’t get impact of COVID-19 on layoffs (Termination of Employment Relationships), 33% of which is because that MSMEs didn’t have workers from outside so the business is managed by family of MSMEs owner. Meanwhile, the other 39% didn’t make layoffs during a pandemic like this.

Behind of above, there are 17% MSMEs food and beverage cluster had layoffs (Termination of Employment). The biggest reason why these MSMEs decided to lay off workers because there was no production process during COVID-19 so there was less income to pay their workers. Interestingly, 6% of them decided to lay off more than 80% of their workers. That decision most taken by MSMEs catering. These MSME almost had production fatality due to restrictions from the government not to gather the masses, so the activities such as celebrations were prohibited. Even though, those activities were the biggest consumers of catering.

#### 3.2.1 Impact of COVID-19 on MSME workers / HR at Surabaya City

The valuation impact of COVID-19 to the workers / HR can be seen from several sub-variables such as layoffs (Termination of Work Relations), reduction of working hours, and reduction of workers salaries. Here are explanations of the impact of SMEs in each sub variables.
a. Layoffs (End of Employment)

![Figure 4](image1.png)

**Figure 4.** Impact COVID-19 against layoffs of food clusters MSMEs at Surabaya

*Source: Results of the survey, 2020*

b. Reduction of working hours

Response of MSMEs under the presence of COVID-19 beside layoffs was reducing working hours for employees. This reduction is closely related to the degree of decline MSMEs production at Surabaya City. Following that, here are big screen employees who had reduction of working hours and the average reduction of working hours per day.

![Figure 5](image2.png)

**Figure 5.** The impact of COVID-19 to the number of workers who had reduced working hours of food clusters MSMEs

*Source: Results of the survey, 2020*

![Figure 6](image3.png)

**Figure 6.** The average reduction of working hours of food clusters MSMEs at Surabaya City

*Source: Results of the survey, 2020*

Based on the picture above, it can be seen that 27% of sample MSMEs food and beverage clusters decided to reduce working hours, 6% of them reduced working hours toward more than 80% of the
total employees. The MSMEs who made that decision it because when there was COVID-19 so they used a shift system for their workers. This impact was experienced by the MSMEs catering. It can also be seen if the worst reduction of working hours is more than 6 hours per day.

![Chart showing employee salary reduction](image)

**Figure 7.** The average reduction of food clusters MSMEs employee salaries at Surabaya City  
*Source: Results of the survey, 2020*

The reduction of working hours to employee will undoubtedly have an impact on salary reduction. This can be seen from that picture above, as many as 33% of sample MSMEs food and beverage cluster reduced their salaries below IDR 500,000. Meanwhile, the other 7% reduced their income from IDR 500,000 to IDR 1,000,000. MSMEs production of herbs medicine has decreased salaries more than IDR 1,500,000.

3.2.2 **Impact of COVID-19 on MSME raw materials in the City of Surabaya**

The valuation impact of COVID-19 on raw materials it can be seen from several sub-variables like access to raw materials and delays in meeting raw materials. The following are the explanations impact to MSMEs in each of the sub-variables.

![Map showing raw material sources](image)

**Figure 8.** Raw materials for MSMEs food and beverage clusters at Surabaya City  
*Source: Results of the survey, 2020*

a. **Access to raw materials**

Raw materials are one of the main factors in developing an MSME, especially in production. In the pandemic like this, each MSME has access different raw materials. Here are the explanations.
Based on the graph above, it is known that as many as 38.90% of sample MSMEs food and beverage cluster found it difficult to access raw materials. There were many reasons why raw materials were difficult to access during the COVID-19 pandemic, such as raw material suppliers closing their businesses and access to markets were also difficult. Even during the early days of the COVID-19 pandemic, there was a shortage of raw materials such as herbs plants and there were many enthusiasts so there was a struggle for raw materials. Difficulties to access raw materials were experienced MSMEs of production herbs medicine and processed durian.

Behind the difficulty to fulfill raw materials, there were 61.1% of MSMEs that feel easy to access their raw materials. Most of these MSMEs already have regular subscriptions so they were easy to fulfill. There were also MSMEs that had strategic locations like the proximity of the house to the market so that access was overly became problem.

b. Delay to fulfill raw materials

The difficulties to access raw materials usually cause delay fulfillment. However, different case happened to MSMEs at Surabaya City. Even though, earlier there were 38.90% of sample MSMEs food and beverage cluster that found it difficult to access raw materials, but all MSMEs were classified not delayed in stocks of raw material. This was because many MSMEs deliberately stocked raw materials. Even though, there were no stocks of raw materials at the Surabaya market, the MSMEs will looking for alternative ways by looking the other markets. Another reason that made the fulfillment of raw materials neutral when there is in pandemic because there were no orders entered so the MSMEs felt there was no influence between raw materials with the pandemic crisis.
3.2.3 The impact of COVID-19 on the production of MSMEs Surabaya City

The valuation impact of COVID-19 on the production of MSMEs it can be seen from several sub-variables such as increase or decrease in the amount of production, increase in production costs, and increase in energy costs. Here are explanations the impact to MSMEs in each sub-variables.

a. Production MSMEs

Based on the chart above, production of 89% sample MSMEs food and beverage cluster at Surabaya City during this pandemic have decreased. The decline in production was due to the lack of demand when there was a LSSR at Surabaya. Initially, there were several MSMEs that produced but none of them bought them, after that they decided not to produce anymore or reduce the amount of production according to their orders.

Interestingly, there were still 6% of sample MSMEs food and beverage cluster at Surabaya City, instead had increasing production. This increase occurred in MSMEs that produce instant herbs medicine (white turmeric, ginger, red ginger) because now people required always to maintain their stamina during avoid the COVID-19 virus. That was reason why production of herbs medicine increased.

Based on the picture above, it can be seen that there were several levels percentage increase and decrease number of MSMEs production. The largest increase from 21% to 40% of the total initial production was experienced by the MSMEs who produced instant herbs medicine (white turmeric, ginger, red ginger). Meanwhile, the largest decrease more than 80% of initial production was experienced by MSME catering businesses.
b. **Production**

Production costs were also one of the determinants the impact of COVID-19 for MSMEs. For more details, regarding the increase or absence of MSME production costs during the COVID-19 pandemic, can be seen in the image below.

![Figure 13. The cost of food clusters MSMEs production in the City of Surabaya](source: Results of the survey, 2020)

Based on the above picture, it can be seen that 33% of sample MSMEs food and beverage cluster did not have increase in production costs and 17.5% of sample MSMEs had increase in production costs less than IDR 500,000. That increase occurred to MSMEs pecel and MSMEs production of herbs medicine. Pecel MSMEs had increase in production costs because during pandemic like this there was often increasing the price of staple foods, while for herbs medicine because the amount of raw materials at the beginning of the pandemic decreasing cause decreasing the price of turmeric curcuma and others herbs.

c. **The increase in energy costs**

Energy is one of the supports in the production process. In MSMEs, the energy used was such as PLN electricity, PDAM, LPG GAS. The following picture is the condition of energy costs during the COVID-19 pandemic.

![Figure 14. Increasing energy costs of food clusters MSMEs at Surabaya City](source: Results of the survey, 2020)

Based on the picture above, it known that 61% of sample MSMEs cluster food and beverage did not have increasing energy costs, while 22% of sample MSMEs cluster had increasing energy costs from 0% to 20% of initial cost.

3.2.4 *The impact of COVID-19 on the capital of MSMEs at Surabaya City*

The valuation impact of COVID-19 on MSMEs capital that can be seen from several sub-variables like access to formal capital, access to non-formal capital, and individual capital.
Based on the picture below, it is known that 83% of sample MSMEs food and beverage clusters managed their business with capital from themselves, 11% of sample MSMEs had source capital from formal capital such as banks, state-owned companies, and 6% of them used non-formal capital to manage their MSMEs such as family loans, lottery club, and others source.

a. Access to formal capital

![Access formal capital graph](image)

1 = Very Difficult, 2 = Difficult, 3 = Neutral, 4 = Easy, 5 = Very Easy

Based on the picture above, it is known that 50% of MSMEs who used formal capital such as banks were classified as neutral, meant there was no influence of COVID-19 on access formal capital. Meanwhile, another 50% MSMEs found it difficult because production fluctuated.

b. Access to informal capital

![Access informal capital graph](image)

1 = Very Difficult, 2 = Difficult, 3 = Neutral, 4 = Easy, 5 = Very Easy
Informal capital loans such as sources individual funds, family, friends, money lenders also had little impact with the COVID-19. As much as 100% from Surabaya City MSMEs neutral to obtain informal loans, meant there was no influence of COVID-19 on access formal capital.

c. Individual capital

Based on previous data, it known that 83% of the MSMEs used source personal capital to develop their MSMEs. In the era of the COVID-19 pandemic, access/level convenience in obtaining personal capital sometimes difficult and sometimes easy. In the picture above, 93.33% of MSMEs owners who used personal capital were classified safe because they were able to manage money during the pandemic. Behind this, there were also MSMEs who found it difficult to obtain their personal capital. There was 6.67% of MSMEs owners who used personal capital found it difficult to get personal capital because there was no income during the COVID-19 pandemic.

3.2.5 Impact of COVID-19 on MSME technology at Surabaya City

The valuation impact of COVID-19 on MSMEs technology that can be seen from several sub-variables such as tools access for MSMEs. There are various types of tools that used MSMEs at Surabaya City. These tools such as blenders, ovens, stoves, beaten eggs, freezers, microwaves for food MSMEs, especially for making cake.

Based on the picture above, it known that MSMEs equipment had 2 types of ownership, namely private property and lease. As many as 94% of sample MSMEs at Surabaya City had production tools which were private ownership and the other 6% made leases. During the COVID-19 pandemic like this, access to production tools has different levels. For more details, see the graph below.
1 = Very Difficult, 2 = Difficult, 3 = Neutral, 4 = Easy, 5 = Very Easy

**Figure 20.** Access production equipment offood clusters MSMEs in Surabaya City

*Source: Results of the survey, 2020*

Based on the graph the following figure 20, it can be seen that all samples of MSMEs in Surabaya City neutral until so easy regarded tools access that supported MSMEs production. This was because the production tools were private, so unrequiredto go far to acquire them.

3.2.6 *The impact of COVID-19 on the marketing of MSMEs at Surabaya City*

In marketing their products, the cluster MSMEs food and beverage in Surabaya City had various ways, like entrusted them to the MSMEs center in White Laidlaw/Town Hall or others hall, also exhibitions, sold directly by the owner, and E-commerce (Shopee, Bukalapak and social media). The impact of COVID-19 on MSMEs can be seen through convenience of marketing. For more details, it can be seen in the image below.

From the graph the following figure 21, it known that during the COVID-19 pandemic, the marketing of MSMEs products tends hardly. As much as 72.22% of sample MSMEs evidenced that marketing in the pandemic era was difficult. This was because decreasing the number of consumers and it caused by the low trust of public / consumers in food from outside home. In addition, the existence of the LSSR policy at Surabaya City also affected the difficulty of marketing.

The impact of COVID-19 on marketing can also be seen in increasing transportation costs when marketing the MSME products. The following is a picture the impact of COVID-19 on increasing transportation costs.
Based on the picture above, it known that 89% of sample MSMEs at Surabaya City evidenced there was no increasing transportation costs. Meanwhile, 11% of sample MSMEs evidenced that the presence of COVID-19 had increasing transportation costs in marketing their products. This was because of the COVID-19 pandemic, MSMEs owners felt unsafe when delivered the orders by themselves, so these owners took action by using delivery services such as Grab or Go-Jek so there were additional transportation costs.

3.2.7 Impact of COVID-19 on MSME administrative procedures at Surabaya City.
In establishing or developing MSMEs, there must be several administrative stages that were taken. For instance, the administrative stages such as licensing to establish MSMEs, halal label, SIUP, etc. Following were the conditions of administrative procedures during the COVID-19 pandemic.

**Administration Conditions**

Based on the graph above, showed that 3.3% of sample MSMEs at Surabaya City felt that there was no influence of COVID-19 due to MSMEs administrative procedures, meant that administrative procedures remained neutral until very easy. On the other hand, there were 16.7% of sample MSME who found it difficult to fulfill administrative procedures during a pandemic like this. This was because the system has moved completely online. Even though, there were some MSMEs owners who weren’t technology savvy so they felt the complexity.

3.2.8 The impact of COVID-19 on education and training for MSMEs at Surabaya City
The MSMEs certainly required an ability or skill to create a product. This training was usually targeted at the workforce managing MSMEs. The percentage of MSMEs that conducted training for their workforce can be seen in the picture below.
Based on the chart following figure 24, it known that 67% of sample MSMEs food and beverage cluster at Surabaya City didn’t conduct training for their workforce, while the rest was 33% of sample MSME said ever held training for the workforce. The training included economic training, cooking training, management training, batik tie dye training from BAPPENAS (The Ministry of National Development Planning of Indonesia), marketing and bookkeeping training from the Cooperative Office, Disperindag (Industry and Trade Service), and Economic Heroes.

However, in the times of pandemics like this there were trainings that were still running and some have stopped like the graph below.

![Chart](image)

**Figure 25.** The Number of food clusters MSMEs Training Continuity during the COVID-19 Pandemic  
*Source: Results of the survey, 2020*

Based on the picture above, it can be seen that 67% of MSMEs that held previous training became off training because the COVID-19 pandemic led to a ban not to crowd and the community was anxious to interact with others so that many trainings were canceled. Meanwhile, 33% of other MSMEs continued to hold training such as online marketing and management training through zooms and attended entrepreneurship webinars.

![Chart](image)

**Figure 26.** Number of food clusters MSMEs Training Additional during the COVID-19 pandemic  
*Source: Results of the survey, 2020*

From the figure 26, it known that 16% of the sample of MSMEs at Surabaya City held additional training for their workers. This additional training was held so MSMEs could adapt to conditions...
during the pandemic. Additional training such as prevention of Covid-19, providing motivation and advice, online training from YouTube during Saturday and Sunday which was shared from the Pahlawan Ekonomi-Group, digital marketing training from Disperindag and the Cooperative Office, and introduction to E-commerce marketing such as Shopee.

4. Conclusion
Surabaya City is dominated by food and beverage MSMEs by 45%, which is around 168 MSMEs. These food and beverage MSME consists of various variations such as cake processing, seafood cracker processing, herbal medicine production, catering business, etc. Based on the results of the analysis, it’s known that COVID-19 has some impact there are ease of access to raw materials, production levels (including production costs), ease of obtaining individual capital, ease of marketing (including transportation costs), administrative procedures and training sustainability for Food and Beverage MSMEs Surabaya City.

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