



# The Impact of Covid 19 on Demand and Supply of MSMEs in Three Regions in Bali

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**Abstract—** This study aims to analyze the implications of the COVID-19 pandemic on the supply and demand shocks and their effect on the performance of MSMEs in Bali's economic structure which is dominated by the tourism sector. This research was conducted in three areas that place the tourism sector as a top priority in its economic development, are: Denpasar City, Badung Regency, and Gianyar Regency. The sample size in this study was 100 MSME units obtained using purposive sampling technique. The results of the study show that the Tourism is a global industrial sector with this restrictive policy having an impact on a significant decrease in demand and implications for a significant decrease in MSME demand. The demand shock occurred significantly in the accommodation and restaurant business sector, followed by the creative industry, and the agriculture, plantation and livestock sectors indicated by a very significant decline in business income. On the other hand, the shocks faced by MSMEs in the three study areas were the increase in material prices. standard, but not very significant.

**Keywords—**MSMEs, demand shock, supply shock, Covid-19

## I. INTRODUCTION

The COVID-19 pandemic has had a significant impact on life and livelihoods. The impact of uncertainty about the evolution of the pandemic leading to a reduction in overall demand for goods and services, not only affects key sectors, it also affects workers in some services who lose their jobs and income, they also reduce purchases of other goods and services [1]. From an economic point of view, the COVID-19 pandemic is referred to as a non-economic event that has a shocking effect on the economy [2]. The economy is in shock from both the supply side and the demand side.

The Covid-19 pandemic has destroyed Bali's economy since the pandemic began to spread in the middle of the first quarter of 2020. As a result, Bali's economic growth was corrected since the first quarter of -1.44 percent (y-o-y) or -7.67 percent (q-to-q). Bali's economic downturn due to the

pandemic is rooted in Bali's dependence on the tourism sector. Data shows that reaching 53.0 percent of Bali's economy is supported by the tourism sector. Speaking of occupancy, the area that lost the largest occupancy was Bali which in 2019 filled 59.57 percent and became 15.62 percent in 2020 or lost 43.95 percent.

Micro, Small and Medium Enterprises (MSMEs) which have a special position in the Indonesian economy are also seriously affected. For this reason, most economists argue that mitigation measures are needed for MSMEs in terms of supply shocks and demand shocks [3]. Community social distancing significantly affect the normal implementation of MSME activities [4]. According to Hoorsen et al., pandemics have a significant negative impact on all areas of business, including supply and demand chains, and distribution channels [5]. This pandemic condition caused 63.9 percent of affected MSMEs to experience a decrease in turnover of more than 30 percent. Only 3.8 percent of MSMEs experienced an increase in turnover. The demand for MSMEs has decreased significantly due to the cessation of several Global Value Chains (GVCs), so MSMEs are facing material and technical difficulties due to labor shortages and transportation disruptions [6].

The impact of COVID-19 is not only on the supply and demand side, but also has an impact on the decline in income. Several facts are also presented based on studies from researchers about the impact of the pandemic on the performance of MSMEs in Indonesia. The condition of MSMEs before COVID-19, as a percentage of good/very good business conditions was 92.7 percent and bad/very bad business conditions 1.0 percent, after covid the bad/very bad business conditions increased by 56.8 percent (previously 1, 0%) [7]. The findings of Xu and Abbasov's research further emphasize that the COVID-19 pandemic has massively affected the existence of small and medium-sized businesses in both supply and demand aspects [8].

Economists are still debating whether the shocks caused by COVID-19 can be treated as demand shocks caused by rising unemployment and falling incomes and people's purchasing power, or supply shocks due to supply chain breaks, industrial shutdowns, and so on [9] [10]. Triggs and Kharas, argue that the COVID-19 shock is not only a demand and supply shock but also a financial shock [11]. Guerrieri et al. shows how the supply shock generated by COVID-19 will subsequently result in a much larger aggregate demand shock than the initial shock [12]. Although there are still differences in the findings of previous research, in general they provide a clear indication that the COVID-19 pandemic has had a very significant impact on the performance of MSMEs.

This study analyzes how supply and demand shocks in various MSME sectors in Bali as the implications of the COVID-19 pandemic in the three most affected areas, namely Denpasar City, Badung Regency, and Gianyar Regency. In these three regions, the economic development of the region is dominant in the tourism sector, so it is important to conduct research to see its impact on the condition of MSMEs. When COVID-19 had a very sharp impact on the development of the tourism sector and made Bali experience the highest economic growth contraction (-12.21%) compared to the national average of -3.49 percent (YoY), of course other sectors affiliated with the tourism sector will also be affected as well. So, the purpose of this study is to analyze the implications of the COVID-19 pandemic on the supply and demand shocks and their effect on the performance of MSMEs in Bali's economic structure which is dominated by the tourism sector.

## II. LITERATURE REVIEW

### A. Overview of Covid 19

Covid 19 is a new outbreak that emerged at the end of 2019. This outbreak originated in Wuhan, China for the first time. This outbreak includes a very dangerous virus because it is an invisible virus and can kill many people. The existence of this virus not only has an impact on health, but also on several sectors around the world. Covid 19 is an infectious disease caused by the recently discovered corona virus. Covid 19 or known to the public as the corona virus is a virus that attacks the respiratory system. Corona virus can cause disorders of the respiratory system, acute pneumonia, to death. This is a new type of virus that is transmitted to humans. This virus can be transmitted through direct contact at close range with a person with Covid 19 through respiratory fluids that come out of the patient's body when coughing or spitting out saliva and rips. This virus has caused panic all over the world, due to its fairly rapid spread [13].

### B. The Impact of Covid 19 on Economic Conditions and MSMEs

The pandemic has had a significant negative impact on all areas of business, including, supply and demand chains, finance and distribution channels [5]. The pre-Covid 19 literature on the epidemic and discussion of the current crisis make it clear that the epidemic has profoundly affected consumer spending patterns. In addition to increasing their demand for health services, consumers are also likely to seek to

reduce their risk of exposure to the virus and reduce demand for products and services that involve close contact with other people. In the early days of the outbreak, hoarding behavior also led to an increase in direct demand across the retail sector [14]. Several international researchers have specifically discussed the economic shocks that COVID-19 can cause. One group of researchers found that COVID-19 generally results in supply shocks [9] [10] [15]. Another research group found that Covid 19 can cause demand shocks; and simultaneously induce supply shocks and demand shocks [16] [17] [18].

Enesi and Ibrahim studying the effect of the Covid 19 pandemic on the performance of SMEs in Abuja, Nigeria concluded that the Covid 19 pandemic has the effect of reducing income or creating low income, loss of employee productivity due to reduced salaries, lack of protection due to lack of ability on the part of the government to reduce the prevalence of the pandemic [19]. The performance of micro, small and medium enterprises is disrupted in the supply chain, demand, shortage of raw materials, transportation for product distribution, cancellation of export orders and delays [8]. Based on the results of research by Abdi et al., which have been carried out, it can be concluded as follows the impact of the Covid 19 pandemic in Indonesia on MSMEs. Slow raw materials cause some scarcity of raw materials used to make MSME products, a decrease in income, a decrease in product demand and sales, a reduction in employees, difficulties in making bank loans. Meanwhile, the government's efforts to save MSMEs during the Covid 19 Pandemic, the decline in income and the existence of MSMEs has slowly experienced a very drastic decline [14].

Shock is divided into two, in a broad sense and a narrow sense in a broad sense. shock is a shock that causes the simultaneous failure of a number of institutions or companies, while in a narrow sense a shock is a shock from microeconomics that causes risk to a company and then spreads to other companies. A shock that shifts the aggregate demand curve is called a demand shock. Likewise, shocks to aggregate supply are known as supply shocks. A supply shock is something that reduces the ability of the economy to produce goods and services at a certain price. Supply shocks from the pandemic are mostly considered shocks to the labor supply [20]. Demand shocks, on the other hand, are something that reduces the ability or willingness of consumers to buy goods and services at a certain price.

### C. The role of MSMEs in the Indonesian economy

In accordance of Undang-Undang No.20/2008 concerning Micro, Small and Medium Enterprises (MSMEs), each defined:

- 1) Micro Enterprises are productive businesses owned by individuals and/or individual business entities that meet the criteria for a maximum asset of Rp. 50 million and a maximum turnover of Rp. 300 million.
- 2) Small Business is a productive economic business that stands alone, which is carried out by individuals or business entities that are not subsidiaries or branches of companies that are owned, controlled, or become a part either directly or indirectly of a medium or large business that meet the criteria for assets between Rp. 50 million to

Rp. 500 million with a turnover of between Rp. 300 million to Rp. 3 billion.

- 3) Medium Enterprises are productive economic businesses that stand alone, which are carried out by individuals or business entities that are not subsidiaries or branches of companies that are owned, controlled, or become part either directly or indirectly with Small Businesses or large businesses with a total net worth between Rp.500 million to Rp.10 billion or annual sales between Rp.2.5 billion to Rp.50 billion.

MSMEs have a massive function and role for the economy of a country, especially in Indonesia. As a quick fact, MSMEs became one of the main pillars of the Indonesian economy when it almost collapsed due to the monetary crisis that occurred in 1997 ago. When many giant companies went bankrupt at that time, MSME activities in Indonesia actually became the savior of a country that was in a slump. In general, MSMEs have three important roles in the Indonesian economy, namely: (1) economic equity in society. This can happen because MSMEs are spread in many areas, even remote areas; (b) reduce poverty levels; (c) source of foreign exchange income for the country; MSMEs are big foreign exchange for the country.

### III. MATERIAL AND METHOD

Research on the implications of the COVID-19 pandemic on the demand and supply of MSMEs in Bali uses a qualitative descriptive approach. This research was conducted in three areas that place the tourism sector as a top priority in its economic development. The three regions are: Denpasar City, Badung Regency, and Gianyar Regency.



Figure 1. Research Location

The number of MSMEs (population) in the three regions is 126,769 units. Each can be described as: 32,026 units in Denpasar City, 19,261 units in Badung Regency, and 75,482 units in Gianyar Regency. From the existing population, this

study used a sample whose sample size was determined using the Slovin formula with an error rate of 10%, so that a sample size of 100 MSME units was obtained.

The research sampling technique used purposive sampling, namely the technique of determining the sample with certain considerations [21]. The considerations in this study are areas with priority sectors of economic development in the tourism sector. The proportion of the research sample based on the research area is presented in Table 1 below.

TABLE 1 TOURIST ATTRACTION

Region	Population	Proportion	Number of samples
Denpasar	32,026	25.3%	25
Badung	19,261	15.2%	15
Gianyar	75,482	59.5%	60
Total	126,769		100

Source: Bali Central Statistics Agency (2021)

The data in this study in the form of primary data were collected using a research instrument in the form of a questionnaire. The research questionnaire contains business conditions before and during the Covid 19 pandemic, demand and supply during the pandemic, income, and business margins in the MSME business group. This study uses a descriptive analysis technique where the data that has been collected through questionnaires is then processed using descriptive statistical tools.

### IV. RESULT AND DISCUSSION

#### A. Characteristics of the MSMEs Sample

The research sample based on the business sector is shown in Table 2 below.

TABLE 2 SAMPLE PER-BUSINESS SECTOR

Business Sector	Percentage of samples
Trading	54.0
Agriculture	16.0
Farm	6.0
Accommodation & Rest	8.0
Processing industry	7.0
Other services	9.0
Total	100.0

Source: Data processed

The research sample is dominated by the trading business sector (54.0%). The sample based on the business scale group is presented as shown in Figure 2 below.

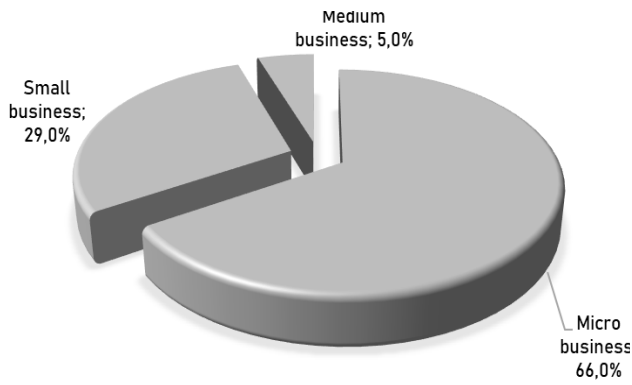


Figure 2. Sample based on business scale

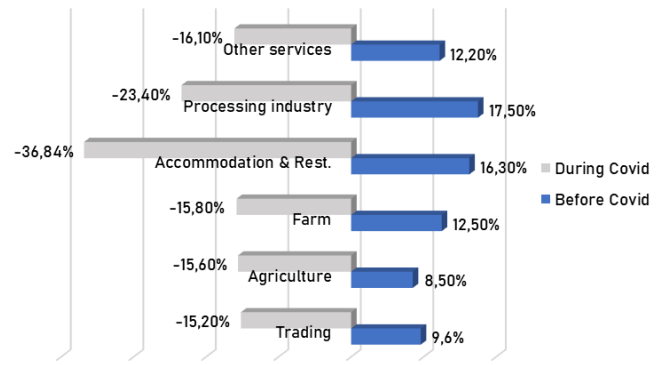


Figure 3. Comparison of Business Margin

**B. MSME Business Conditions Before and During Covid 19**

The condition of MSMEs in the three research sample areas (Denpasar, Badung, Gianyar) before Covid-19 was dominantly running normally. On average, above 70.0 percent of MSMEs run normally on conditions of production, sales volume, and income. In fact, a 7.0 percent increase in production, a 22.0 percent increase in sales volume, and a 15.0 percent increase in MSMEs in obtaining their business income. Although on the other hand, several MSMEs experienced a decrease in production (by 14.0%), a decrease in sales volume (8.0%), and a decrease in operating income (5.0%).

On the other hand, during the Covid-19 pandemic, all MSMEs faced a decline in production, sales volume, and of course a decrease in the ability of businesses to earn income. Specifically on the decline in income, it can be explained that MSMEs in the three research areas at the time of Covid 19 experienced an average decrease in business income of 30.65 percent. The accommodation and restaurant business sector experienced a decrease in operating income by 56.67 percent, followed by the processing industry (fashion, crafts, souvenirs and others) which decreased by 39.0 percent, and the agriculture, plantation and livestock sectors by 24.66 percent. Meanwhile, two other business sectors also declined, such as trading down by 17.90 percent, and other services down by 15.0 percent.

Based on the data obtained from the survey results, it is known that Covid 19 has had a very significant decline in business conditions. As a result of the decline in production levels, decreased sales, and income directly impacted on the decline in the margins of each MSME in the three areas affected by Covid 19. A very sharp decrease in margin occurred in the accommodation and restaurant business sector to -36.84 percent, the manufacturing industry decreased by -23.40 percent followed by the other service sector (-16.10%), the livestock sector (15.80%), the agricultural sector (15.60%), and the trade sector (-15.20%).

The comparison of operating margins before and during Covid 19 is shown in Figure 3.

**C. Analysis of Demand Shock and Supply Shock on MSMEs due to Covid 19**

The main trigger for shocks to the Balinese economy is the decline in tourist visits to Bali due to the implementation of social distancing. Data shows that 53.0 percent of Bali's economy is supported by the tourism sector. Speaking of occupancy, the area that lost the largest occupancy was Bali which in 2019 filled 59.57 percent and became 15.62 percent in 2020 or lost 43.95 percent. This low occupancy was due to the drastic decline in the number of foreign tourist visits to Bali, from 552,403 foreign tourists in December 2019 to only 22 in August 2020. The three most affected areas were Denpasar City, Badung Regency and Gianyar. These three regions mostly rely on tourism activities as the main supporter of their economy.

The closure of entry access for tourists as well as the closure of the tourist attractions themselves have caused the cessation of various types of businesses affiliated with tourism such as wholesale and retail trade, provision of accommodation, food and beverages, processing industries, service industries, to transportation. The closure of this access resulted in a decrease in business income which in turn resulted in a reduction in the number of employees and could mean a decrease in income levels due to layoffs. The Covid-19 pandemic has made tourists not dare to visit due to various factors other than prohibitions from their respective countries' governments. Tourist attractions no longer have visitors. Automatically all kiosks in tourist attractions were closed. Tourism workers without income, people's purchasing power drops drastically.

This condition causes demand shocks for MSMEs affiliated with tourism activities. On average, the decline in business demand ranged from 20-60 percent in the trading and retail businesses of basic needs. The highest decline occurred in the accommodation and restaurant business sector with a decline in the range of 80-90 percent. This decline caused MSME production activities to decline, but based on field data there have been no MSMEs that have stopped their production. MSME business owners have difficulty determining the price of their products, but business owners still try to maintain the prices that have been made previously to avoid business losses. Difficulties experienced by MSME owners in marketing or promoting the resulting business products.

The percentage decrease in MSME demand during the Covid-19 pandemic is shown in Figure 4.

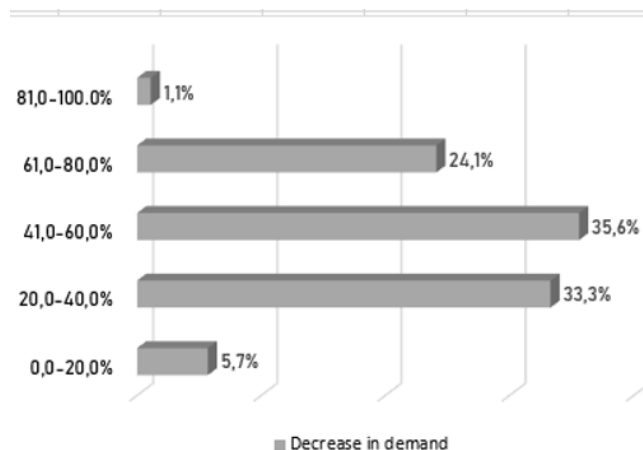


Figure 4. Percentage of Decrease in MSME Demand

The graph in Figure 4 shows the variation in the decline in MSME demand as a result of the social distancing policy taken by the government to suppress the spread of Covid 19 in Indonesia. This decrease in demand resulted in a shift in the aggregate demand curve (shifted to the left) resulting in a demand shock for MSMEs.

The next analysis is an examination of the shocks that occur to supply. Two indicators are used as parameters to see the occurrence of shocks in MSME offers, namely the supply of raw materials and an increase in raw material prices during Covid 19. During the COVID-19 pandemic, respondents stated that there were no problems in gaining access to raw materials. All MSMEs (100%) answered "yes" to questions stating that they could gain access to raw materials. A total of 26.1 percent of MSMEs stated that they experienced an increase in raw materials. Business fields that experienced an increase in the price of raw materials, especially for livestock, retail traders. The increase in the price of these raw materials has reached almost 20 percent. Meanwhile, 73.9 percent of other business sectors stated that they had not experienced an increase in prices during the pandemic.

Based on the findings of this field, that the social restrictions imposed as a policy to suppress the spread of Covid 19 which resulted in a decrease in tourist visits to Bali did not significantly shake the offer from the MSME sector. The increase in raw material prices that occurred during Covid 19 was driven by supply constraints from producers in the delivery process. Various terms and conditions imposed by the government to enter from one region to another have an impact on increasing costs in the delivery of these raw materials, one of which is the mandatory provision of antigen test or polymerase chain reaction (PCR).

## V. CONCLUSIONS

The travel restriction policies implemented by the government in each country have resulted in a decrease in demand for travel. Tourism is a global industrial sector with this restrictive policy having an impact on a significant

decrease in demand and implications for a significant decrease in MSME demand due to the cessation of Global Value Chains (GVCs) in line with the research findings of J. Juergensen et al. MSMEs affiliated with the tourism sector face a negative demand-side shock.

MSMEs in the three study areas experienced a decline in production, sales volume, and also of course reduced the ability of businesses to earn income. The accommodation and restaurant business sector experienced a very significant decrease in operating income (reaching 56.67 percent), followed by the creative industry (fashion, carving crafts, souvenirs and others) which fell by 39.0 percent, and the agriculture, plantation, and livestock sectors. by 24.66 percent. On the other hand, the shocks faced by MSMEs in the three study areas on supply (increase in raw material prices) were not too significant. The findings of this study are also in line with the findings of Brinca et al., Caballero and Simsek, Guerrieri et al., that Covid 19 caused shocks to the demand and supply of MSMEs.

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