

# The Effect of Financial and Non-financial Supports on the Productivity of MSEs in Indonesia

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## ABSTRACT

Micro and Small Enterprises (MSEs) contribute significantly to the economy and job creation. The majority of MSEs use simple or traditional technology in the production process. Several common obstacles cause low MSEs productivity, such as low-quality human resources, lack of knowledge, and difficulty in finance access. Various support programs have been implemented to help MSEs increase productivity. This research was conducted to provide empirical evidence of the effect of financial and non-financial support on the labor productivity of MSEs using data at the micro level. By using multiple linear regression for the cross-sectional data, this study concludes that groups of business units receiving financial support, non-financial support, and both forms of support at the same time have productivity of respectively 28.12 percent, 16.04 percent, and 6.36 percent, higher than those receiving no support at all. The results of this study also show that non-financial support has a higher impact on business units with larger sizes and business units with more prolonged operations. Due to their positive effect on productivity, assistance support programs must be extended to more business units. The implication of this research for business is that to provide optimal benefits, support programs should be tailored to the needs of each business unit.

## ABSTRAK

Usaha Mikro dan Kecil (UMK) berkontribusi besar terhadap perekonomian dan penciptaan lapangan kerja. Mayoritas UMK menggunakan teknologi sederhana atau tradisional dalam proses produksi. Beberapa kendala yang sering dihadapi UMK adalah rendahnya kualitas sumber daya manusia, kurangnya pengetahuan, dan sulitnya akses keuangan. Hal-hal tersebut menyebabkan rendahnya produktivitas UMK. Berbagai program dukungan telah dijalankan untuk membantu UMK meningkatkan produktivitasnya. Penelitian ini dilakukan untuk memberikan bukti empiris pengaruh dukungan finansial dan nonfinansial terhadap produktivitas tenaga kerja UMK menggunakan data pada level mikro. Menggunakan metode regresi linier berganda yang bersifat cross section, penelitian ini berkesimpulan bahwa unit usaha penerima dukungan finansial, dukungan non finansial dan kedua bentuk dukungan sekaligus terbukti memiliki produktivitas berturut-turut 28,12 persen, 16,04 persen, dan 6,36 persen lebih tinggi dibandingkan kelompok unit usaha tanpa dukungan sama sekali. Hasil penelitian ini juga menunjukkan bahwa dukungan nonfinansial memberikan dampak yang lebih tinggi pada unit usaha dengan ukuran lebih besar maupun unit usaha yang sudah lebih lama beroperasi. Terbukti berhubungan positif dengan produktivitas, program bantuan dapat diberikan kepada lebih banyak unit usaha. Implikasi bisnis penelitian ini adalah agar dapat memberikan manfaat yang optimal, program dukungan perlu disesuaikan dengan kebutuhan unit usaha masing-masing.

## 1. INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) support economic growth and development. For many countries, MSMEs are economic growth engines that significantly contribute to job creation and

accelerate economic and social development (Chege et al., 2020), particularly for developing countries (Page & Söderbom, 2015). One of the reasons is that MSMEs contribute almost 90 percent of all business activities (Muriithi, 2017) and create the newest jobs

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in OECD countries (OECD, 2000). Due to their significant economic contribution, MSMEs must receive great attention from researchers and policy-makers (Gupta & Chauhan, 2021).

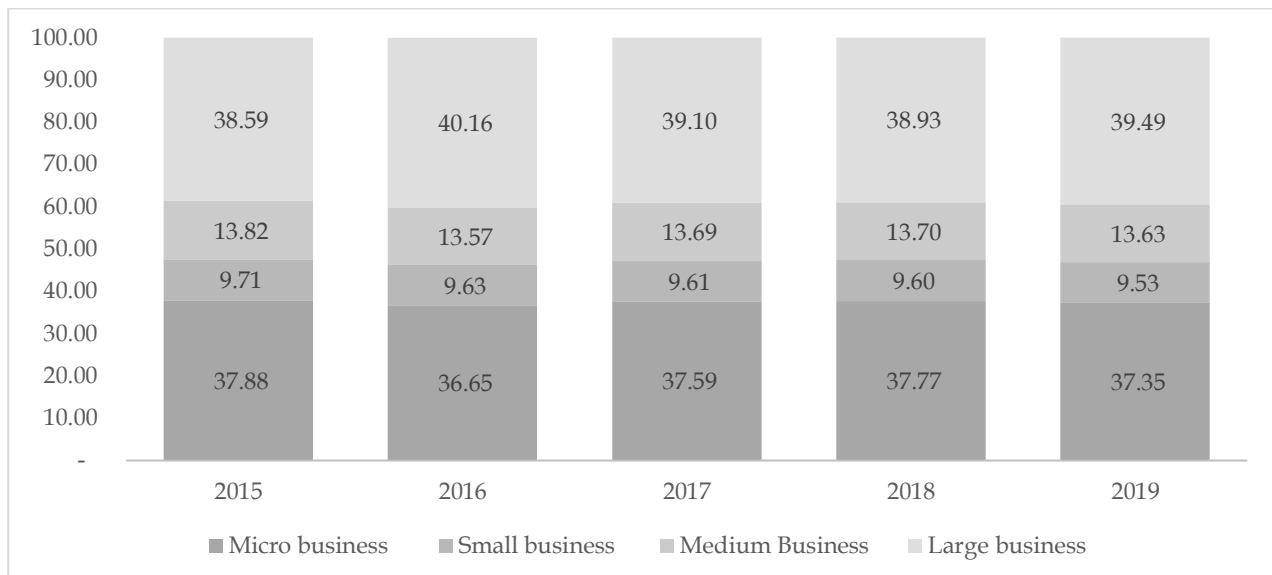
MSMEs have advantages in adaptability, speed in decision-making, flexibility, and ability to respond to changing market needs. On the other hand, the lack of productivity is one of the inherent weaknesses of MSMEs (Kurniawati & Yuliando, 2015; Mourougane, 2012; Nurlatifah et al., 2021; OECD, 2000; Puspaningrum, 2020). It is found that MSMEs are 80 percent less productive than large-scale enterprises (Mourougane, 2012) noted that most MSMEs use traditional production processes and low technology. In addition, MSMEs still face many obstacles, some of which are the lack of quality human resources, knowledge, technology, and access to finance (Gupta & Chauhan, 2021; Kurniawati & Yuliando, 2015). Financial constraints are the leading cause of the lack of productivity of MSMEs, especially in developing countries (Edeh & Acedo, 2021; Wellalage & Fernandez, 2019).

Given the critical role of MSMEs, the government and other parties, such as cooperatives, banks, and large companies, need to support and actively guide business activities (Autio et al., 2014). Support programs run by the government and other parties are one of the driving forces for the growth of new and small companies (Isenberg, 2010; Spiegel, 2016,

2017). However, there is no agreement among academics on whether this support program can improve or even hinder the performance of MSMEs (Vu & Tran, 2020).

On the one hand, the research results show that support from the government and other parties can improve the performance of MSMEs in Japan (Honjo & Harada, 2006), South Korea (Doh & Kim, 2014), Spain (Barajas et al., 2017) and in Europe (Bodas-Freitas & Corrocher, 2019). On the other hand, several studies show that external support has a different impact on companies in Italy (Maggioni et al., 1999) and Nigeria (Edeh & Acedo, 2021). In addition, some studies cannot find enough evidence to show the positive effect of support programs on company productivity in New Zealand (Morris & Stevens, 2010), Scotland (Spiegel, 2016), and Vietnam (Vu & Tran, 2020).

The results of empirical studies on the effect of support programs on MSMEs' productivity do not produce a unanimous conclusion (Biru et al., 2021). Empirical evidence in the context of the effect of support on MSMEs in developing countries is also limited (Edeh & Acedo, 2021). Given that this support requires relatively large resources from various sources, it is necessary to test the effectiveness of the support program. In addition, evaluating support programs is very important in assisting the design of other support programs in the future (OECD, 2000).



**Figure 1.** Contribution of MSMEs to Indonesia's GDP from 2015 to 2019 (in %)

Source: MSMEs and Large Enterprises from 2015 to 2019 (<https://kemenkopukm.go.id/data-umkm>)

Based on data from the Ministry of Cooperatives and SMEs, the contribution of MSMEs in Indonesia is almost 60 percent of the total Gross

Domestic Product (GDP) and Current Prices from 2015 to 2019 (Figure 1). In addition, MSMEs also have an important role in absorbing labor. From

2015 to 2019, MSMEs were able to absorb more than 96 percent of the total workforce (Ministry of Cooperatives and SMEs). As in various countries, financial difficulties are also the dominant obstacle faced by MSMEs in Indonesia (Irfayanti & Azis, 2012). The results of the Micro and Small Industry survey (IMK survey) conducted by the Central Bureau of Statistics (BPS) in 2019 show that the problem faced by the majority of micro and small enterprises (MSEs) in Indonesia is about capital/liquidity (BPS, 2020). Twenty-three percent of Micro and Small Industry Survey respondents stated they experienced capital/liquidity problems.

The Organization for Economic Co-operation and Development (OECD) recommends that each government has policy initiatives to increase MSMEs' access to finance and provide a conducive regulatory, legal and financial framework (OECD, 2000). One form of support from the Government of the Republic of Indonesia to facilitate access to finance for MSMEs is the issuance of Government Regulation No. 45 of 2008 concerning Guidelines for Providing Incentives and Facilitation of Investment in the Regions. The government's support is based on claims that access to public finance complements other forms of financial support and offers greater flexibility and incentives (Cecere et al., 2020). In addition, many financial and non-financial support programs are implemented to support MSMEs. Some examples of non-financial support include coaching, education, training, business management seminars, and other assistance programs (Trie et al., 2022).

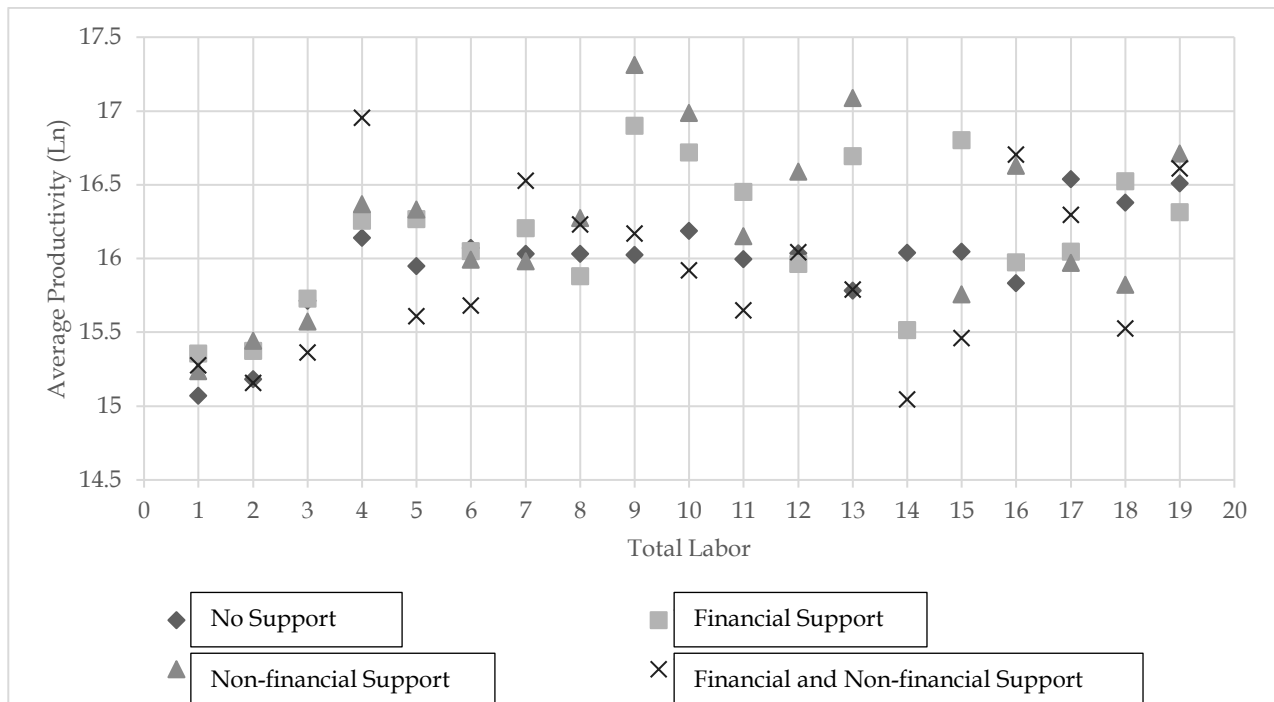
Support programs for MSEs in Indonesia are provided in various forms or types of support. Based on the IMK survey conducted by BPS in 2019, the types of support received by MSEs can be classified into financial support (material assistance) and non-financial support (guidance/counseling). Financial support (material assistance) includes cash, raw materials, marketing, capital goods, machinery, and others. Meanwhile, non-financial support includes guidance/counseling on managerial functions, production, marketing, and environmental impact analysis. The 2019 Micro and Small Industry survey results showed that as many as 9,247 respondents out of 89,281 (equivalent to 10.36 percent of respondents) stated that they received financial and/or non-financial support from the government

or other parties. Of these, 5,378 (6.02%) respondents received support in the form of financial support, 2,245 (2.51%) respondents received non-financial support, and 1,624 (1.82%) respondents received both forms of support at once. One of the expected goals of providing support programs is to increase productivity.

The average labor productivity of the MSEs provides a visualization of productivity comparisons between groups of business units that receive support programs and groups of business units that do not receive any support. MSEs are categorized into business groups, such as those without support, financial support, non-financial support, and those receiving financial and non-financial support. Furthermore, the calculation of the average labor productivity of each observation group is carried out. The average productivity per observation group is in the form of natural logarithms in Figure 2. This figure indicates no pattern that groups of business units receiving financial and/or non-financial support are more productive than those without support. Business groups receiving financial and non-financial support tend to be more unproductive than other groups.

There have been many studies discussing MSMEs in Indonesia. However, so far, no research has been discussing the effect of financial and non-financial support on the labor productivity of MSEs in Indonesia. Based on the existing phenomena and the results of several previous studies, this study aims to empirically test the effect of financial and non-financial support on the labor productivity of MSEs in Indonesia. Given the limited data available, the object of this study is limited to the Micro and Small Enterprises (MSEs) group. The data used are obtained from the IMK survey 2019 by the Central Bureau of Statistics (BPS) of Indonesia (BPS, 2020).

This study is designed to complement the literature on the effect of providing support programs on the labor productivity of MSEs with empirical testing using econometric methods. This study also makes a contribution that is different from other studies because this study analyses the effect of financial support, non-financial support, and both support from the government or other parties using microdata at the small business unit level.



**Figure 2.** Average labor productivity of MSEs

Source: Processed from Micro and Small Industry Survey 2019 (BPS, 2020)

## 2. THEORETICAL FRAMEWORK AND HYPOTHESES

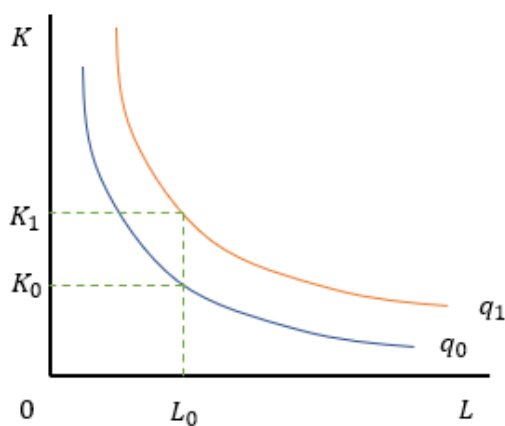
### Production Theory

Production is the process or activity of combining various factors of production (input) into output. The relationship between input and output can be expressed in the following production function:

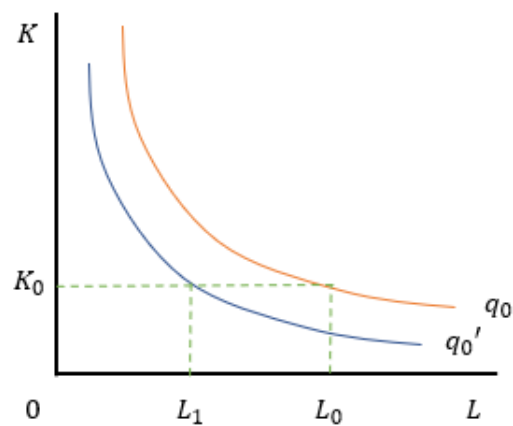
$$q = f(K, L, M, \dots) \quad (1)$$

where  $q$  represents a certain amount of output,  $K$  represents capital,  $L$  represents labor input, and  $M$

represents the raw materials used during a given period. The form of the notation indicates the possibility of other variables affecting the production process (Nicholson & Snyder, 2021). By simplifying the factors of production that focus on capital and labor, the production function can be written as  $q = f(K, L)$ . The production function reflects the company's knowledge, techniques, or production methods. In general, the more efficient the technique, the greater the output that can be produced from a certain amount of input.



**Figure 3.** Isoquant Curve



**Figure 4.** Isoquant Shift

Source: Nicholson & Snyder (2021)

One way to describe the production function in two dimensions is to use an isoquant curve. The further the isoquant curve is away from point 0, the greater the amount of input used and the resulting output. The isoquant curve provides information on alternative combinations of inputs to produce output at a certain amount or level. The isoquant curve can also show the degree of substitution between inputs used in the production process. For example, the capital used in the production process can be replaced with a certain number of laborers. The number of substitutions between inputs can vary depending on the production function.

Support programs implemented by the government and other parties for business activities are one of the driving forces for new companies and small companies (Isenberg, 2010; Spigel, 2016, 2017). The government is a central figure that influences policy aspects and contributes directly to business activities through regulations and other initiatives (Isenberg, 2010, 2011). Support programs are widely used to improve business performance (Biru et al., 2021). This support can be in the form of financial or non-financial support (Bodas-Freitas & Corrocher, 2019). Financial support aims to overcome financial barriers, where financial barriers are identified as the main determinant of MSME productivity, especially in developing countries (Edeh & Acedo, 2021). Non-financial support, such as advice and consulting services, concentrates on barriers related to lack of knowledge and helps overcome problems in business management (Han & Benson, 2010).

Financial support programs can increase the amount of capital and other inputs used in the production process. Adding inputs in the production process can increase the resulting output. As an illustration, a company can use a combination of  $L_0$  and  $K_0$  to produce  $q_0$ . When capital is increased to  $K_1$ , the output can increase to  $q_1$  (Figure 3). Thus, business units that receive financial support programs have higher labor productivity than those that do not receive any support programs.

Non-financial support can help improve the skills of business actors and improve production techniques or methods to make them more efficient. The isoquant map may shift from  $q_0$  to  $q_0'$  due to production techniques or methods improvements. Technical improvements can be in the form of using more efficient production techniques or improving the skills of laborers. Meanwhile, education and training will make the workforce more skilled so that the production process becomes more efficient than those who do not receive it. As a result,

producing output ( $q_0$ ) with a fixed amount of capital ( $K_0$ ) requires fewer workers ( $L_1$ ) than before ( $L_0$ ), as shown in Figure 4. Thus, the business units that receive non-financial support programs have higher productivity than those that do not receive any support programs.

### Research Hypotheses

In general, support programs are considered capable of increasing company productivity. Business units that receive support programs are expected to have higher productivity than those that do not receive any support programs. Doh & Kim (2014) researched the effect of government support policies on the productivity of MSMEs innovation in strategic industries in Gyeongbuk Province, South Korea. In the research, Doh & Kim (2014) used technology development assistance funds as a proxy for government support policies for MSMEs. MSME innovation productivity was measured by technological innovation in the form of patents, utility models, trademarks, and registration of new designs. This study found evidence that there was a positive relationship between technology development assistance funds by the South Korean government and the acquisition of patents and registration of new designs by MSMEs. In addition, this study also found that collaboration with universities had a positive relationship with patent acquisition and registration of new designs. The results of this study show the importance of government financial assistance for MSMEs innovation.

In addition, Bodas-Freitas & Corrocher (2019) research examined the relationship between providing support for implementing resource efficiency practices and SMEs' profitability level in Europe. In contrast to the research conducted by Doh & Kim (2014), research conducted by Bodas-Freitas & Corrocher (2019) distinguished between financial support and non-financial support in the form of advisory and consulting services regarding the implementation of resource efficiency practices. This research found that companies that received financial support and non-financial support had higher resource efficiency than those that did not.

Subsequent research was carried out in developing countries, where Nguyen et al. (2021) analyzed the effect of government support on the financial performance of companies in Vietnam using a sample of manufacturing SMEs from 2007 to 2015. This study found that government support programs affected the company's financial performance. In addition, Nguyen et al. (2021) also

divided government assistance into two categories: financial assistance and technical assistance. The research results on the two categories of assistance indicate that financial assistance positively affects the company's financial performance.

Edeh & Acedo (2021) divided external financial support by source. Financial support was categorized into financial support from the state government, financial support from the federal government, and financial support from foreign countries. The results of this study revealed that these sources of financial support had a heterogeneous effect on the innovation and productivity of MSMEs. Unlike financial support from federal and foreign countries, financial support from the state government reduced MSMEs' productivity.

In contrast to Nguyen et al. (2021), Vu & Tran (2020) examined the productivity of MSMEs receiving financial assistance in Vietnam. Using panel data from approximately 2,600 companies in 2011-2015, Vu & Tran (2020) found an insignificant relationship between financial support programs and MSME productivity. Access to financial support enhanced technological progress and company growth but had a negative effect on increasing technical efficiency. Vu and Tran (2020) suspected that government support programs had been distributed ineffectively. The provision of assistance had been based more on political connections than the company's contribution to society. Another finding from this study is that non-financial assistance programs in the form of training for the workforce even had a negative relationship with productivity. Vu and Tran suspected this might be due to outdated workforce training programs and content not aligned with company needs.

As in other countries, MSMEs in Indonesia plays an important role in creating employment and economic growth. Irfayanti & Azis (2012) identified ten main obstacles MSMEs face competition, access to finance, energy prices, technology, inefficient production costs, economic factors (inflation, interest rates, taxes, and others), management skills, sales restrictions, and raw materials. Wahyudin et al. (2016) researched to analyze the competitiveness of MSMEs in selected industrial clusters in Indonesia. The research found that the competitiveness of MSMEs could be sourced from human capital, financial resources, innovation, and business strategy. To strengthen MSMEs, Irfayanti & Azis (2012) and Wahyudin et al. (2016) agree that SMEs need support from the government and other stakeholders to overcome existing obstacles.

Based on the results of several studies that have been conducted in various countries, both developed and developing countries, the research hypotheses can be formulated as follows:

- H<sub>1</sub>: Financial support can increase production factors used as inputs in the production process. An increase in the input will result in higher output so that the labor productivity of business units receiving the financial support program is higher than that of business units without any support program.
- H<sub>2</sub>: Non-financial support in the form of counseling or training can increase the efficiency of the production process. With higher efficiency, business units receiving non-financial support programs can produce a certain amount of output with fewer workers. Thus, the labor productivity of business units receiving non-financial support programs is higher than that of business units without support.
- H<sub>3</sub>: The financial and non-financial support provided at the same time can increase the amount of output through increasing input and increasing the efficiency of the production process. Thus, the labor productivity of business units receiving financial and non-financial support programs at the same time is higher than the labor productivity of business units without any support at all.

### 3. RESEARCH METHOD

#### Research Data

The object of this study is Micro and Small Enterprises (MSEs) engaged in the processing industry. The sample used is business units that are respondents to the Micro and Small Industry Survey (IMK survey) conducted by the Central Bureau of Statistics (BPS) of Indonesia in 2019. The main consideration for using data sourced from BPS is the availability of accessible data used in this study. The data also provides information following the purpose of writing, such as the form of support received by the business units, the amount of output, the number of workers, and other information needed in this study. As additional information, in this data set, information related to the identity and address of the respondents cannot be accessed. The total number of respondents in the IMK Survey is 90,295. A total of 89,281 respondents have provided complete information according to research needs and are subsequently used as samples in this study.

The time period in this study is limited to 2019. In that year, the Ministry of Finance of the Republic of Indonesia began to stipulate Regulations of the Minister of Finance of the Republic of Indonesia PMK 199/PMK.010/2019 concerning Customs, Excise, and Tax Provisions on Imported Shipments. One of the things regulated in the regulation is the reduction of the threshold for imported goods subject to tax from USD 75 to USD 3. This regulation was stipulated to protect and encourage the growth of domestic micro and small industries in connection with the increasing volume of imported goods. Besides the initial considerations, the other reason for selecting 2019 for this research is the availability of data from the BPS.

### Research Model

This study uses a model adapted from Vu & Tran (2020). Vu & Tran (2020) researched to measure the effect of financial support on company productivity, so the model is suitable for this study. The model from Vu & Tran (2020) also includes a worker training variable representing a form of non-financial support. In addition, the model has also considered internal control variables such as company age and size and the business environment. In this model, the control variable of the business environment is adapted to the variable of the food industry group. Modifications are also made by adding groups of business units that receive both support programs while following research conducted by Bodas-Freitas & Corrocher (2019). The independent variables used in this study are the variables of  $fin_i$ ,  $nonfin_i$  and  $fin * nonfin_i$ . These three variables reflect the forms of support received by the business unit. The model used in this study is as follows:

$$LnProd_i = \beta_0 + \beta_1 fin_i + \beta_2 nonfin_i + \beta_3 fin * nonfin_i + \beta X_i + \varepsilon_i \quad (2)$$

where  $LnProd$  is labor productivity of Micro and Small Enterprises;  $fin$  is dummy variable has a value of 1 if the business unit receives financial support and a value of 0 if it does not;  $nonfin$  is dummy variable has a value of 1 if the business unit receives non-financial support and a value of 0 if it does not;  $fin * nonfin$  is Interaction of the variables of  $fin$  and  $nonfin$ ;  $X$  is a matrix of control variables, consisting of size (using a proxy for the number of workers), age (company operational age), internet (internet use in business development, dummy), and food industry (dummy).

### Analysis Method

This study uses a quantitative approach with multiple linear regression methods to empirically analyze differences in the productivity of business units receiving financial support, non-financial support, and both financial and non-financial support compared to business units without any support. A robustness check is carried out on the research model to ensure that the estimation results are consistent even under different conditions. The robustness of a model can be defined as the ability of a model to reproduce consistent estimation results even when using different combinations of control variables.

A robustness check is carried out by examining changes in the regression coefficient values of the variables when the regression model specifications are modified by adding or removing control variables. The addition of control variables is expected not to significantly change the direction and magnitude of the coefficient of the variables of interest. Furthermore, classical assumptions tests consisting of multicollinearity, heteroscedasticity, and normality tests were carried out to ensure that the estimation of the research model is not biased. The regression model estimation results are analyzed with the main focus on the coefficients  $\beta_1$ ,  $\beta_2$  and  $\beta_3$ . In this study, the coefficient values of  $\beta_1$ ,  $\beta_2$  and the accumulation of  $\beta_1, \beta_2, \beta_3$  are expected to be positive.

1. The coefficient  $\beta_1$  shows the difference in productivity between business units that receive financial support and business units without any support.
2. The coefficient  $\beta_2$  shows the difference in productivity between business units that receive non-financial support and business units without any support.
3. The accumulation of the coefficients  $\beta_1$ ,  $\beta_2$  and  $\beta_3$  shows the difference in productivity between business units that receive both financial and non-financial support and business units without any support.

### Definition and Measurement of Variables

Productivity of MSEs ( $LnProd_i$ ) is calculated based on labor productivity and is presented in the form of natural logarithms. Labor productivity is calculated based on the total output divided by the total labor. Information regarding the output is obtained from the Micro and Small Industry Survey (IMK Survey) Questionnaire Block V: Business/Company Production and Income.

The main independent variable in this study is a dummy variable consisting of financial support, non-financial support, and the interaction of financial support and non-financial support. Financial support is a dummy variable with a value of 1 if the business unit receives financial support and 0 if it does not. Financial support in this study includes material assistance in the form of cash, raw materials, marketing, capital goods, and others. Information on whether business units receive financial support is obtained from the IMK Survey Questionnaire Block IX: Constraints and Partnerships, entries 911 and 913. Like financial support, non-financial support is also a dummy variable with a value of 1 if the business unit receives non-financial support and 0 if it does not. Non-financial support in this study includes guidance/counseling related to managerial, production, marketing, and environmental impact analysis. Information regarding whether business units receive non-financial support through guidance/counseling is obtained from the IMK Survey Questionnaire Block IX: Constraints and Partnerships, entry 914. Finally, the interaction of financial support and non-financial support in this study shows a form of financial support and non-financial support received by business units simultaneously. This variable is formed from the multiplication of the financial and non-financial variables.

The control variables used in this study include company size ( $size_i$ ), company operational age ( $age_i$ ), dummy variable of internet use in business development ( $internet_i$ ), and the food industry group ( $foodindustry_i$ ). There are two assumptions about the relationship between firm size and productivity. On the one hand, it is assumed that there is a positive correlation between company size and productivity. Larger companies may have more investment resources, better management, and more highly qualified personnel. Therefore, firm size is very important for innovation and productivity activities (Miguel Benavente, 2006). On the other hand, small companies are more often seen as highly dynamic agents of productivity growth and usually have higher productivity growth rates (Dhawan, 2001; Hall et al., 2009; Leung et al., 2008). Regardless of how it relates to company productivity, company size is considered an influential factor.

Company size ( $size_i$ ) in this study is calculated based on the total number of laborers. Information regarding the number of laborers is obtained from the IMK Survey Questionnaire Block III: Labors and Remuneration, entry 301: The number of workers

(including entrepreneurs) in August 2019. This study considers the relationship between company size and productivity positive. It is based on the consideration that the estimated number of workers is still less than the optimal number needed by business units in the production process. The addition of the number of workers is expected to provide additional output that is higher marginally to increase the productivity of business units.

Related to the company operational age ( $age_i$ ), older companies have more advantages in management and administration than newcomers. They can adapt to changing environments, such as adjustments to their production and financial policies. Thus, older companies have more experience implementing resource efficiency measures resulting in higher productivity (Cucculelli et al., 2014). But on the other hand, there is an opinion that young companies are more daring to carry out innovation activities and tend to be more oriented toward productivity growth (Coad et al., 2016). In this study,  $age_i$  is a company's operational age, calculated based on the year the company operates commercially until 2019. Information regarding the period for a business unit to operate commercially is obtained from the IMK Survey Questionnaire Block II: Business/Company Characteristics, entry 207: The year the commercial production is started. Given the increasing number of new business units that have emerged and the view that new companies tend to be more productivity-oriented, the relationship between operational age and productivity is thought to have a negative value in this study.

Internet use is considered capable of increasing the efficiency of business activities, so it has a positive and significant influence on labor productivity (Dlodlo & Mafini, 2014; Najarzadeh et al., 2014). In this study, information on internet use in business development is obtained from the IMK Survey Questionnaire Block X: Distribution and Certification, entry 1001: Internet use by businesses/companies. A dummy variable denotes internet use in business with a value of 1 if the business unit uses the internet for business development and 0 if it does not. The magnitude of this coefficient shows the difference in productivity between business units that use the internet and those that do not use the internet in business development. The relationship between internet use and productivity is expected to be positive.

The food industry group variable also controls the model in this study. This variable is based on the consideration that the food industry group is the



most dominant group of all research respondents. The food industry group is also the largest GDP contributor compared to other industrial groups. The food industry group has high growth potential because domestic demand supports it. The food industry group variable is a dummy variable with a value of 1 if the unit of observation is included in the food industry group and a value of 0 if it is not. Information about this industry group is obtained from the IMK Survey Questionnaire Block II: Characteristics of Business/Company, entry 201: 2-digit Indonesian Standard Industrial Classification Code. The coefficient of the food industry variable

can be positive or negative. The magnitude of the coefficient of the food industry variable reflects the difference in productivity between the food industry group and other industrial groups.

#### 4. DATA ANALYSIS AND DISCUSSION

##### Descriptive Statistics

An overview of the data used in this study is presented through descriptive statistics of several research variables in Table 1. Variables are presented in the form of the average of each observation group.

**Table 1.** Descriptive statistics

Variable (Average)	No Support	Financial Support	Non- financial Support	Financial and Non- financial Support	Mean
Firm Size (Number of Labors)	2.18	2.71	2.64	2.86	2.24
Operational Age (Year)	13.14	13.19	11.35	13.87	13.11
Internet Use for Business Development (%)	3.00	3.70	5.10	5.00	3.10
Number of Observations	80.034	5.378	2.245	1.624	22,320.25

Source: Processed from the Micro and Small Industry Survey (IMK Survey) 2019 (BPS, 2020)

Overall, the average number of workers from all respondents is 2.24 workers. The average number of workers for each observation group is in the range of 2.18 to 2.86 workers. It indicates an even distribution for all observations. Judging from the operational age of the business, the average business unit has been operating commercially for 13.11 years. The number of business units operating for less than 6 years is 31.53 percent, and between 6 and 10 years is 21.69 percent of all respondents. This information reflects the growth in the number of SMEs yearly. In general, the use of the internet for business development is carried out by 2,768 respondents. This number is equivalent to 3.10 percent of all respondents. The number of business actors who use the internet to support their business is relatively small. It is supported by the fact that despite many internet users, the services most accessed are messaging applications and social media.

##### Robustness Check

The model used in this study is estimated using the Multiple Linear Regression method. A robustness check is carried out to ensure that the estimation results are consistent under different conditions. Testing is done by adding control variables used in the model gradually. First, regression is performed on

the three independent variables, with the size variable as the control variable. From the estimation results for the robustness check presented in Table 2, it can be seen that the coefficients of  $\beta_1, \beta_2$  and the accumulation of coefficients of  $\beta_1, \beta_2$  and  $\beta_3$  have positive values. The coefficients of  $\beta_1, \beta_2$  and  $\beta_3$  are significant at the level of 1%. A subsequent test is carried out by adding the age variable as the control variable. The coefficient of the age variable has a negative and significant value, so the age variable is considered good control. Meanwhile, the coefficients of  $\beta_1, \beta_2$  and  $\beta_3$  have the same direction and significance as before adding the age variable. The magnitude of the coefficients of  $\beta_1, \beta_2$ , and  $\beta_3$  also does not change significantly.

Then, a regression is performed by adding the internet and food industry control variables, respectively. As with the addition of size variables, the estimation results show that the coefficients of the internet and food industry control variables have significant values. Besides, the magnitude of the coefficients of  $\beta_1, \beta_2$ , and  $\beta_3$  does not change significantly. From these results, it can be concluded that the model used can provide relatively consistent estimation results even though it is carried out with several different control variables.

**Table 2.** Robustness check

Variable	Ln Prod (1)	Ln Prod (2)	Ln Prod (3)	Ln Prod (4)
Financial	0.2838005*** (0.0170999)	0.2850205*** (0.017049)	0.2822363*** (0.0169957)	0.2811896*** (0.0169936)
Non-financial	0.1911862*** (0.0259549)	0.1711564*** (0.025875)	0.1612400*** (0.0257970)	0.1603673*** (0.0257927)
Financial * Non-financial	-0.4062500*** (0.0430136)	-0.3804266*** (0.0428878)	-0.3776232*** (0.0427531)	-0.3781015*** (0.0427454)
Size	0.1573826*** (0.0019913)	0.1573930*** (0.0019850)	0.1544586*** (0.0019826)	0.1547896*** (0.0019831)
Age		-0.0115635*** (0.0003667)	-0.0111626*** (0.0003660)	-0.0110130*** (0.0003668)
Internet			0.5547431*** (0.0233301)	0.5639412*** (0.0233798)
Food Industry				0.0551808*** (0.0095250)
Cons	14.2795100** (0.0061020)	14.4314500*** (0.0077642)	14.4161600*** (0.0077665)	14.4002300*** (0.0082379)
Observations	89,281	89,281	89,281	89,281
Adj R-sq	0.0707	0.0809	0.0867	0.0870
Prob > F	0.0000	0.0000	0.0000	0.0000

Source: Processed from Stata output (2022)

Notes: \*\*\* p&lt;0.01; \*\* p&lt;0.05; \* p&lt;0.1

**Classical assumption test**

A classic assumption test consisting of multicollinearity, heteroscedasticity, and normality tests was conducted to ensure that the model meets the Best Linear Unbiased Estimator (BLUE) criteria. The summary of results is presented in Table 3. In the BLUE assumption, it is required that the variables do not have perfect collinearity. A multicollinearity is determined by whether the Variance Inflation Factor (VIF) value is greater than 10. The test results show that the VIF value of each variable ranges between 1.01 and 2.01, so it can be concluded that there is no indication of multicollinearity.

In cross-sectional studies, a common problem is heteroscedasticity or non-uniform residual variance. One method to test heteroscedasticity is Breusch-Pagan / Cook-Weisberg's test for heteroscedasticity. The null hypothesis ( $H_0$ ) of the Breusch-Pagan / Cook-Weisberg test is that the variance is constant (no heteroscedasticity). The Breusch-Pagan / Cook-Weisberg's test results show that the Prob value > Chi-squared = 0.2277, greater than alpha (0.05). Thus there is no evidence to reject  $H_0$ . It can be concluded that the residual variance is constant, and there is no heteroscedasticity problem in this study.

Finally, a normality test is performed to ensure that the residual values are normally distributed. A good regression model has normally distributed residual values. The normality test in this study is carried out by looking at the distribution plot of the

residue distribution. From the residual plot obtained from the output of the Stata application, it can be seen that the residuals are distributed following the normal line, and it can be concluded that the assumption of normality is fulfilled.

**Table 3.** Summary of the classical assumption test

Testing	Result
Multicollinearity	VIF value of all variables < 10
Heteroscedasticity	Prob > chi2 = 0.2277 (> 0.05)
Normality	The residue follows the normal line

**Evaluation of Regression Results**

Statistical evaluation is carried out on the regression results, which include an F-test, t-test, and the goodness of fit test. From Table 3, it can be seen that the results of the F-test (Prob > F value) show a value of 0.0000 which means that at least one of the independent variables affects the dependent variable. In addition, the results of the t-test (p-value > |t|) for all independent variables show a value of 0.0000. It means that each independent variable affects the dependent variable. The R-squared value is used to measure how much the variation in the dependent variable can be explained by the independent variables. The estimation results show that the R-squared value is 0.0870, meaning that the independent variable can explain 8.70 percent of the variation in the dependent variable.

**Table 4.** Estimation results

Ln Prod	Coef.	Std. Err.	t	P> t	95% Conf. Interval	
Financial	0.281	0.017	16.550	0.000	0.248	0.315
Non-financial	0.160	0.026	6.220	0.000	0.110	0.211
Financial * Non-financial	-0.378	0.043	-8.850	0.000	-0.462	-0.294
Size	0.155	0.002	78.050	0.000	0.151	0.159
Age	-0.011	0.000	-30.020	0.000	-0.012	-0.010
Internet	0.564	0.023	24.120	0.000	0.518	0.610
Food industry	0.055	0.010	5.790	0.000	0.037	0.074
Constant	14.400	0.008	1748.050	0.000	14.384	14.416
Adj R-sq						0.087
Prob > F						0.000

Source: Processed from Stata output (2022)

## Discussion

The estimation results show that, in general, the overall support program has a coefficient with a positive and significant value. It indicates that business units receiving support programs have higher productivity than those without support programs. The coefficient of financial support ( $\beta_1$ ) has a value of 0.2812 with a significance level of 1 percent, indicating that business units with financial support have productivity of 28.12 percent higher than business units that do not receive any support.

The existence of financial support enables business units to produce more output with a fixed number of employees. Thus, labor productivity can be higher. This study's results align with the research by Bodas-Freitas & Corrocher (2019) and Doh & Kim (2014) that business units receiving financial support programs have higher productivity than those without support programs. The higher productivity of business units receiving financial support programs shows that financial support follows the financial problems many business units experiences.

Similar to financial support, business units that receive non-financial support also have higher labor productivity than business units that do not receive any support at all. The coefficient indicates that it  $\beta_2$  which has a value of 0.1604 with a significance level of 1%. This value indicates that the business units receiving non-financial support have productivity of 16.04% higher than those without any support.

In the context of non-financial support, mentoring/counseling programs can increase the capacity/skills of business people. With the increased skills, the production process can be more effective and efficient, so productivity per worker can be higher. The results of this study also confirm the research by Bodas-Freitas & Corrocher (2019), Irijayanti & Azis (2012), and Wahyudin et al. (2016) that business units receiving non-financial support programs have higher efficiency and productivity than those that do not receive any support programs.

Finally, business units receiving support programs in the form of financial and non-financial at the same time have a 6.35 percent higher productivity than those that do not receive any support programs. It is indicated by the accumulation of coefficients  $\beta_1$ ,  $\beta_2$ , and  $\beta_3$  which have a value of 0.0635 with a significance level of 1%. The coefficient values of financial and non-financial support programs are the lowest compared to those of only financial or non-financial support programs. It indicates that the increase in labor productivity of business units receiving both financial and non-financial support is lower than the increase in business units receiving only one support program.

This phenomenon may occur because the form of non-financial support does not match the need to optimize the financial support received by the business unit. Providing non-financial support in the form of counseling or training should be adjusted to the business unit's needs. For example, a business unit that receives financial support in the form of cash needs to get training in managing finances. Likewise, suppose financial support is received in the production of raw materials. In that case, the business unit needs training regarding the most efficient production methods or techniques for using these raw materials. Thus, non-financial support can add value to financial support programs. It needs more attention from support program providers, especially in providing non-financial support programs for business units that have received financial support.

Therefore, accurate information regarding each business unit is needed to provide support according to the needs of business units. Information related to business units can be obtained properly and completely if the business unit has been recorded in a system with an integrated database. However, the majority of MSEs in Indonesia are still MSEs in the informal sector, so data or information related to these business units is still very limited. In addition, efforts to establish an integrated MSEs database have

not gone well. The absence of an integrated database causes difficulties in planning effective policies and support programs for MSEs.

One of the efforts that can be made to obtain complete data and information regarding business units is to encourage MSEs to transform from the informal sector to the formal sector. Using a national ID number (NIK) as a taxpayer identification number (NPWP) can be the right instrument to facilitate MSEs to switch from the informal sector to the formal sector. Even though it has not contributed much to state revenues through taxes, using a national ID number (NIK) as a taxpayer identification number (NPWP) will facilitate the formation and expansion of databases related to economic activities, especially MSEs. A database on business units will facilitate the preparation of policies following the needs of business units. For example, in providing support programs, an integrated database can provide information about the type of assistance needed so

that the support programs provided can align with the constraints faced by each business unit. Thus, preparing support programs or policies for micro and small enterprises can provide benefits as planned.

#### Firm size

The firm size variable has a positive and significant effect on labor productivity. By using the total workforce as a proxy for the firm size variable, the magnitude of the coefficient on firm size means that adding 1 worker can increase the productivity of a business unit by 15.48%. It is understandable, considering that the average number of workers in the MSE group is in the range of 2.24 workers. This number may be less than the optimal number of workers for business units to carry out the production process. An increase in the number of workers will increase output with a proportion greater than the proportion of the addition of labor (increasing return to scale).

**Table 4.** Beneficiaries of the support program based on business size groups

No	Support Program	Small-Scale Business (5-19 Labors)		Micro-Scale Business (1-4 Labors)	
		Number	Proportion	Number	Proportion
1.	Financial	581	9.95%	4,797	5.75%
2.	Non-financial	193	3.31%	1,431	1.71%
3.	Financial & Non-financial	203	3.48%	2,042	2.45%
4.	No support at all	4,861	83.26%	75,173	90.09%
	Total	5,838	100.00%	83,443	100.00%

Source: Processed from 2019 Micro and Small Industry Survey (IMK Survey) data 2019 (BPS, 2020)

Identifying the proportion of recipients of the support program based on the size of the business group presented in Table 4, the business units receiving the support program for the small-scale enterprises' group are larger than the one receiving the support program for the micro-scale enterprises' group. When testing the research model is carried out in each business size group, several differences are found in the estimation results (Appendix). Company size positively and significantly affects labor productivity in the micro business group. Meanwhile, the small business group has no significant relationship between company size and labor productivity. The number of workers in the small business group is already optimal, so adding labor does not affect labor productivity.

In addition, there are significant differences in the magnitude of the coefficients of non-financial support variables. The coefficient of non-financial support in the small business group has a value of 0.2650. This figure is greater than the coefficient of non-financial support in the micro business group, which has a value of 0.1335. From the results of this

estimate, it can be said that the effect of non-financial support on the small business group is higher than that on the micro business group. Small-scale enterprises tend to be more complex with a larger business size than micro-scale enterprises. Therefore, non-financial support can significantly influence labor productivity in small-scale enterprises.

The micro-scale enterprises' contribution to the economy and employment is more significant than the small-scale enterprises. However, in general, the proportion of beneficiaries of support programs in the micro-scale enterprises' group is smaller than that in the small-scale enterprises' group. Therefore, the micro-scale Business group needs to get support programs in greater quantity, especially support programs in financial form.

#### Company Operational Age

The estimation results show a negative and significant relationship between operational age and labor productivity. Adding 1 year of company operational age will reduce the productivity of business units by 1.10%. Newer business units have

ideas or production techniques that are more up-to-date and efficient, so they have higher productivity than business units that have been operating for a longer time. Thus, it is necessary to provide non-financial support programs for business units operating longer. Non-financial support programs for business units that have been operating for a long time can provide technical or method updates related to the business being carried out so that the productivity of the business units can be higher. Meanwhile, new business units need more financial support to enter and survive in the market.

#### **Use of the Internet in Business Development**

The estimation results show a positive and significant relationship between internet use and productivity. Business units that use the internet have a productivity of 56.39% higher than those that do not use the internet in business development. It is in line with the results of research conducted by Dlodlo & Mafini (2014) and Najarzadeh et al. (2014) that the use of the internet in business has a positive and significant influence on labor productivity. Using the internet improves production techniques so that they are more efficient and ultimately increase productivity. In addition, internet use in business development can also increase the benefits of financial support. Given the important role of the internet in business activities, the use of online media that can be accessed via the internet can be an option for delivering non-financial support so that it can reach more business units.

#### **Food Industry Group**

The test results show differences in productivity and significance between the food industry and other industrial groups. The food industry group has labor productivity 5.52 percent higher than other industrial groups. It is shown by the coefficient of the food industry of 0.0552 and a significance level of 1%. These results reinforce that the food industry has a significant role in the economy. The provision of support programs further increases the contribution of the food industry group to the economy.

### **5. CONCLUSION, IMPLICATION, SUGGESTION, AND LIMITATIONS**

This study aims to analyze the effect of financial and non-financial support programs on the labor productivity of Micro and Small Enterprises (MSEs) in Indonesia empirically. By using the survey data of the 2019 Micro and Small Industries (IMK Survey) conducted by the Central Bureau of Statistics (BPS) of Indonesia, this study shows that business units

that receive financial support, non-financial support, or both forms of support at the same time, have the productivity of 28.12%, 16.04%, and 6.35%, respectively, higher than business units without any support. In general, it can be said that the provision of financial support is positively related to the productivity of all business-size groups. Meanwhile, non-financial support benefits small business groups more than micro-business groups. Judging from the operational business age, the provision of financial support has a greater impact on the productivity of newer business units. Meanwhile, non-financial support has a greater impact on business units operating longer. Research findings show that business units receiving financial support programs are statistically proven to have higher productivity than those without support.

The policy implication of the findings of this research is that the Government of Indonesia needs to provide financial support programs to more business units to improve the performance of MSEs. Furthermore, it is hoped to increase the national economy and create more jobs. To provide optimal benefits, support programs should be tailored to the needs of each business unit. In general, it can be said that the provision of financial support can increase the productivity of all business-size groups. Meanwhile, more non-financial support can be given to business groups with a larger size because it can provide higher benefits. Analysis of the age of the business, the provision of financial support is more needed by new business units to increase productivity. Meanwhile, non-financial support for business units that have been in operation for a long time is useful for updating techniques or methods related to the business being carried out. Online media use can be an option to increase the reach of non-financial support.

Data and information that provide a complete description of the condition of each business unit are needed to develop support programs or other policies according to the needs of business units. However, most MSEs are in the informal sector, so their business activities are not recorded. Using the national ID Number as the taxpayer identification number can be the right solution to facilitate MSEs to switch from the informal sector to the formal sector. One of the reasons for using data sourced from Statistics Indonesia in this study is the availability of accessible data. The limitation of this study is that the research period is only one year; it is 2019.

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**Appendix:** Estimation results per business size group

No	Variable	Ln Prod (Micro Business)	Ln Prod (Small Business)	Ln Prod (Micro and Small Businesses)
1	Financial	0.2522235*** (0.0177096)	0.2274464*** (0.0464825)	0.2811896*** (0.0169936)
2	Non-financial	0.1334518*** (0.0266559)	0.2649744*** (0.0760589)	0.1603673*** (0.0257927)
3	Financial * Nonfinancial	-0.346695*** (0.0446092)	-0.481103*** (0.1160593)	-0.3781015*** (0.0427454)
4	Size	0.3604819*** (0.0042699)	0.0006143 (0.0038229)	0.1547896*** (0.0019831)
5	Age	-0.0106069*** (0.0003733)	-0.008849*** (0.0013263)	-0.011013*** (0.0003668)
6	Internet	0.5602132*** (0.0246277)	0.4514976*** (0.058568)	0.5639412*** (0.0233798)
7	Food industry	0.0463761*** 0.0096659	0.2038193*** (0.0359552)	0.0551808*** (0.009525)
	Cons	14.03197*** (0.0105757)	14.43145*** (0.0077642)	14.40023*** (0.0082379)
	Observations	83,443	5,838	89,281
	Adj R-squared	0.1001	0.0279	0.0870

Source: Processed from STATA output (2022)