Micro Small Industries Performance Improvement: Analysis of the KUR Program

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Article Information	Abstract
	MSMEs contribute 61.07% to Indonesia's GDP, but over 40% face capital problems. Kredit Usaha Rakyat, or People's Business Credit (KUR), is a government program to solve that by giving subsidies through financial institutions to strengthen MSME's capital. Since 2015, the processing industry sector has been a priority sector of the KUR program, with KUR's realization target Micro Small Industries (MSI) is 40%, and the target continues to rise to 60% in 2019. This study analyzes the KUR program's impact on MSI performance in Indonesia. This study uses secondary cross-section data from the MSI survey of Badan Pusat Statistik or Central Bureau of Statistics (BPS) from 2014, 2015, and 2019 with Pooled Least Square (PLS) analysis method. The estimation results show that MSI who access the KUR program have a higher average income of 45% compared to MSI who do not access the KUR program. This means the KUR program significantly positively affects increasing MSI income in Indonesia. The results of the sub-sample analysis show that the income of the industrial sub-sectors, such as tobacco, paper, rubber, plastics, machinery, and equipment, are positively significantly affected by the KUR program, and the others, such as printing and recording media industry, base metals, computers, electrical equipment, electronic goods, motor vehicles, other transportation equipment, and repair services, installation of machinery and equipment are not significantly affected. Thus, the government should continue the KUR program, especially for the positively affected processing industry and sub-sector, to improve the performance of micro-small enterprises and industries in Indonesia.

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INTRODUCTION

The number of MSMEs in 2021 is 64.2 million, contributing to the Gross Domestic Product (GDP) of 61.07% or IDR 8,573.89 trillion (Ministry of Finance, 2021). MSMEs are the spearhead of the economy because, apart from MSMEs, they are the most significant contributor to GDP. From 2015 to 2019, MSMEs have contributed more than 50% to Indonesia's GDP. The significant decrease of 37.30% in 2020 was due to the COVID-19 pandemic, which spread to Indonesia in the first quarter of 2020. In 2021, the contribution of MSMEs increased again to 61.07% (Ministry of Finance, 2021). This makes MSMEs considered capable of surviving and being a savior of the economy during times of crisis, as in the 1998 monetary crisis and the 2008 global financial crisis. Although they contribute significantly to the Indonesian economy, MSMEs have various obstacles, and one of the most important is capital (Panduswanto & Murad, 2015).

More than 40% of MSMEs are constrained by higher capital problems than other problems (BPS Economic Census, 2017). In addition, only 7% of MSMEs use initial capital from banks (BPS Economic Census, 2017). This is because access to banking finance is complex, and 80% of MSMEs that require credit cannot access credit from financial institutions (BPS Economic Census, 2017). In addition, there are three main obstacles from the aspect of financing institutions that cause MSMEs not to obtain credit, namely the problematic assessment of MSMEs that have met the requirements, the low interest of MSMEs to be fostered, and MSME finances that have not been appropriately managed and regularly (BPS Economic Census, 2017).

Efforts from the government to advance MSMEs in dealing with capital problems, namely through the People's Business Credit (KUR) program with a subsidy pattern channeled by financial institutions to strengthen MSME capital to encourage the development of the real sector and empower MSMEs (Coordinating Ministry for the Economy, 2021). The KUR program provided credit loans with an interest rate of 6%, which was lower than other banking loan products. The KUR program implemented an interest subsidy scheme in which the government partially subsidized the interest borne by the debtor by calculating the difference between the credit interest rate and the interest rate paid by the debtor (Coordinating Ministry for the Economy, 2021). The government is doing this to accelerate the growth rate of MSMEs and help access capital. The realization of KUR distribution from 2015 to 2020 has continuously increased, so in 2020, the realization of KUR distribution reached IDR 198.53 trillion. The realization of KUR distribution from 2015 to 2020 amounted to IDR 670.5 trillion, with an outstanding IDR 231.2 trillion and Non-Performing Loans (NPL) of 0.46%. Good cooperation with banks in the KUR program overcomes government limitations in channeling KUR loan funds and is a breath of fresh air for MSMEs (Coordinating Ministry for the Economy, 2021). The manufacturing industry production sector is one of the priority business sectors of the KUR program, where the KUR realization target for Micro Small Industries (MSI) in 2015 was 40%, and this target continued to increase to 60% in 2019 (Coordinating Ministry for the Economy, 2021). The domination of the processing industry business sector also drove this. From 2017-2021, the processing industry contributed an average of 19.77% to GDP, the most significant contribution among other business sectors.

KUR budgets and realization have continuously increased in recent years. The realization of KUR for five years from 2015, amounting to IDR 22.75 trillion up to IDR 198.53 trillion in 2020. This increase reached IDR 175 trillion with an average yearly realization rise of IDR 35 trillion. A significant increase in the target and realization of KUR occurred in 2015-2016, with a target increase of IDR 70 trillion and an increase in the realization of IDR 71.25 trillion, and in 2019-2020, with a target increase of IDR 50 trillion and an increase in the realization of IDR 58.43 trillion, where in that year, KUR distribution was prioritized 40% (2015) to 60% (2019) for the manufacturing industry sector. Thus, it is essential to analyze further the KUR program's effect on the performance of MSMEs, especially in the manufacturing industry or MSI, a priority sector

for national KUR distribution. Improved business performance can be seen from the income of MSI actors when they get the KUR program.

Previous research related to microcredit programs has been conducted, such as research at microfinance institutions in Mongolia, India, and Lebanon, which found that microcredit has a positive impact on business performance in the country, especially from the profits and income of small and medium enterprises (Attanasio, O., et al., 2015; Banerjee, A., et. al., 2015; Jadoua, Z. A., et. al., 2020). In Bangladesh, microcredit significantly impacts household business income, expenses, and savings, where the education variable is essential in increasing it (Haque, A. C., et al., 2017). Research in Europe used data on SMEs in 13 European countries from 2003 to 2012, showing that trade credit significantly impacted the sustainability of SMEs constrained by financial problems (McGuinness G. et al., 2018). Research in Sweden utilizing data collected from SMEs between 2009 and 2012 reveals that profitability, short-term debt, and business volume significantly impact the growth of SMEs (Kachlami, H., & Yazdanfar, D., 2016).

Several other studies were conducted to determine the factors that influence the performance of MSMEs in Indonesia. Previous research showed that the effect of increasing credit on MSME output growth was relatively low (Panduswanto, P., 2015). Another study in Surabaya showed negative relationship between financial capital and business performance and a positive relationship between human capital, such as education level and partner involvement, and business performance (Atmadja, A. S. et al., 2016). Furthermore, micro-credit schemes and gender have no significant effect on MSE performance, but financial separation has a significant positive impact on MSE performance (Atmadja, A. S., et al., 2018). Another study was conducted by Hamzah, M. (2015) in Pati Regency. Shows the positive effect of the KUR program on increasing income at MSE in Pati Regency after they access the KUR program. In addition, research conducted by Sujarweni, V. W., & Utami, L. R. (2015) found that KUR had a significant effect on improving the performance

of MSME in D.I. Yogyakarta which is indicated by an increase in production costs, income, profits and working hours before and after receiving KUR. Then, research conducted by Putra, A. D. & Ketut, S. (2018) with an analysis unit of 99 units of MSME actors in Gianyar Regency using data collection techniques through questionnaires found a significant positive effect of KUR, level of education, and entrepreneurial spirit on MSME productivity.

Existing studies related to microcredit and KUR programs on the performance of MSMEs and MSI in Indonesia are still aggregate at the provincial or district/city analysis unit level, as was done by Panduswanto, P. et al. (2015) analyzed the effect of micro, small and medium credit on the output of MSMEs in Indonesia at the regional analysis unit level. Research related to KUR on improving the performance of MSMEs and MSI using the microanalysis unit level is usually a case study in one of the districts/cities in Indonesia using primary data, as was done by Hamzah, M. (2015) in Pati Regency, Sujarweni, V.W., et al. (2015) in Sleman Regency; Putra, A.D.et. al. (2018) in Gianyar Regency; Atmadja, A. S., et al. (2016, 2019) in Surabaya. So, this novelty study uses a national unit of analysis at the micro level using secondary data and quantitative analysis methods to see changes in behavior and a more appropriate response to the impact of the KUR program on MSI nationally.

Based on the research gap above, the research question is, "How does the KUR program influence the improvement of MSI performance in Indonesia?". So, the author's hypothesis to answer the question is that there is a positive relationship between the KUR program and increased MSI income in Indonesia.

RESEARCH METHODS

This study uses a quantitative approach with cross-sectional data for 2014, 2015, and 2019 at the unit of analysis at the Micro Small Industry (MSI) level in Indonesia. The data used include:

Table 1. Data Sources Used in Research

Variable	Denomination	Data Source
Income	Billion Rupiah	MSI survey, BPS
KUR	Dummy: 1 = if accessing KUR; 0 = if not accessing KUR	MSI survey, BPS
Cost/Expense	Billion Rupiah	MSI survey, BPS
Number of Employees	People	MSI survey, BPS
Entrepreneur Age	Year	MSI survey, BPS
Year of Schooling (YoS)	Consists of 8 categories of school years: 1) No school = 0 years 2) Elementary School = 6 years 3) Junior High School = 9 years 4) Senior High School = 12 years 5) Diploma degree = 14 years 6) Associate's Degree = 15 years 7) Bachelor's Degree =16 years 8) Master's/Doctoral Degree = 20 years	MSI survey, BPS
Business Age	Year	MSI survey, BPS
Average Working Hours	Hour	MSI survey, BPS
Male Workers Proportion	People	MSI survey, BPS
Partnership	*Dummy*: 1 = if forming partnerships; 0 = if not forming partnerships	MSI survey, BPS
Cooperative Membership	*Dummy*: 1 = if a member of the cooperative; 0 = if not a member of the cooperative	MSI survey, BPS
Training	*Dummy*: 1 = if join a training; 0 = if not, join a training	MSI survey, BPS
Province Population	People	National BPS
Total Length of Provincial Roads	Km	PUPR Ministry
Provincial Electrification Ratio	Ratio	Ministry of Energy and Mineral Resources and SIMREG Bappenas

Source: BPS, Ministry of PUPR, Ministry of Energy and Mineral Resources, Bappenas, 2022

They use micro-small industry (MSI) cross-section data for 2014, 2015, and 2019. Cross-section data for several years, called pooled cross-sections, are used to increase the sample size of the same population but at different time points so that an estimator is obtained that is more precise and able to test statistics better (Wooldridge, 2015). In pooled cross-section data, there is a possibility that the population is distributed differently in different periods, so a fixed effect variable is needed to control this (Wooldridge, 2015). This research used the *Pooled Least Square* (PLS) analysis method because of different respondents in every period and not repeated.

However, this study faced a limitation where the 2015 MSI cross-section data did not include the provincial code in the existing MSI observation units. The author used PLS Regression as the method in this study, dividing it into two models for separate analysis. The first is the provincial model based on regional analysis using cross-sectional data for 2014 and 2019 by including provincial fixed effects to control for differences in characteristics at the regional level. The second model is the 2-digit KBLI model based on sector analysis using cross-sectional data for 2014, 2015, and 2019 by including the KBLI fixed effect variable to control for differences in characteristics at the business sector level.

The first research model is based on regional analysis through PLS regression using provincial fixed effects, as follows:

$$LogIncome_{it} = \alpha_0 + \beta_1 KUR_{it} + \beta_2 Expense_{it} + \beta_3 Employee_{it} + \beta_4 Age_{it} + \beta_5 YoS_{it} + \beta_6 BusinessAge_{it} + \beta_7 WorkingHours_{it} + \beta_8 MaleProportion_{it} + \beta_9 Partnership_{it} + \beta_{10} Cooperative_{it} + \beta_{11} Training_{it} + \beta_{12} PROVpopulation_{it} + \beta_{13} PROVroad_{it} + \beta_{14} PROVelectrification_{it} + \varepsilon_{it} \dots\dots\dots (1)$$

The second research model is based on business sector analysis through PLS regression using the KBLI fixed effect, as follows:

$$LogIncome_{it} = \alpha_0 + \beta_1 KUR_{it} + \beta_2 Expense_{it} + \beta_3 Employee_{it} + \beta_4 Age_{it} + \beta_5 YoS_{it} + \beta_6 BusinessAge_{it} + \beta_7 WorkingHours_{it} + \beta_8 MaleProportion_{it} + \beta_9 Partnership_{it} + \beta_{10} Cooperative_{it} + \beta_{11} Training_{it} + \varepsilon_{it} \dots\dots(2)$$

RESULTS AND DISCUSSION

Research on this first model, the provincial model based on regional analysis, has the same number of 143,037 MSI observations in each variable with cross-sectional data in 2014 and 2019. Table 2. shows the average MSI income of IDR 5.80 billion, while the average MSI expenditure of IDR 3.34 billion. The average number of workers in MSI observations was 2.34 or between 2-3 people, including business owners, with a minimum of 1 worker and a maximum of 19 people. This is in line with the industry classification determined by BPS, where micro industries have 1-4 workers and small enterprises have 5-19 workers, so it can be said that the average MSI observation unit is a micro-industry player.

Furthermore, it can be seen that the average age of business owners in this observation is 46.21, ranging from 46 to 47 years. Then, the average length of the school year for MSI actors in this observation is 7.53 years, or it can be said that the average number of years of education completed is at the elementary to junior high school levels, with the lowest school year being 0 years and the most extended school year is 20 years. Furthermore, the average length of business is 13.56, ranging from 13 to 14 years, with the youngest business being established for one year and the oldest operating for 119 years. Then, the average business hours are 6.5 hours per day. Meanwhile, the average proportion of male workers is 50%, which indicates that the average number of workers is balanced between men and women.

Table 2. Descriptive Statistic Province Model 2014 - 2019

Variable (n=143.037)	Mean	Std. Dev.	Min	Max
Income (billion)	5,80	98,88	0	18.000
KUR	,04	,20	0	1
Expense (billion)	3,34	57,14	0	10.000
Employee	2,34	2,18	1	19
Age	46,21	11,32	12	99
Years of Schooling	7,53	4,46	0	20
Business Age	13,56	10,95	1	119
Working Hours	6,47	2,23	1	24
Male Proportion	,50	,41	0	1
Partnership	,09	,28	0	1
Cooperative	,02	,16	0	1
Training	,04	,20	0	1

Source: Data Processed, 2023

From the total number of observations of 143,037 MSI, as explained above, the authors divided the number of observations accessing KUR and those who did not access KUR in 2014 and 2019. Table 3. shows that MSI actors accessing KUR were 6,380 or 4.46% of the total observations. The average income of MSI actors who access KUR is IDR 13 billion, and the

average expenditure is IDR 6.83 billion. Meanwhile, MSI observations that do not access KUR have an average income of IDR 5.46 billion and an average spending of IDR 3.18 billion. Then, the average number of workers in observation who accessed KUR was 3.28 or ranged from 3 to 4, while the average number of workers who did not access KUR was 2.29 or ranged from 2 to 3. The average age of the observation that accesses KUR is around 44 years old, while the period of observation that does not access KUR is about 46 years old. The average length of school years in observations who accessed KUR was 9.12 years or years of education completed at the junior high school to high school/vocational school levels, while the average length of school years that did not access KUR was 7.45 or years of education that were graduated from elementary to high school. The average length of observation businesses that accessed KUR ranged from 11 to 12 years of existence, while the average length of businesses that did not access KUR ranged from 13 to 14 years. The average proportion of observed male workers who access KUR is 69% higher than that of surveyed male workers who do not, which is more balanced at 50%.

Table 3. Descriptive Statistic KUR and Non-KUR Province Model

Variable	KUR (n=6.380)		non-KUR (n=136.657)	
	Mean	Std. Dev.	Mean	Std. Dev.
Income (billion)	13,00	180,62	5,46	93,31
Expense (billion)	6,83	70,70	3,18	56,43
Employee	3,28	2,73	2,29	2,14
Age	44,18	9,72	46,31	11,38
Years of Schooling	9,12	4,12	7,45	4,45
Business Age	11,56	9,22	13,66	11,02
Working Hours	7,28	2,01	6,43	2,23
Male Proportion	,69	,36	,50	,41
Partnership	,15	,36	,08	,28
Cooperative	,04	,20	,02	,15
Training	,08	,27	,04	,19

Source: Data Processed, 2023

Furthermore, this second model, the 2-digit KBLI model based on sector analysis, has the same number of 198,831 MSI observations in each variable. The number of observations in the second model is more significant than in the first model because it uses cross-sectional data from 2014, 2015, and 2019. Table 4. shows the average MSI income of IDR 5.58 billion, while the average MSI expenditure of IDR 3.30 billion.

Furthermore, the average number of workers in the MSI observation was 2.34 or ranged between 2-3 people, including business owners, with a minimum of 1 worker and a maximum of 19 people, so it can be said that the average MSI observation unit is a micro actor industry. Then, it can be seen that the average age of business owners in this observation is 46.15, ranging from 46 to 47 years. Then, the average school years for MSI actors in this observation was 7.43 years, or the average number of years of education completed at the elementary to junior high school levels, with the lowest school year length of 0 years and the highest school year of 20 years. Furthermore, the average length of business is 13.53, ranging from 13 to 14 years, with the youngest business being established for one year and the oldest operating for 119 years. Then, the average business hours are 6.5 hours per day. Meanwhile, the average proportion of male workers is 50%, which indicates that the average number of workers is balanced between men and women.

Table 4. Descriptive Statistic KBLI Model 2014, 2015, 2019

Variable (n=198.831)	Mean	Std. Dev.	Min	Max
Income (billion)	5,58	88,07	0	18.000
KUR	,03	,19	0	1
Expense (billion)	3,30	54,23	0	10.100
Employee	2,34	2,18	1	19
Age	46,15	11,30	12	99
Years of Schooling	7,43	4,42	0	20
Business Age	13,53	10,96	1	119
Working Hours	6,53	2,24	1	24
Male Proportion	,50	,41	0	1
Partnership	,09	,28	0	1
Cooperative	,02	,16	0	1
Training	,04	,20	0	1

Source: Data Processed, 2023

From the total number of observations of 198,831 MSI as described above, the authors divided the number of observations who accessed KUR and those who did not access KUR in 2014, 2015, and 2019, as was done in the first model. Table 5. 7,795 MSI actors accessed KUR, or 3.92% of the total observations. The average income of MSI actors who access KUR is IDR 13.92 billion, and the average expenditure is IDR 7.81 billion. Meanwhile, the observation is that MSI who do not access KUR has an average income of IDR 5.24 billion, and the average spending is lower by IDR 3.12 billion. Then, the average number of workers in observation who accessed KUR was 3.31 or around 3 to 4 workers, while the average number of workers who did not access KUR was 2.30 or ranged from 2 to 3.

Furthermore, the average age of the observation that accesses KUR is around 44 years old, while the period of observation that does not access KUR is about 46 years old. The average length of school years in observations that access KUR is 9.05 years or years of education completed at the junior high school to high school/vocational school levels. In comparison, the average school year that does not access KUR is 7.37 years or years of education from elementary to middle school. The average length of observation businesses that accessed KUR ranged from 12 to 13 years of existence, while the average length of businesses that did not access KUR ranged from 13 to 14 years. The average proportion of observed male workers who access KUR is 69% higher than that of surveyed male workers who do not, which is more balanced at 49%.

Table 5. Descriptive Statistic KUR and Non-KUR KBLI Model

Variable	KUR (n=7.795)		non-KUR (n=191.036)	
	Mean	Std. Dev.	Mean	Std. Dev.
Income (billion)	13,92	162,72	5,24	83,60
Expense (billion)	7,81	70,49	3,12	53,46
Employee	3,31	2,74	2,30	2,14
Age	44,14	9,76	46,24	11,35
Years of Schooling	9,05	4,11	7,37	4,42
Business Age	12,68	10,30	13,56	10,98
Working Hours	7,33	2,03	6,50	2,24
Male Proportion	,69	,35	,49	,41

Variable	KUR (n=7.795)		non-KUR (n=191.036)	
	Mean	Std. Dev.	Mean	Std. Dev.
Partnership	,16	,37	,08	,28
Cooperative	,05	,22	,02	,16
Training	,09	,28	,04	,20

Source: Data Processed, 2023

Furthermore, based on the descriptive statistics of the KBLI model who received KUR and those who did not receive KUR, it is further explained to look at the observation statistics per business sub-sector grouped based on the 2-digit KBLI code. The processing industry sub-sectors (19) and (23) are grouped into one because the number of observations is too small in the processing industry sub-sector (19). Coal and petroleum refining products are an industry similar to the industrial sub-sector processing (23) Non-metallic minerals. It can be seen in Table 6. that most MSI actors who access KUR are in the processing industry sub-sector (10) Food as many as 1,595 MSI and MSI actors who access KUR are at least in the processing industry sub-sector (26) Computers and electronic goods 2 MSI.

Then, the most significant average income and expenses are in the processing industry sub-sector (27) Electricity with an average income of IDR 50.14 billion and an average expenditure of IDR 38.82 billion, while the smallest average income and expenses are in the processing industry sub-sector (11) Beverages with an average income of IDR 560 million and an average expenditure of IDR 320 million. The average age of the oldest business owners is in the processing industry sub-sector (21) Pharmaceuticals and medicines with an average age of 50 years, and the youngest average age of business owners is in the processing industry sub-sector (18) Printing and recording media whose average age is 42 years.

In addition, the processing industry sub-sector (18) Printing and recording media also has the highest average length of school years of 12 years or years of education completed at the SMA/SMK level, while the lowest average length of school years is in the sub-sector. Manufacturing industry sector (12) Tobacco for five years or did not finish elementary school. Furthermore, the oldest average length of business establishment is in the processing industry sub-sector (16) Wood with an average age of establishment of 16 years, and the youngest average length of establishment is in the processing industry sub-sector (22) Rubber and plastic with an average standing age of 11 years.

Table 6. Descriptive Statistic based on Sub-Sector KBLI-2 digit

KBLI Code	Summary		Mean (Average)				
	KUR	non-KUR	Income	Expense	Age	YoS	Business Age
10	1.595	57.210	5,98	4,51	46,91	7,20	12,7
11	299	6.733	0,56	0,32	45,32	9,31	12,32
12	113	2.867	10,00	4,47	49,71	5,54	15,07
13	356	15.159	1,61	0,81	43,23	6,45	15,14
14	1.040	21.614	5,75	3,32	44,21	9,34	13,30
15	195	3.430	13,79	8,66	42,94	8,47	13,29
16	836	31.300	2,38	1,28	48,09	5,64	15,99
17	33	518	5,01	3,34	45,52	8,52	12,97
18	229	3.030	10,98	5,08	42,07	12,21	11,63
20	67	1.602	8,36	4,87	48,02	6,32	12,42
21	24	642	2,72	1,04	50,39	7,69	13,20
22	50	1.324	9,39	5,70	44,01	7,93	11,08
19 & 23	1.005	18.300	4,65	0,85	47,05	6,91	12,37
24	8	511	6,49	2,17	41,87	8,01	12,02
25	707	9.210	6,72	3,65	45,18	8,77	13,64
26	2	66	11,07	2,611	44,09	11,19	15,54
27	5	83	50,14	38,82	47,16	8,83	15,65

KBLI Code	Summary		Mean (Average)				
	KUR	non-KUR	Income	Expense	Age	YoS	Business Age
28	18	270	31,87	15,20	47,57	10,09	13,70
29	34	263	16,14	6,09	45,69	9,98	12,76
30	47	1.365	19,09	8,15	46,92	6,28	13,98
31	793	7.755	10,40	5,72	45,76	8,64	13,08
32	296	7.308	10,43	7,33	45,77	7,66	12,51
33	43	476	2,24	0,99	46,09	9,69	12,74

Source: BPS, 2014, 2015, 2019 (data processed)

Discussion of Estimation Results

Table 7. shows the results of the first equation model, namely an analysis by including regional variables at the provincial level with cross-sectional data for 2014 and 2019 and the PLS method. The results show that the coefficient value of the KUR variable is positive, which is equal to 0.719 in column (1), 0.486 in column (2), 0.476 in column (3), 0.457 in column (4), and 0.459 in column (5). The coefficient results in column (1) still overestimate the effect of KUR on increasing income because it is still a basic model by only including KUR variables and expenditure control variables (as a representation of capital) and the number of workers according to production input theory, but have not included several other control variables that can affect income. This result remains consistently positive and gets smaller, indicating a positive (overestimated) bias is further corrected when other control variables are added in column (2) to column (5). Column (5) is the best equation showing that the KUR variable's coefficient value is consistently positive by 0.459 on income, which is significant at the

1% level after including all control variables that influence internal and external business, year-time effect variables, and provincial fixed effects. These results indicate that MSI actors who access KUR will have a 45.9% higher income than those who do not. Column (5) also shows that control variables such as expenses, number of workers, length of the school year, working hours, the proportion of male workers, partnerships, cooperatives, training, and population size positively correlate with income with a significance at the 1% level.

Meanwhile, the opposite direction is shown by the variable length of business and length of provincial roads that negatively correlate with income, which is significant at 10% and 1%, respectively. The coefficient of determination (Adjusted R-squared) is 0.493 in column (5), which shows that the variation of all independent variables in the empirical equation model can explain up to 49.3% of the variance of MSI income. In contrast, the rest is explained by variations in other variables that are not observed in models.

Table 7. Estimation Result Province Model

Variable: LogIncome	(1) PLS	(2) PLS	(3) PLS	(4) PLS	(5) PLS
KUR	0.719***	0.486***	0.476***	0.457***	0.459***
	(0.0198)	(0.0187)	(0.0187)	(0.0187)	(0.0187)
Income	0.00796***	0.00784***	0.00784***	0.00786***	0.00782***
	(7.26e-05)	(6.82e-05)	(6.82e-05)	(6.78e-05)	(6.75e-05)
Employee	0.477***	0.428***	0.425***	0.426***	0.431***
	(0.00194)	(0.00186)	(0.00188)	(0.00190)	(0.00191)
Age		0.00169***	0.00176***	0.000759*	-0.000091
		(0.000428)	(0.000428)	(0.000428)	(0.000428)
YoS		0.0489***	0.0484***	0.0420***	0.0406***
		(0.000990)	(0.000992)	(0.00101)	(0.00101)
BusinessAge		-0.00346***	-0.00353***	-0.00218***	-0.000729*
		(0.000435)	(0.000435)	(0.000436)	(0.000437)
WorkingHour		0.0898***	0.0893***	0.0915***	0.0885***
		(0.00190)	(0.00190)	(0.00190)	(0.00192)

Variable: LogIncome	(1) PLS	(2) PLS	(3) PLS	(4) PLS	(5) PLS
		(0.0102)	(0.0102)	(0.0102)	(0.0102)
Partnership			0.0843***	0.105***	0.121***
			(0.0142)	(0.0142)	(0.0142)
Cooperative			0.0814***	0.113***	0.144***
			(0.0245)	(0.0244)	(0.0244)
Training			0.126***	0.126***	0.112***
			(0.0196)	(0.0195)	(0.0194)
PROVpopulation				-5.73e-06***	0.000027***
				(2.52e-07)	(0.00001)
PROVroad				0.000037***	-0.00009***
				(3.69e-06)	(0.000025)
PROVelectrification				0.0122***	-0.00404
				(0.000442)	(0.00128)
i.year	NO	NO	NO	NO	YES
i.prov	NO	NO	NO	NO	YES
Observations	128,763	128,763	128,763	128,763	128,763
Adjusted R-squared	0.413	0.482	0.482	0.487	0.493

Note: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1
Source: Data Processed, 2023

The analysis of the results of the estimation of the second equation model is shown in Table 8. The PLS method explains the analysis results by including sector variables based on the 2-digit KBLI with cross-sectional data for 2014, 2015, and 2019. Results in Table 4.7. shows that the coefficient value of the KUR variable is positive, which is equal to 0.739 in column (1), 0.507 in column (2), 0.496 in column (3), and 0.435 in column (4).

The results of the coefficient correlate in a positive direction starting from column (1) but still overestimate the effect of KUR on MSI income because it is still the basic model by only including the KUR variable and the control variables on expenses and the number of workers, so when other control variables are added in column (2) to column (4) the coefficient is getting smaller which indicates a positive (overestimated) bias is getting corrected and remains consistent in a positive direction.

In Table 4.6, column (4) is the best model to show that the coefficient value of the KUR variable is consistently positive on an income of 0.435, which is significant at the 1% level because it includes control variables, year-time effect variables, and KBLI fixed effect variables. These results suggest that MSI actors who access KUR will have a 43.5% higher income than those who do not. Column (4) also shows a similar estimate on the correlation of the effect of control variables such as expenses, number of workers, length of the school year, hours of work, the proportion of male workers, partnerships, cooperatives, and training that are positive on income with a significance at the 1% level. The opposite direction is shown by the variables age and length of business, which have a significant negative correlation with income at 1% and 10%, respectively. The coefficient of determination (Adjusted R-squared) in this second model is 0.494 in column (4), which shows that the variation of all independent variables in this second equation explains up to 49.4% of the variance of MSI income.

Table 8. Estimation Result KBLI Model

Variables: LogIncome	(1) PLS	(2) PLS	(3) PLS	(4) PLS
KUR	0.739***	0.507***	0.496***	0.435***
	(0.0179)	(0.0169)	(0.0169)	(0.0168)
Income	0.00904***	0.00890***	0.00890***	0.00882***
	(6.48e-05)	(6.10e-05)	(6.10e-05)	(6.01e-05)
Employee	0.462***	0.410***	0.407***	0.407***
	(0.00164)	(0.00159)	(0.00161)	(0.00167)
Age		0.000819**	0.000843**	-0.000810**
		(0.000339)	(0.000339)	(0.000337)
YoS		0.0480***	0.0476***	0.0424***
		(0.000845)	(0.000847)	(0.000871)
BusinessAge		-0.00149***	-0.00151***	-0.000574*
		(0.000332)	(0.000332)	(0.000328)
WorkingHour		0.0936***	0.0931***	0.105***
		(0.00161)	(0.00161)	(0.00163)
MaleProportion		0.911***	0.917***	0.864***
		(0.00866)	(0.00867)	(0.0100)
Partnership			0.0736***	0.111***
			(0.0122)	(0.0120)
Cooperative			0.137***	0.129***
			(0.0204)	(0.0201)
Training			0.0942***	0.0948***
			(0.0163)	(0.0160)
i.year	NO	NO	NO	YES
i.kbli	NO	NO	NO	YES
Observations	178,311	178,311	178,311	178,311
Adjusted R-squared	0.408	0.476	0.477	0.494

Note: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1
Source: Data Processed, 2023

The findings are in Table 9. and Table 10, which are the results of estimating the impact of KUR on income based on provincial area analysis and KBLI sector analysis, showing similar results, where KUR's effects are significantly positive on increasing revenue. However, it can be seen from the analysis model by a province that the influence of KUR on the increase was slightly more substantial, namely 45.9% for MSI who accessed KUR compared to those who did not access KUR.

Meanwhile, in the sector analysis model, the effect of KUR on increasing income is slightly lower by 43.5%. Similar results have been supported by several previous studies, indicating that microcredit increases business profits and revenue (Attanasio O. et al., 2015., & Banerjee A. et al., 2015). These results are also in line with previous research that KUR has a positive correlation with income and business performance, so every access to KUR capital by

MSI actors will increase revenue by the coefficient on the estimation results (Putra, I. et al., 2013; Hamzah, M. ., 2015; Sujarweni, V. et al., 2015; Putra, A. D. et al., 2018). This follows the objectives of the KUR program, namely to encourage the development of the real sector and empower MSMEs and cooperatives with one focus on the industrial sector. A KUR interest rate of 6% (2021), lower than the average market interest rate of 10.5%, makes it easier for MSI to bear interest costs. Thus, the distribution of KUR can be increased considering its significant effect on increasing business income, in this case, MSI.

The impact of the influence of KUR on income in both models of analysis is supported by several internal factors of MSI itself. Internal factors supporting KUR's effect on increasing income include business costs/expenses, number of business employees, education of business owners, business working hours, and the gender proportion of business employees. The effect of

MSI expenditure costs measures the addition of MSI capital from accessing the KUR program, which represents the capital input factor (Bertschek and Kaiser, 2004) and represents the value of utilization of capital goods for the production process (Bosworth, 1974, 1976) thereby increasing productivity and income. Likewise, with the number of MSI workers, where MSI is also a component of production inputs, with the increasing addition of the number of workers to a specific limit owned by the company, it can be an internal resource that has a positive effect on the growth of business volume, including one in terms of income (Kachlami & Yazdanfa, 2016).

The productivity of MSI in improving its business performance can also be seen through working hours for MSI production, where access to KUR capital also causes an increase in working hours (Sujarweni, V. W., & Utami, L. R., 2015). In addition, MSI owners are people who are responsible for making decisions on accessing and managing the KUR capital program to increase business income, so business owner education plays an essential role in it (Babajide, A., 2012; Atmadja, AS, et al., 2016; Haque, A. C., et al., 2017; Putra, A. D. & Ketut, S., 2018), where the higher the number of years of education of MSI owners will further increase MSI income. Then, MSI owned and managed by men are more likely to perform better than those owned and operated by women, thereby increasing revenue and profits for MS.

The results are different, where internal factors such as the age of MSI owners (in the KBLI model) and the length of business of MSI (in the provincial and KBLI models) have a negative effect on income. When the age of the business owner and the length of the business is getting older, the company does not develop, does not increase sales, not expand the product market, and does not access other sources of capital, including KUR capital (Kachlami, H., & Yazdanfar, D., 2016). This suggests that a relatively young MSI (Micro, Small, and Medium-sized Enterprise) is likely to grow at a faster rate compared to an MSI that has been established for a longer period. (Babajide, A., 2012).

The influence of MSI external factors goes hand in hand with the KUR program in increasing income, as well as external factors that support the KUR program in influencing income, including partnerships, cooperative membership, and training. Cooperation between industry players positively affects income (Kachlami & Yazdanfar, 2016). The stronger the partnership between MSI actors and more profitable business actors, the greater the potential to stimulate profits and foster business growth. Likewise, MSI's participation as a cooperative member increases MSI's income. In addition, relevant training regarding effective business or management affects performance improvement in both sales and profits (Mukata et al., 2018). Thus, for the government to maximize the benefits of channeling the KUR program into increasing MSI income, it must be followed up with other programs that help develop and empower MSI.

Furthermore, an analysis based on the region through the provincial model shows that the population size is the basic model for the characteristics of an area to see the effect of the KUR program on business income (Banerjee et al., 2015). It is suspected that the more the population in a province, the higher the KUR disbursement activity from financial institutions and consumption activities that occur in that province. KUR distribution and high consumption activity will encourage sales and income from MSI actors in an area. However, different results were found for the variable length of provincial roads, which negatively correlated with MSI income. Economic infrastructure, one of which is roads, is a supporting factor influencing differences in MSI performance in various regions (Jena, N. R., & Thatte, L. R., 2018). The length of the road used in this study is the total length of provincial highways, which includes roads in good condition (categorized as Great_km) and roads with unfavorable conditions (categorized TMantap_km) based on the Ministry of PUPR (2020). The poor state of provincial road infrastructure is thought to make it difficult for MSI actors to access KUR capital at financial institutions in their respective provinces. It also

makes it difficult to carry out their business activities, thus affecting MSI's income.

So, the results show that the KUR program positively affects increasing MSI income in Indonesia. Therefore, the KUR program is worth maintaining and rising, especially distribution to the production or manufacturing sector, because it provides positive benefits and impacts in helping with capital problems and increasing the income of small businesses and micro industries with lower interest rates than the average market interest rate for financial institutions.

External factors that also affect MSI income, such as cooperation/partnership, cooperative membership, and training guidance, show that in achieving the goal of improving MSI performance in Indonesia, the distribution of the KUR program to MSI also needs to be followed by other programs that help develop and empower MSI businesses.

Furthermore, a further heterogeneity test was carried out through sub-sample analysis based on the BPS 2-digit KBLI sector code to find out which processing industry sub-sectors were most affected by the existence of the KUR program on increasing income and which were not affected. Tables 8 and 9 show the results of the estimated regression of MSI using the PLS method in 2014, 2015, and 2019, which have been grouped into 23 industrial sector groups according to the BPS 2-digit KBLI code. The results of the sub-sample analysis show that the KUR program has the most significant impact on increasing income in the processing industry sub-sector (12) Tobacco; (17) Paper and paper products; (22) Rubber, rubber, and plastic goods; (28) Machinery and Equipment; and (32) other processing where the positive KUR coefficient is (12) 1.081; (17) 0.821; (22) 0.851; (28) 1.071; and (32) 0.865 to increase in income. Thus, MSI actors who access KUR in this sub-sector will increase their income to above 100% higher than those who do not. This processing industry sub-sector can become a priority processing industry sub-sector for channeling access to KUR capital because the perceived influence is the greatest among other sub-sectors on business performance, as seen from increased income.

Table 9. Sub-Sample Estimation Result KBLI 10-22

Variables LogIncome	KBLI 10	KBLI 11	KBLI 12	KBLI 13	KBLI 14	KBLI 15	KBLI 16	KBLI 17	KBLI 18	KBLI 20	KBLI 21	KBLI 22
	PLS	PLS	PLS	PLS	PLS	PLS	PLS	PLS	PLS	PLS	PLS	PLS
KUR	0.488***	0.177***	1.081***	0.691***	0.416***	0.605***	0.549***	0.821***	-0.145	0.713***	0.386*	0.851**
	(0.048)	(0.054)	(0.254)	(0.090)	(0.059)	(0.134)	(0.057)	(0.222)	(0.106)	(0.253)	(0.216)	(0.341)
Control Var.	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
i.year	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	55,844	6,871	2,891	11,554	21,254	3,513	22,428	460	3,233	1,536	624	1,121
Adj. R-squared	0.439	0.362	0.410	0.638	0.536	0.658	0.570	0.668	0.415	0.500	0.490	0.637

Table 10. Sub-Sample Estimation Result KBLI 23-33

Variables LogIncome	KBLI 19 & 23	KBLI 24	KBLI 25	KBLI 26	KBLI 27	KBLI 28	KBLI 29	KBLI 30	KBLI 31	KBLI 32	KBLI 33
	PLS	PLS	PLS	PLS	PLS	PLS	PLS	PLS	PLS	PLS	PLS
KUR	0.205***	-0.190	0.235***	0.713	-0.711	1.071*	0.141	-0.163	0.199***	0.865***	0.111
	(0.0398)	(0.338)	(0.0638)	(0.776)	(0.375)	(0.617)	(0.311)	(0.384)	(0.0581)	(0.146)	(0.198)
Control Var.	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
i.year	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	19,028	518	9,814	67	81	287	297	1,411	8,511	6,464	504
Adj. R-squared	0.402	0.553	0.470	0.456	0.731	0.567	0.505	0.385	0.544	0.522	0.554

Note: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1
Source: Data Processed, 2023

So, the results of the sub-sample analysis show that the income of the industrial sub-sectors that are positively and significantly affected by the KUR program is not affected. Thus, in making further distributions, the government can prioritize the industrial sub-sectors that are most affected by the KUR program, such as the tobacco, paper, rubber, plastics, machinery, and equipment manufacturing sub-sectors, but continue to make distributions to other processing industry sub-sectors, except for the sub-sectors such as printing and recording media industry, base metals, computers, electrical equipment, electronic goods, motor vehicles, other transportation equipment, and repair services, installation of machinery and equipment, because these sub-sectors are not significantly affected by the presence of the KUR program on increased income.

CONCLUSION

Based on the estimation results in this study, it is concluded that the KUR program for MSI in Indonesia positively affects MSI performance, as seen from increased income, in line with the proposed research hypothesis. Other factors that become control variables and significantly influence the variable MSI business income are business expenses, number of workers, entrepreneur age, education of business owner, length of business, average working hours per day, male workers proportion, partnerships, cooperative membership, and training guidance, as well as regional characteristics such as population size and road length. The estimation results of the sub-sample analysis show that the KUR program has a significant positive effect on income in all types of industrial sub-sectors except for the sub-sectors of the printing and recording media industry, base metals, computers, electrical equipment, electronic goods, motorized vehicles, other transportation equipment and repair services, installation of machinery and equipment.

So the authors suggest several recommendations where the KUR program is worth maintaining and increasing, especially distribution to the production sector or processing industry because it provides positive benefits and impacts in helping with capital problems and increasing the income of business actors and small micro-enterprises with interest rates lower than the average market interest rates for financial institutions. External factors that also affect MSI's income, such as partnership, cooperative membership, and training guidance, show that in achieving the goal of improving MSI's performance in Indonesia, the distribution of the KUR program to MSI also needs to be followed by other programs that help develop and MSI business empowerment. The results of the sub-sample analysis show that the income of the industrial sub-sectors that are positively and significantly affected by the KUR is not affected.

Thus, in subsequent distributions, the government can prioritize the industrial sub-sectors most affected by the KUR program, such as the tobacco, paper, rubber, plastics, machinery, and equipment processing industry sub-sectors, but continue to distribute to the processing industry sub-sector. Others, except for the sub-sectors of the printing and recording media industry, base metals, computers, electrical equipment, electronic goods, motor vehicles, other transportation equipment, and repair services, installation of machinery and equipment because these sub-sectors were not significantly affected by the existence of the KUR program to increase income. This research is limited to an analysis that only uses three years of data related to MSI in Indonesia, namely in 2014, 2015, and 2019. This study also only looked at the effect of the KUR program on improving MSI performance, as seen from income. So, more in-depth studies and research are needed related to the influence of the KUR program on the other business performance indicators over a more extended period.

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