Analysis of Competitiveness and Government Policy Impact in Batik Pekalongan

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Article Info	Abstract
	_____ The aim of this study is to analyze the competitiveness and impact of government policy and policy simulation on Batik SMI (Small and Medium Industry) in Pekalongan City. This research used quantitative research method by using Policy Analysis Matrix (PAM) analysis tool and policy simulation model. Sampling techniques which were used in this research were Cluster Random Sampling and Proportional Random Sampling. The results of PAM analysis showed that Batik SMI in Pekalongan City had comparative competitiveness and competitive competitiveness. Government policy has been able to protect Batik SMI in Pekalongan City, especially from the input factor side. Another policy alternative which still can be tolerated to maintain and improve competitiveness is by giving 20% Basic Electricity Tariff (BET) subsidy, 10% coloring drug subsidies, and an additional 5% value added, For the owner of Pekalongan Batik SMI it is suggested that they should be able to maintain their competitiveness in terms of increasing their effectiveness, efficiency and productivity, and for the government it is necessary to review the policies from the output side in order to protect Batik SMI in Pekalongan City.

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INTRODUCTION

Government policy in industrial field is needed to protect and assist core competence development owned by the industry. Core competence development is expected to improve the competitiveness of national industry so that its performance is measurable and easy to evaluate its development programs, (Paramitha & Nurcahyo, 2018). It can be done through increasing competitiveness policy and developing SME cluster policy, those are empirical evidence in Indonesia, (Ma'ruf et al., 2017).

Batik industry is a creative economy industry. It has major role as driver of pro-people economic growth, has contribution to create jobs and has increased community's income, (Pinasti & Adawiyah, 2016). Pekalongan City is one of the biggest batik producing cities in Indonesia. Pekalongan City has been designated as Creative City network in the category of Craft and Folks Arts by UNESCO in December 2014. This has encouraged Pekalongan City to be the first Creative City in Indonesia even in Southeast Asia region, (Setyanti, 2015). Where, the batik industry including Batik SMI is one of Pekalongan's infrastructure assets to become a creative city, (Paramita, 2010) and (Nurhasanah, et al, 2016) The research's results of Damayanti and Latifah (2015) also found that creative industries which was Batik SMI in Pekalongan were very unique and had strategic position in Pekalongan City as one of central industry in Java.

The development of Pekalongan Batik SMI continues to increase from year to year and it has quite good contribution to GRDP (Gross Regional Domestic Product). The contribution of processing industry to GRDB of Pekalongan City based on the current price averagely is 21.67% or Rp1.5 trillion with growth rate as much as 6.23% (Badan Pusat Statistik, 2017). The number of workers in processing industry in Pekalongan City on 2017 reached 55,159 people and most of them worked in batik industry sector (Republika, 2017). This has an impact on the increasing number of batik industries in Pekalongan City. The following is data of development of Batik

Small and Medium Industries in Pekalongan City.
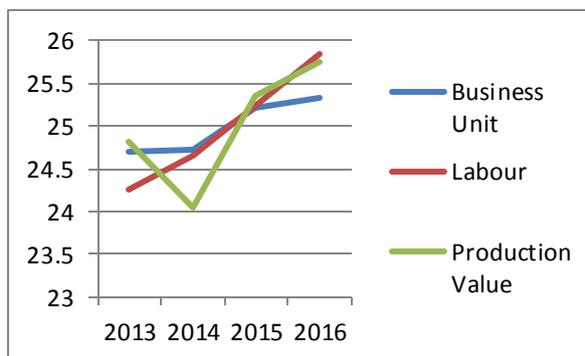
Picture 1. Development of Batik SMI in Pekalongan City Period 2013-2016.
Source: (Dipernaker Kota Pekalongan, 2017).

The development of business units, workers, and the production value of Batik SMI in Pekalongan tends to increase from year to year. However, the Pekalongan Batik SMI still faces many problems, especially in obtaining raw materials. There are some problems in supplying wax and coloring drugs such as the increase in import prices, which is very burdensome for Batik SMI in Pekalongan, (Diskoperindag Kota Pekalongan, 2017).

Table 1. Development of Batik SMI in Pekalongan Period 2013-2016

Year	Business Unit	Workers	Production Value (Billion)
2013	860	11.811	7.771.490
2014	861	12.004	7.532.470
2015	878	12.288	7.940.923
2016	882	12.580	8.063.467

Source: (Dipernaker Kota Pekalongan, 2017).

In addition, the raw material for Pekalongan batik production such as fabric, wax, as well as the majority of batik coloring drugs are fulfilled from foreign markets (imports), so it is very vulnerable to changes mainly changes in the value of dollar exchange rate which tends to increase (Kemenperin.go.id, 2015). In addition, the existence of policy in the increasing of

Minimum Wage for Work (MWK), rising fuel prices, the increase in Basic Electricity Tariff (BET), and also policy on international trade barriers have caused competitiveness to decline (Thoburn, 2010). The increase in production input costs of Batik SMI in Pekalongan City will cause inefficient SMI. According to Prasetyo (2017) the inefficient use of inputs will hamper industrial productivity and competitiveness. If the productivity of commodity is hampered, then the competitiveness of commodity will also be hampered.

The existence of wage increase policy in batik industry sector in Pekalongan and the policy of increasing the Basic Electricity Tariff (BET) will cause production input costs to increase. The increase in production input costs will reduce efficiency level which will also cause output prices to be less competitive Prasetyo et al., (2014). The impact of those policies can also hamper company's cash flow. According to Porter (1990) productivity is a key of competitiveness. When production costs increase, the company will tend to reduce production both in quality and in quantity which will decrease the productivity so that the competitiveness of batik SMI will also decrease. In addition, the existence of government intervention in the form of policy affects comparative competitiveness and competitiveness, (Ratnasari & Prasetyo, 2016).

The research's results of Meutia (Improving Competitive Advantage and Business Performance through the Development of Business Network, Adapability of Business Environment and Innovation Creativity: An Empirical Study of Batik Small and Medium Enterprises (SME) in Pekalongan, 2013) on batik SMI in Pekalongan have explained that through business networks and adaptation to business environment can increase competitive advantage. Based on SEM model, it is explained that business networks significantly affect competitive advantage, and then it can significantly affect Pekalongan Batik SMI business performance. That research also explained that through measuring the ability of entrepreneurs to build business networks has facilitated information exchange and also has made social relations continue to improve competitive advantage, (Meutia, 2013).

On the other hand, the research of Murtiningrum (2013) states that the competitiveness of commodity can be measured by two approaches, first is level of profit generated and the second is industrial efficiency. The level of profit generated by the company can be seen from two sides which are private profits and social benefits. Whereas for competitiveness can be seen from two indicators namely competitive advantage and comparative advantage.

The urgency of the important of increasing competitiveness for the industry is an issue that remains interesting to be studied. In this article it is increasingly important to explain how the level of comparative and competitive competitiveness of Batik SMI in Pekalongan. By doing policy simulations, the policy strategy which is still urgent to be implemented in order to continue to boost the competitiveness of Batik SMI in Pekalongan. The aim of this study is to analyze the competitiveness and impact of government policy and policy simulation on Batik SMI (Small and Medium Industry) in Pekalongan City.

RESEARCH METHODS

The type of this research is quantitative descriptive research with the main source of data from primary data which is obtained by doing survey in the field. The population in this study was all units of Batik SMI in Pekalongan City that was 442 units of Batik SMI which were spread in four sub-districts, Sub-district of East Pekalongan, Sub-district of West Pekalongan, Sub-district of South Pekalongan, and Sub-district of North Pekalongan. Because the characteristics of respondents tend to be homogeneous, the model to determine the number of samples is based on the criteria in the village which has $\geq$ 15 units of batik SMI as sample.

Sampling technique used in this study was Cluster Random Sampling and it was combined with Proportional Random Sampling. The technique used to determine the number of

sampling was Slovin model with error rate 10%. Based on the determination of each village which has ≥ 15 units of SMI, there are 372 units of Batik SMI. Then, based on Slovin model, 79 units of SMI are obtained as sample respondents. Those 79 sample respondents in this research can be considered as representative. PAM analysis tool (Policy Analysis Matrix) is used as analysis method in this study. it is used to analyze comparatively, competitiveness competitively, as well as the impact of government policy on input and output in Batik SMI in Pekalongan City. Sensitive analysis tool is used to analyze policy strategy through policy simulation method on the sample respondents of Batik SMI in Pekalongan City. The basic model of PAM analysis techniques in this research as described in Table-2.

Table 2. Policy Analysis Matrix model (*Policy Analysis Matrix*/PAM)

| Indicator | Revenue | Cost | | Profitability |
		Input Tradable	Input Non Tradable	
Privat Cost	A	B	C	D=A-B-C
Social Cost	E	F	G	H=E-F-G
Policy Impact/Divergence	I=A-E	J=B-F	K=C-G	L=D-H=I-J-K

Source: Pearson et al., (2005).

Based on table 2 above, we can find the following Comparative Competitiveness and Competitive Competitiveness Indicators of comparative competitiveness can be calculated through Domestic Resource Cost (DRC) that is G / (E-F) indicator on PAM matrix. If DRC <1 means that Batik SMI in Pekalongan has comparative competitiveness and vice versa. Indicators of Competitive competitiveness can be calculated through Private Cost Ratio (PCR) that is C / (A-B) indicator on PAM matrix. If PCR <1 means that Batik SMI in Pekalongan has competitive competitiveness and vice versa, Government policy : Input policy can be seen from the value of Input Transfer (IT), Nominal Protection Coefficient on Tradeable Input (NPCI), and Transfer Factor (TF), Output Policy can be seen from the Output Transfer (OT) and Nominal Coefficient on Output (NPCO) values, Input-Output Policy can be seen from the value of Effective Protection Coefficient (EPC), Net Transfer (NT), Profitability Coefficient (PC), and Subsidy Ratio to Producer (SRP) values. Policy Simulation, Policy simulation analysis is used to see and test the changes in an economic feasibility and to determine alternative policy which can be done. Police stimulation used in this article are: 10 % and 20% Electricity Basic Tariff (EBT) subsidies, 10% batik coloring drug subsidy simulations, 5%, 10% and 20% simulation of labor wages increases, and addition simulation value added which is 5%, simulation of 5% increase in exchange rate.

RESULTS AND DISCUSSION

Based on the results of PAM model analysis in table-3, the presence of Batik SMI in Pekalongan can be stated to have competitiveness both comparatively and competitively. Calculation model, PAM model in table-3 is based on transaction data, revenue data, and production costs during the research period on March 2018. Furthermore, the data is processed and presented as in the table 3..

Based on the data in table 3 above, the performance of SMI Batik in Pekalongan City more clearly can be known based on comparative competitiveness and competitive competitiveness as follows: Competitiveness of Batik SMI in Pekalongan City

Comparative competitiveness is measured by Domestic Resources Cost (DRC) indicator which is calculated from the components in PAM table.

$$DRC = \frac{Rp.21.500.215,15}{Rp.219.812.789,38 - Rp.81.570.427,87} = 0,1555$$

Based on these calculations, Batik SMI in Pekalongan City has DRC value <1 value as much as 0.1555. Because DRC value is less than 1 and close to zero, it can be concluded that Batik SMI in Pekalongan City has an excellent level of comparative competitiveness. This condition shows that to obtain output added value as much as 1 million rupiah, Pekalongan Batik SMI only requires additional domestic factor cost 155.5 thousand rupiah.

Based on the results of the research it can be stated that Batik SMI in Pekalongan City has been efficient in using its domestic resources at world prices so that it has good comparative competitiveness. It can be said that the level of labor productivity of Batik SMI is good. The workers in Pekalongan Batik SMI in this study is able to produce averagely 244 batik pieces per month. High output / production values affect the productivity of Batik SMI so it affect the high comparative competitiveness of Pekalongan Batik SMI.

Competitive competitiveness is analyzed by using indicators of Private Cost Ratio (PCR) value which is calculated from the components in PAM table.

$$PCR = \frac{Rp.21.278.651,86}{Rp.216.499.240,51 - Rp.55.633.099,26} = 0,1322$$

Based on the PCR value which is less than one and close to zero, PCR value is only 0.1322, it can be sais that Batik SMI in Pekalongan City has good competitive competitiveness, even better than comparative competitiveness. This condition shows that to obtain 1 million output added value, Batik SMI in Pekalongan City only requires additional domestic factor cost as much as 132.2 thousand rupiah at the actual price. It means that in this research, Batik SMI in Pekalongan City can be said efficient in using their domestic resources at actual prices so that Batik SMI in Pekalongan City has good productivity and competitive competitiveness.

Pekalongan City is one of batik production contributors in Central Java and even nationally. The existence of Pekalongan City Branding as "City of Batik" has an impact on the quality of batik production in Pekalongan City. The improvement of product quality as the impact of City Branding also encourages competitive competitiveness. The results of this research support research which was conducted by Wardana and Rachmawati, (2014). According to Wardana & Rachmawati (2014) the competitiveness of Pekalongan Batik is higher than Chinese Batik from the variety of products, marketing strategies, and services (advertising and brands).

Table 3. Policy Analysis Matrix (PAM) Batik SMI Pekalongan

Description	Revenue	Cost		Profitability
		Input Tradable	Input Non Tradable	
Private Cost	Rp216.499.240,51	Rp55.633.099,26	Rp21.278.651,86	Rp139.587.489
Social Cost	Rp219.812.789,38	Rp81.570.427,87	Rp21.500.215,15	Rp116.742.146
Policy Impact/Divergence	-Rp3.313.548,87	- Rp25.937.328,61	-Rp221.563,29	Rp22.845.343,03

Source**:** Primary Data, (processed with the PAM model).

The impact of government policy on the existence of Batik SMI in Pekalongan City can be seen through the result of the research. Based on table 4, the impact of central government and regional governments on inputs, outputs and also inputs - outputs also can be known. More complete and clear research results can be seen in table below.

Table 4. Input Policy, Output Policy, and Input-Output Policy on Batik SMI in Pekalongan City

No.	Indicator	Value
	Input Policy	
1	Input Transfer (IT)	-Rp25.937.328,61
2	Nominal Protection Coefficient on Input (NPCI)	0,682025346
3	Transfer Factor (TF)	-Rp221.563,29
	Output Policy	
1	Output Transfer (OT)	-Rp3.313.548,87
2	Nominal Protection Coefficient on Output (NPCO)	0,984925587
	Input-Output Policy	
1	Effective Protection Coefficient (EPC)	1,163653018
2	Net Transfer (NT)	Rp22.845.343
3	Profitability Coefficient (PC)	1,19569062
4	Subsidy Ratio to Producer (SRP)	0,103930909

Source: The results of PAM Table, 2018.

Input policy is a government policy on production input of Batik SMI in Pekalongan City in the form of subsidies or taxes. In this research, the input policy on Batik SMI in Pekalongan City can be seen through the following indicators:

Input Transfer (IT) shows the amount of transfer to Batik SMI in Pekalongan City after the existance of government policy towards tradable input.The value of Input Transfer of Batik SMI in Pekalongan City is - Rp25,937,328.61. Negative IT value indicates that the private price of tradable input is greater than social price of tradable input. Figure - Rp. 25,937,328.61 means that there is transfer to Batik SMI in Pekalongan City as much as Rp. 25,937,328.61 because of the presence of subsidy on tradable input.

NPCI value shows the difference between private price and soicial price of tradable input. The results of this research show that NPCI value is 0.682025346 <1, it means the government policy which relate to tradable input has been able to protect Pekalongan Batik SMI. The NPCI value is 0.682025346 which means that there is subsidy on tradable input that cause Pekalongan Batik SMI only pay 68% of the costs that should be paid, when it is compared to the conditions where there is no policy to pay 100%.

Transfer Factor (TF) value shows the difference between the costs of non-tradable input at the private price and its' social price. Based on the results of this study, Transfer Factor (TF) value in Pekalongan Batik SMI is -Rp221,563.29. This negative value shows that the private price of non-tradable input is lower than the social price of non-tradable input. So, it shows that the government policy has been able to protect Batik SMI in Pekalongan City due to the presence of subsidy on non-tradable inputs. The value of Rp.221,563.29 means that there is transfer from the government to Batik SMI in Pekalongan City as much as Rp.221,563.29 because there is subsidy on non-tradable input.

Output Policy, In addition to policy on input side, this research also needs to be seen from policy on the output side. The output policy is a government policy towards the production output of Batik SMI in Pekalongan City which can be in the form of subsidies, taxes, or quota. In this research, the output policy model on Batik SMI in Pekalongan City can be seen through the following indicators. Output Transfer (OT) value shows the number of transfers received by Pekalongan Batik SMI and consumers of

Pekalongan batik. The results of this research show that the value of Output Transfer on Batik

SMI is negative Rp.3,313,548.87.

This negative OT value means that the consumers of Pekalongan Batik SMI must buy at a lower price than the price that should be paid and the producer receives less price than the price that should be received. The value of Rp.3,313,548.87 means that there is transfer to the consumers or batik subsidy as much as Rp.3,313,548.87 because of the difference in the price of private output with the price that should be received.

Nominal Protection Coefficient on Output (NPCO), Nominal Protection Coefficient on Output (NPCO) value shows the difference between private output price and its' social price. The results of this study indicate that NPCO value on Batik SMI in Pekalongan City is 0.984925587. The NPCO value <1 means that the private price is lower than its' social price. This shows that the policy on the output of batik, namely through the system of determining the import duty of batik exports which is 12.5% and it has not been able to protect Pekalongan Batik SMI. The value of 0.984925587 means that Batik SMI in Pekalongan City receives private price as much as 2% lower than the exact price.

Input-Output Policy, in this research, the input-output policy method is used to see the combination impact between input policy and output policy on Batik SMI in Pekalongan City. In this research, the results of input-output policy value on Batik SMI in Pekalongan City can be seen through the following indicators.

Effective Protection Coefficient (EPC) value shows the effectiveness of the impact of all government policies. In this research, the EPC value of Pekalongan Batik SMI is 1,163653018. It means that the EPC value> 1 then the combination of government policy has been effective in protecting Batik SMI in Pekalongan City. The value of 1.163653018 shows that Batik SMI in Pekalongan City has an additional profit which is 1.16 times greater than the value of social opportunity cost.

Net Transfer (NT) value shows the amount of net transfer which is the accumulation of output transfer and input transfer. In this study, Net Transfer (NT) value of Batik SMI in Pekalongan City is Rp. 25,286,720 which means that the combination of government policy on inputs and outputs in Batik SMI caused net transfer received by Batik SMI in Pekalongan City as much as Rp. 25.286.270.

Profitability Coefficient (PC) value is ratio which measures the impact of transfers, both output transfers and input transfers to private advantage of Batik SMI in Pekalongan City. The results of this research showed the Profitability Ratio (PC) value of Batik SMI in Pekalongan City is 1,19569062. It means that there is net transfer that flows to Batik SMI in Pekalongan City which cause private profit of Batik SMI in Pekalongan City rising 1,195 times greater than it should be if there is no policy transfer.

Subsidy Ratio to Producer (SRP) value is ratio between net transfers and revenues based on social price. The results of this research show that Subsidy Ratio to Producer (SRP) value on Batik SMI in Pekalongan City is 0.103930909. This means that the prevailing government policy has been able to make Batik SMI in Pekalongan City issuing less production costs than social opportunity cost in producing which is 10%.

Based on policy impact analysis on PAM matrix model above, the government policy from the input side and from the input-output side have been able to protect Batik SMI in Pekalongan City. While the output policy has not been able to protect Batik SMI in Pekalongan City. This is because the government policy on output in the form of implementation of import duty on batik exports which is 12.5% has caused Batik SMI domestic difficult to compete with batik / batik-like fabrics from other countries. However, this condition is generally not a problem because the Pekalongan Batik SMI has comparative and competitive competitiveness, even its' competitive competitiveness is much better. This means that Batik SMI is able to compete with any Batik SMI even with Batik from other countries. According to Susanty et al., (2013) one of the factors that influence the

growth of Pekalongan Batik Cluster is the role of government in this case government policy.

Policy simulation analysis or policy sensitivity analysis in this research has been done to find out how the effects of changes due to

policies on the competitiveness of Batik SMI in Pekalongan City. Then, the results of various policy simulation models in this research were selected and recapitulated in the form of PAM table models as in table-5 below:

Table 5. The Results Policy Simulation Analysis/ PAM Sensitivity of Pekalongan Batik SMI

The result of PAM Analysis and Policy Simulation Scenario	PCR < 1	DRC < 1	NPCO > 1	NPCI < 1	EPC > 1	PC > 0	SRP (+/-)
PAM in Normal Codition	0,1322	0,1555	0,9849	0,682	1,1636	1,1956	0,1039
10% BET Subsidy	0,1319	0,1551	0,9849	0,682	1,1636	1,1956	0,1039
20% BET Subsidy	0,1316	0,1547	0,9849	0,682	1,1636	1,1956	0,1039
10% Batik coloring Subsidy	0,1317	0,1548	0,9849	0,6796	1,1628	1,1945	0,1038
5 % Increase in labour Wages	0,137	0,1611	0,9849	0,682	1,1636	1,1969	0,1039
10 % Increase in labour Wages	0,1418	0,1667	0,9849	0,682	1,1636	1,1983	0,1039
20 % Increase in labour Wages	0,1517	0,1781	0,9849	0,682	1,1636	1,201	0,1039
5% addition of value added	0,1239	0,144	0,9849	0,682	1,1504	1,1775	0,0982
5% increase Exchange rate	0,1322	0,1564	0,9751	0,6578	0,1703	1,2038	0,1064

Source: Primary data of PAM model, processed 2018.

Based on the results of sensitivity analysis of Batik SMI in Pekalongan City in table-5, the simulation model which can be accepted is 10% and 20% BET subsidy simulation model and 10% batik coloring subsidy simulation and 5% addition of value added simulation with ceteris paribus assumption, which cause the increase in comparative competitiveness and competitive competitiveness with indication of the decrease of DRC value and PCR value in each policy simulation. Meanwhile, the simulation of 5%, 10% and 20% increase in labour wages and the simulation of 5% exchange rate increase with ceteris paribus assumption actually cause the decrease in comparative competitiveness and competitive competitiveness as indicated by the increase of DRC and PCR values of each policy simulation. The results of this research are not in line with the research which was conducted by Prasetyo (2014). However, this inequality is reasonable because the differences in the level is related industries studied. This research is research on SMI, while the research of Prasetyo research (2014) on medium and large scale industries, so that there is a difference in the meaning of wages that can be given by those related industry.

In the research which was conducted by Prasetyo et al, (2014) which stated that the presence of policy simulation of increase in wages in Textile industry and Textile Products (TPT) in Central Java as much as 15% had increased competitive competitiveness while comparative competitiveness is fixed. Meanwhile, the simulation of 10% increase in BET decreases competitive competitiveness and comparative competitiveness is fixed. The results of this study can be implemented in this research article, namely the simulation of Electricity Basic Tariff (BET) subsidies as much as 10% and 20%, 10% , 10% batik coloring subsidies, 5% , 10% and 20% increase in labour wages, 5% addition of value added, and 5% increase exchange rate. The existence of policy simulations carried out will provide input to determine right policy alternatives which can be applied to batik SMI in Pekalongan City so that it is expected to increase the competitiveness of Batik SMI in Pekalongan City.

However, the results of simulation study on wage policy support the research which was conducted by Ratnasari & Prasetyo (2016). According to Ratnasari & Prasetyo (2016) the subsidy simulation on the input and additional value added can improve comparative and

competitive competitiveness. Meanwhile, the simulation of increase in wages decreases the comparative competitiveness and competitive competitiveness of the apparel industry in Semarang Regency. Where the type of apparel industry in the research conducted by Ratnasari & Prasetyo (2016) is type of Middle and Small SMI that is in Garment and Convection industry in Semarang Regency.

In order to improve the competitiveness of Batik SMI in Pekalongan City, it is necessary to have recommendations about effective policy so that Batik SMI in Pekalongan City remain efficient and able to improve their comparative and competitive competitiveness. Based on the results of policy simulation analysis in table-5, 3 alternative types of best policies can be selected, namely: (1) policy of providing 20% BET subsidy (2) Policy of 10% batik coloring subsidy and (3) Policy of 5% addition of value added. All of these policy choices were chosen because they were able to increase the comparative competitiveness and competitive competitiveness of Batik SMI in Pekalongan City.

CONCLUSION

Based on the results of this study and discussion above, it can be concluded that; Batik SMI in Pekalongan City is able to have comparative and competitive competitiveness, even its competitive competitiveness is better than its comparative competitiveness. Based on the policy simulation of Electricity Basic Tariff subsidies and coloring drugs each of 10% and 5% addition of value added is the best alternative policy that can be done. Based on this research, Batik SMI in Pekalongan must be able to maintain comparative and competitive competitiveness which has been already good by continuing to maintain its efficiency and productivity. For other researchers, it is necessary to conduct broader research and more comprehensive in scope simultaneously both in terms of economic, social, cultural and political, so that the existence of Batik SMI can be maintained in sustainable manner..

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