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# JURNAL PENELITIAN EKONOMI DAN BISNIS

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**The Increase of Financial Performance in Mediate the Good Corporate Governance Toward the Company's Value**

DOI : 10.33633/jpeb.v7i1.4555

*Andi Kartika, Sri Sudarsi, Cahyani Nuswandari*

**Economic Pressure on the Interest Margin of Banks in Indonesia**

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*Faizul Mubarak, Etty Fatimah*

**Coal Mining Sub-Sectors in Taxation: An Overview of Characteristic Factors**

DOI : 10.33633/jpeb.v7i1.4601

*Cahya Bagus Permana, Melati Oktafiyani*

**The Effect of Environment Complexity and Resources on the Performance of SMEs Mediated By Business Strategy (Survey on Kasongan Pottery SMEs In Bantul Regency)**

DOI : 10.33633/jpeb.v7i1.4257

*Nuruita Wuryaningrum, Sabihaini Sabihaini, Danang Yudhiantoro*

**The Effect of BI Rate and Exchange Rate on Inflation in Indonesia with the Money Supply as a Mediating Variable**

DOI : 10.33633/jpeb.v7i1.4305

*Vicky Oktavia, Sugeng Wahyudi*

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*Andi Hallang*

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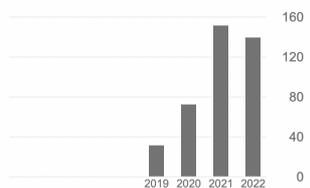
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## TABLE OF CONTENTS

Volume 7 Number 1, March 2022

Article	Page
<p><b>The Increase of Financial Performance in Mediate the Good Corporate Governance Toward the Company's Value</b> DOI : 10.33633/jpeb.v7i1.4555 <i>Andi Kartika, Sri Sudarsi, Cahyani Nuswandari</i></p>	<p>PDF 1-10</p>
<p><b>Economic Pressure on the Interest Margin of Banks in Indonesia</b> DOI : 10.33633/jpeb.v7i1.4366 <i>Faizul Mubarak, ETTY Fatimah</i></p>	<p>PDF 11-20</p>
<p><b>Coal Mining Sub-Sectors in Taxation: An Overview of Characteristic Factors</b> DOI : 10.33633/jpeb.v7i1.4601 <i>Cahya Bagus Permana, Melati Oktafiyani</i></p>	<p>PDF 21-34</p>
<p><b>The Effect of Environment Complexity and Resources on the Performance of SMEs Mediated By Business Strategy (Survey on Kasongan Pottery SMEs In Bantul Regency)</b> DOI : 10.33633/jpeb.v7i1.4257 <i>Nuruita Wuryaningrum, Sabihaini Sabihaini, Danang Yudhiantoro</i></p>	<p>PDF 35-45</p>
<p><b>The Effect of BI Rate and Exchange Rate on Inflation in Indonesia with the Money Supply as a Mediating Variable</b> DOI : 10.33633/jpeb.v7i1.4305 <i>Vicky Oktavia, Sugeng Wahyudi</i></p>	<p>PDF 46-54</p>
<p><b>Impact of Entrepreneurial Capability on New Product Development and Marketing Performance</b> DOI : 10.33633/jpeb.v7i1.5822 <i>Andi Hallang</i></p>	<p>PDF 55-63</p>

## The Increase of Financial Performance in Mediate the Good Corporate Governance Toward the Company's Value

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### Abstract

*The research aims to test empirically the effect of good corporate governance through the managerial ownership, the independent commissioner, and the audit committee toward the company's value with the financial performance as the mediation variable. The population in this research is manufactur companies that has registered on BEI, with using the purposive sampling technique. The method that used on this research is path analysis.*

*The result of this research shows that a good corporate governance through the managerial ownership, the independent commissioner, and the audit committee is able to increase the company's financial performance. The managerial ownership does not has any effect to the company's value, while the independent commissioner, the audit committee, and the financial performance has positive effects to the company's value. The financial performance can mediate between independent commissioner to the company's value. The financial value will not be a mediation's variable between the audit committee to the company's value.*

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## INTRODUCTION

Company is held to defend the continuity as an element for keeping the company as the purpose of it's own, those are for increase the profit and to prosper the stockholders or stakeholders. Besides there is a Masyarakat Ekonomi Asean (MEA) that can make more competitive, the company is demand for having an ability to compete the market opportunity. With increasing the profit and prosper the stockholders or stakeholders that shown in stock's price, for sure it will increase the company's value (Sarafina & Saifi, 2017).

The company's value can be understand as a perception of the stockholders to the achievement of company's success for managing the resources that can be shown in company's stock price (Amaliyah & Herwiyanti, 2019). To increase the company's value can't be free from the company's character in getting the maximal profit for the stockholders as their stock's papers of their performance (Sarafina & Saifi, 2017). High company's value will make the market believe not just for company's performance in this time but for the company's prospect in the future. This is based from Modigliani dan Miller (Putra & Wirawati, 2020) that the company's value is based on the earnings power with exploit the company's assets..

Good company's system or known as The Good Corporate Governance / GCG explain the relation with many participants in the company that determine the direction and the company's performance (Monks & Minow, 2003). Increase the company's value can be done by having a collaboration between the management of the company and the other components, including the stockholders and the other stakeholders in taking a decision (Amaliyah & Herwiyanti, 2019). With a good system, it can give a signal that there is an importance that align between all the stakeholders.

Phenomenon that happen shows that the importance conflict between the stockholders and the manager because the manager (agent) is not always do something that suits with the importance of the owner (principal) and that makes a fee of agent due to the survey of Asian Corporate Governance Association to the business activity in Asia, Indonesia shows that it still on the 10th under the other countries like Malaysia, Thailand, India ([www.new.acga-asia.org](http://www.new.acga-asia.org)). The weakness of application on GCG is because there is a deficiency for realize of the value and based on practice to drive a business, the application of the GCG should have increase the company's value. To do the step of company's system cannot be separated because there is managerial ownership, independent commissioner, and the audit committee.

Managerial ownership is based on how much stock's ownership that belongs to company's management that measured with the presentase of the stocks that belongs to management (M. R. Candradewi, 2019). The managerial's high stock ownership can equal the manager position with the stockholders in the importance to increase the company's value. Crutchley & Hansen (1989) explained that if the manager's stock ownership could push the importances into a union between the principal and the agent, the manager can do as what stockholders want in increasing the company's value.

Independent commissioner is the main of the corporate governance that has function to ensure the implementation of company's strategy, control the management in manage the company and to make sure the company will run the accountability (Amaliyah & Herwiyanti, 2019). Independent board of commissioner being the equal side in taking decision especially in control function for management so it will be more effective and press the agency cost that came out by the principal will be easier to hold the management and monitoring because the manager will be motivated to increase the company's value. According to Harjoto & Jo (2007) that with the independent commissioner, it will relieve the agency conflict in the company, and the company can focus in increasing the company's value.

Audit committee is from the outside that responsible to control the financial report, control the external audit and watch the internal control system (including the internal audit) that can minimize the opportunistic management that do the profit management with control the financial report and do control the external audit (Wiariningsih dkk., 2019). Audit committee has an important role in protect credibility in arranging financial report process then can create the available control system. The audit committee needs to act independently because they have relation with the audit committee's function to integrity controlling financial report that published by the company. The higher the audit committee, then will have the ability to protect from the dishonesty by management and it will increase the company's value. According to Sembiring

(2005) that audit committee have a job for giving the opinion independently to the financial report that can make the company increase the company’s value.

**Literature Review**

**Agency Theory**

According to the agency theory Tjiptono (2012) that company which separate the management function with the ownership function will susceptible to the conflict of importances because it’s a consequence from the separation of that two functions. The main principle of this theory is explain that there is a job relation between the authority giver (principal), an investor with the authrithy receiver (agency), a manager, in a cooperation contract that called nexus of contract (Sembiring & Saragih, 2019).

Agency theory assume that every individual takes the steps as their own importances. Because this difference of importance, every side try to make their profit bigger for their self. The organizer of the company hold the important things to reach their purpose with several policies, but need to think about other’s importance that will be mixed up from the policy that has been taken (Amaliyah & Herwiyanti, 2019). According to Eisenhardt (1989) in the agency theory, there is 3 assumptions of humas’s characteristic: (1) basically, human is emphasize their own self (self-interest), (2) mind of human about the perception about the future is really limited (bounded rationality), (3) human always try to avoid the risk. According to that characteristic, manager as a human will do the action that priority their own importance (Nurkhin dkk, 2017).

To relieve the conflict of importance then we need a good system (Good Corporate Governance). According to Scott (Amaliyah & Herwiyanti, 2019) that the relationof manager’s ownership in the agency theory is a proxy for investors an managers that explain the separation of ownership and controlling, as a model for two rational individuals with the opposite of importances.

Another cause of the conflict between manager with the stockholders is in the interpretation of budgeting decision. The stockholders just have an attention to the systematic risk from the company’s stocks because they do the invest to the protofolio that has diversification well. While manager do the opposite, more care to the company’s risk at all. (Sarafina & Saifi, 2017).

**METHOD**

Population in this research is all the company that included as a manufactur industry that has registered in Bursa Efek Indonesia with taking the financial report in 2015 until 2019 for 149 companies. With using two sampling purposive technique: registered as emiten from 2015 until 2019 and always report their financial report, using Indonesian rupiah and have complete data, then get 69 companies for sample, therefore the sample reach until 345 observations. Then, there is a normality test and there is 19 obeservations as a outlayer. Therefore, the sample that got is 326 observations.

The variable measurement is based on concept and previous research. Variable company’s value is measured by PBV. Variable of company’s is fro ROA. Independent variable in this research is GCG that included managerial ownership, independent commissioner, an audit committee.

**Analysis Technique**

Analysis technique use the research is multiple linear regression. The current research has models as follows:

$$ROA : \alpha_1 + \beta_1 KM + \beta_2 KI + \beta_3 KA + e_1 \qquad \text{Model 1 .....(1)}$$

$$PBV : \alpha_2 + \beta_4 KM + \beta_5 KI + \beta_6 KA + \beta_7 ROA + e_2 \qquad \text{Model 2 .....(2)}$$

Explanation:

ROA: Financial performance

PBV : Company’s value

KM : Managerial ownership

KI : Independent commissioner

KA : Audit committee

e : Error of term

From the normality test, it is derived 19 from outlayer data so it is derived 326 observations that are free from normality symptoms. heteroskedastisitas test is finished and it is derived significancy result more than 0,05 so it is free from heteroskedastisitas symptoms. In multikolinearitas test, it is derived score VIF < 10, Tolerance > 0,1 and it is free from multiko symptomsl, so does to autokolerasi test, it is derived score of durbin watson test closed to 2 and it is free from autokoleras symptoms. The other tests indicated that all meet the requirement. It is for two models.

## Result and Discussion

The result of multiple linear regression and sobel test to test mediation is on the following tables:

**Table 1 Result of Regression**

(Model 1 and 2)					
Dependent Variable	Independent Variable	Standirzed Coef	t count	Sig	Results
ROA	KM	0,128	2,314	0,021	Accepted
	KI	0,128	2,359	0,019	Accepted
	KA	0,151	2,737	0,007	Accepted
PBV	KM	0,016	0,304	0,761	Rejected
	KI	0,106	2,036	0,043	Accepted
	KA	0,124	2,321	0,021	Accepted
	ROA	0,309	5,793	0,000	Accepted

Source: processed secondary data

**Table 2 Output Sobel Test**

Independen	Mediation	Dependen	Sig
KM	ROA	PBV	0,0139
KI	ROA	PBV	0,0521
KA	ROA	PBV	0,0000

Source: processed secondary data

## RESULT AND DISCUSSION

### The Effect of Managerial Ownership to The Financial Performance

The result of this research proved that the role of managerial ownership can give positive contribution to increase the financial performance in company, means that the higher the proportional of managerial's stock ownership then the more consistent of company to carry the operational out because it is created the align of importance between the management and stockholders, so it will increase the financial performance of the company. This cannot be separated because the proportional ownership owned by managerial in addition for having the ability to analyze better in evaluating the company's performance also could control stronger in controlling and monitoring the company so it will be more efficient because it is able to press the agency problems in the company. Therefore, the company with a high level of managerial ownership proportion face the relatively small agency problems because they can align the importance between management with the stockholders so that they are expected to increase the company's profitability.

This is reinforced by the statement of Syafruddin (2006) in Hendratni, et. all. (2018) explain that the expectation of managerial ownership is that the top managers can bemoore consistent in running the company, so it can make alignment between the management with the stockholders and can improve the company's financial performance. The result of this research supports the result of previous researchers Candradewi & Sedana (2016); Ayuningrum & Saputra (2017); Amalia & Hapsari (2017) shows that GCG which is proxied by th managerial ownership has a positive effect on the company's financial performance.however, the result of this research does not support the result of (Putra & Nuzula (2016); Nurkhin dkk. (2017); Leatemia (2019); Putra & Wirawati (2020) that the managerial ownership has no effect to the financial performance.

### **The Effect of Independent Commissioner to The Financial Performance**

The results of the research are proved by the role of independent commissioners are able to make a positive contribution in improving financial performance, means that the larger the number of independent commissioners, the supervisory function in monitoring the top management actions will be higher, so it is expected that it will consider all decisions that will be determined by the company, one of which is able to improve the company's financial performance. This is because the existence of an independent board of commissioners can provide a function of control over more effective management so as to be able to conduct effective supervision of the company. The effectiveness of the proportion of independent commissioners will be able to give the board of commissioners the power to pressure management into improving its financial performance.

The results of this study are reinforced by Crutchley & Hansen (1989) stated that GCG through independent commissioners will further improve the function of control over more effective management and reduce agency costs incurred by principals so as not to improve the company's financial performance. This research is in line with the results of Sarafina & Saifi (2017); Putra & Nuzula (2016); Meri & Rahman (2018); Rompas dkk. (2018); Sitanggang & Ratmono (2019) shows that GCG proxies with independent board of commissioners have a positive effect on financial performance. This research is different from the result of Leatemia (2019) that independent commissioners have a negative effect on financial performance. The research results of Candradewi & Sedana (2016), Irma (2019), Sembiring & Saragih (2019), Situmorang & Simanjutak (2019) also occurred on the contrary that independent commissioners have no effect on financial performance.

### **The Effect of Audit Committee to The Financial Performance**

The role of the audit committee can make a positive contribution to achieve the company's financial performance, providing an understanding that the greater the number of audit committee members, the responsibility to supervise the financial reporting and disclosure process will increase, thereby improving the company's financial performance. This is because the number of committee board members can be a consideration for the company in adjusting the complexity of the company while always paying attention to the effectiveness element in the decision-making process, so as to contribute positively not only the quality of financial statements, but also create a climate of discipline and control that can reduce the chance of irregularities in the management of the company, improve the effectiveness of internal audit and external audit functions and identify things that require the supervisory board.

With the effective number of audit committee members, the financial statements can reflect the actual condition of the company and be presented reasonably in accordance with generally accepted accounting. The ability of the audit committee is very necessary in protecting the interests of shareholders from actions that can harm the company, so that with its independence it is expected that there will be transparency of the responsibility of the company's trustworthy management. The audit committee is tasked with providing an independent opinion on financial statements that can guide the company in improving the profitability of the company.

The results of this research are reinforced by the statement of Ghozali (2013) that the existence of the audit committee successfully influenced the financial performance of the company because the more effective supervision of the audit committee will make the company's performance optimal so that it will affect the company's financial performance. This study supports the result of Fauzi & Suransi (2016), Sarafina & Saifi (2017) shows that the audit committee had a positive effect on financial performance. However, this research is not supported by the findings of Irma (2019) the audit committee negatively affects financial performance. While the research of Sembiring & Saragih (2019) that the audit committee has no effect on financial performance.

### **The Effect of Managerial Ownership to The Company's Value**

The results of the research proved that with the role of managerial ownership has not been able to contribute in increasing the value of the company, the greater the proportion of managerial share ownership, the manager has a strong position to control the company that causes high professionalism and competence in

managing the company, but it does not affect the high value of the company. This is due to the high proportion of managerial's stock ownership, making managers perform opportunistic actions that only aim to prosper themselves increasing, but this has no effect on the value of the company. This can not be separated because the manager has a high voting rights so that the manager has a strong position to control the company which of course causes defense problems so that there will be difficulties for external shareholders to control the manager. The impact with the defense problem will certainly cause conflict, but it does not interfere with the value of the company. The large proportion of managerial ownership can interfere with the manager while working and may give rise to his desire to maintain (entrenchment) his position within the company. Because they are owners, they can make decisions according to their interests including the decision to maintain their position within the company. Providing appropriate incentives to managers is important to ensure that managers work in accordance with the interests of shareholders.

The results of this research support the findings conducted by Nurkhin dkk. (2017), Syafitri dkk. (2018), Candradewi (2019), Wardani (2019), Wiariningsih dkk. (2019), Putra & Wirawati (2020) that managerial ownership has no effect on the company's value. This research does not support the result of Sumanti & Mangantar (2015), Pratiwi (2017) and Wulansari (2017) managerial ownership shows a positive influence on the company's value.

### **The Effect of Independent Commissioner to The Company's Value**

Independent commissioners are proved to be able to play a role in increasing the value of the company, means that the greater the number of independent members of the board of commissioners, the supervisory function in monitoring the top management actions will be higher, so it is expected that it will consider all decisions that will be determined by the company to increase the value of the company. This is because the control of independent commissioners in conducting effective supervision affects their ability to act independently to increase the value of the company.

An independent commissioner is a member of the commissioner who is not affiliated with management, so is free from business relationships or other relationships that may affect his ability to act independently or act solely in accordance with the interests of the company. This is due to the control that independent commissioners have in conducting supervision. If the management is done well, then it will certainly be able to increase the value of the company.

The results of this research are reinforced by the statement of Crutchley & Hansen (1989) stated that the more independent commissioners, the better the supervisory and coordination function in the company so that the manager acts in accordance with the wishes of stockholders in increasing the value of the company. This research supports the result of Sarafina & Saifi (2017), Pratiwi (2017), Wulansari (2017) that independent commissioners show a positive influence on the company's value. This research is not supported by the result of Candradewi (2019), Amaliyah & Herwiyanti (2019), Krisnando & Sakti (2019), Poluan & Wicaksono (2019), (Wardani (2019), Wiariningsih dkk. (2019) that independent commissioners have no effect on the company's value.

### **The Effect of Audit Committee to The Company's Value**

The audit committee has proved to have a role in making a positive contribution in increasing the value of the company, providing an understanding that the larger the number of audit committee members, then the responsibility to supervise the financial reporting and disclosure process will increase to convince stockholders that of course have impact on increasing value of the company. This is because the audit committee can protect the interests of stockholders from fraud committed by the management that can harm the company, so that with its independence can be trusted transparency of accountability to the management of the company in providing opinions that can certainly lead the company in increasing the value of the company.

With the effective number of audit committee members, the financial statements can reflect the actual condition of the company and be presented reasonably in accordance with generally accepted accounting. The ability of the audit committee is very necessary in protecting the interests of stockholders from actions that can

harm the company, so that with its independence it is expected that there will be transparency of the responsibility of the company's trustworthy management.

This research was reinforced by (Sembiring & Saragih (2019) that the audit committee is tasked to provide an independent opinion on financial statements that can lead the company in increasing the value of the company. This research supports the result of Sarafina & Saifi (2017), Amaliyah & Herwiyanti (2019) shows that the audit committee has a positive effect on the company's value. This research does not support the result of Candradewi (2019), Krisnando & Sakti (2019), Poluan & Wicaksono (2019), Wiariningsih dkk. (2019) shows that the audit committee has no effect on the company's value.

### **The Effect of Financial Performance to The Company's Value**

Financial performance is proved to have a positive influence on the value of the company, providing an understanding of the greater financial performance, the ability of the company to obtain net profit after tax by utilizing the total assets owned will increase, therefore it will increase the value of the company. This is because the company can obtain the maximum net profit by utilizing the total assets owned, so as to increase the value of the company.

The high financial performance reflects the company's ability to generate high profit returns for stockholders. Financial performance is considered capable to affect the value of the company, because it is easy to obtain funding sources both internally and externally. The investors investing stocks in the company is to get a return. The higher the company's ability to earn profit, the greater the return that investors expect, which of course will be assessed by investors to make the value of the company better.

The statement reinforced with the theory of Modigliani dan Miller on Putra & Wirawati (2020) that the value of the company is determined by the earnings power of the company's assets. The positive thing shows that the higher the earnings power the more efficient the asset turnover or the higher the profit margin obtained by the company so that it has an impact on the value of the company. This research supports the result of Putra & Wirawati (2020), Sarafina & Saifi (2017), Sumanti & Mangantar (2015), Dhani & Utama (2017) that financial performance has a positive influence on the company's value.

### **The Role of Performance in Mediating**

#### **The Effect of Financial Performance in Mediating the Managerial Ownership to The Company's Value**

Financial performance is proved to be able to mediate the influence of managerial ownership on the value of the company, it can be interpreted that the higher the proportion of managerial's stock ownership, the company is more consistent in carrying out its operations because it creates an alignment of interests between management and stockholders, so that it will improve financial performance which of course also impacts the value of the company. The high proportion of managerial share ownership can certainly align the position of the manager with the stockholders so that the manager is motivated to improve the company's performance well, so it has an impact on achievement of the company's value to the maximum. In the process of maximizing the value of the company, it is expected that managers will act in accordance with the wishes of the principals because the manager will be motivated to improve performance and later be able to increase the value of the company.

#### **The Effect of Financial Performance in Mediating the Independent Commissioner to The Company's Value**

Financial performance is also proved to be an intervening variable between independent commissioners against the value of the company, giving the understanding that the greater the number of independent members of the board of commissioners, the supervisory function in monitoring the top management actions will be higher, so it is expected to consider all decisions that will be determined by the company because it is able to improve the financial performance and value of the company.

#### **The Effect of Financial Performance in Mediating the Audit Committee to The Company's Value**

Financial performance cannot afford to be an intervening variable between the audit committee against the value of the company. Therefore, the audit committee is only able to positively affect the value of the company

without having to go through profitability. The explanation can be interpreted that the larger the number of members of the audit committee, then the responsibility to supervise the financial reporting and disclosure process will increase to convince stockholders that of course the impact on the increasing value of the company, without going through the profitability.

## CONCLUSION AND RECOMMENDATION

### Conclusions

Based on the research that has been done, can be concluded as follows:

Managerial ownership has a positive effect on financial performance, it can be interpreted that the higher the proportion of managerial stock ownership, the company is more consistent in carrying out its operations because it creates an alignment of interests between management and stockholders, thus improving the company's financial performance.

The audit committee has a positive effect on financial performance, giving the understanding that the larger the number of audit committee members. then the responsibility to supervise the financial reporting and disclosure process will be increased, thereby can improving the company's financial performance.

Managerial ownership has no effect on the value of the company, it can be interpreted that the greater the proportion of managerial share ownership, the opportunistic actions of managers who only aim to prosper themselves are increasing, so as not to affect the value of the company.

Independent commissioners have a positive effect on the value of the company, giving the understanding that the greater the number of independent members of the board of commissioners, the supervisory function in monitoring the top management actions will be higher, so it is expected that it will consider all decisions that will be determined by the company to increase the value of the company.

The audit committee has a positive effect on the value of the company, gives the understanding that the larger the number of members of the audit committee, then the responsibility to supervise the financial reporting and disclosure process will increase to convince stockholders that of course the impact on the increasing value of the company.

Financial performance has a positive effect on the value of the company, giving an understanding of the greater financial performance, the ability of the company to obtain net profit after tax by utilizing the total assets owned will increase, thereby will increase the value of the company.

### Recommendation

This research can be used as a discourse in the development of science, especially in the field of financial accounting and can be used as well as supporting materials for further research. In the next research, variables are needed, such as developing from Good Corporate Governance, such as institutional ownership, board of directors, board of commissioners, solvency ratio, liquidity, internal audit, and others so that the results are more getting better and perfect.

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**Economic Pressure on the Interest Margin of Banks in Indonesia**Faizul Mubarak<sup>1✉</sup>, Ety Fatimah<sup>2</sup><sup>1,2</sup>Department of Management, Faculty of Economics and Business, Universitas Islam Negeri Syarif Hidayatullah, Jakarta, Indonesia**Article Information***Article history:*

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**Abstract**

*Net Interest Margin (NIM) is a profitability ratio to compare interest-based income and total assets owned. This study analyzes economic conditions on the Net Interest Margin (NIM) of conventional banking in Indonesia. This study uses the Vector Error Correction Model method with monthly data from 2008 to 2020. The long-term results are only inflation, which does not affect, while all variables do not affect the short-term. The Impulse Response Function results show that the exchange rate positively shocks the Net Interest Margin while interest rates, gold prices, oil prices, and inflation negatively shock NIM. The Forecast Error Variance Decomposition results found that inflation gave the second-largest variation while interest rates provided the minor variation.*

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## INTRODUCTION

Banking institutions must maintain relationships with customers, especially significant customers nurtured for a long time by the bank (Tileagă, Nițu, & Nițu, 2013; Zephaniah, Ogba, & Izogo, 2020). In general, main customers and corporate customers receive a credit line facility, which must be available if they need funds according to the credit line ceiling (Werner, 2016). If the bank cannot fulfill its commitment to the customer's facilities, then the impact is that the customer relationship with the bank will be less valuable (Abdullateef, Muktar, Yusoff, & Ahmad, 2014; Rita, Oliveira, & Farisa, 2019).

Further impact, customers will seek and use facilities from other banks (Ozili, 2018). If this happens, the bank's business volume will decrease, and eventually, the bank's profitability will decrease (Tan, 2016). To ensure the availability of funds needed by customers, banks must adequately manage the liability's side, especially non-traditional sources of funds, by obtaining internal bank borrowing line facilities from other banks (Sufian, Kamarudin, & Nassir, 2016; Werner, 2016). Banking must prioritize the relationship between the bank and the primary customer because it benefits from interest spreads, deposited funds, and fees for its banking services (Silva & Lucinda, 2017; Thakor, 2020).

Banking has two main business activities: raising funds and channeling funds (Wasiaturrahma, Sukmana, Ajija, Salama, & Hudaifah, 2020). These banking activities differentiate banking institutions from other financial institutions. Banks' distribution of funds is one of the primary forms of business activity because, from this activity, banks get high-profit margins (Abor, Agbloyor, & Kuipo, 2014; Nguyen, 2018). Banks with high-profit margins will positively improve their performance (Le & Ngo, 2020). Banking makes the distribution of funds a source of income (Amidu & Wolfe, 2013).

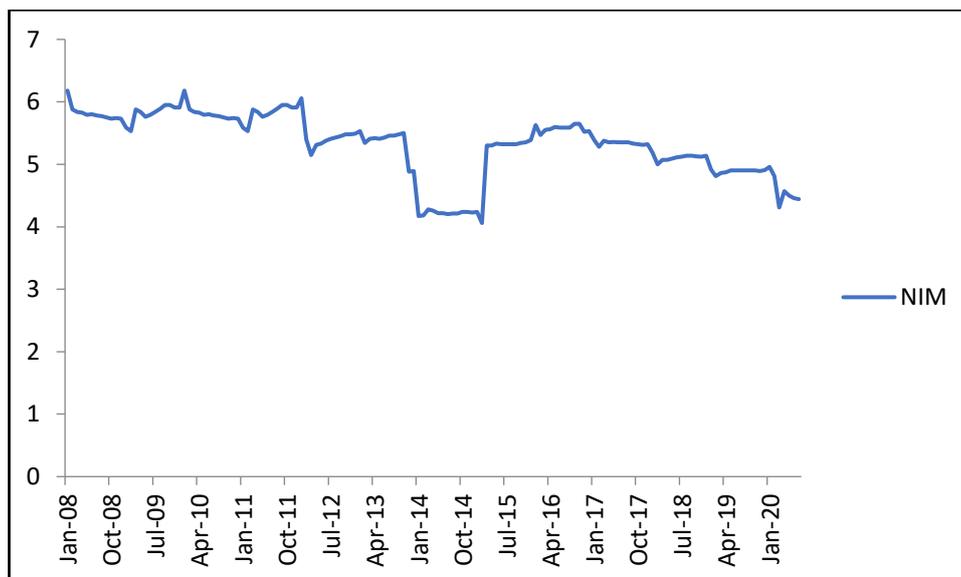


Figure 1. Movement of Net Interest Margin

The measurement of bank income derived from interest is called the Net Interest Margin (NIM) ratio (Ghosh, 2016). This ratio divides the income derived from interest by the company's net assets. In Indonesia, the growth in the NIM ratio at conventional commercial banks has fluctuated. Banks need to pay more attention to NIM's instability because the effects can spread to several things, such as declining public consumption and stagnant company growth. Also, the NIM ratio related to credit can increase productivity. High and controlled credit is a positive indication that a country's economy is experiencing growth.

A profitability ratio is a ratio to measure the company's ability to generate profits using its resources, such as assets, capital, or company sales (Dalnial, Kamaluddin, Sanusi, & Khairuddin, 2014; Ferry & Wahyu, 2018; Restianti & Agustina, 2018). The relationship between the bank and the primary customer must be prioritized because it benefits from interest spreads, deposited funds, and fees for the primary customer's banking services (Nguyen, 2018; Were & Wambua, 2014). One measure of bank income that comes from interest is the Net Interest Margin (NIM) ratio.

Net Interest Margin (NIM) is the ratio used to measure bank management's ability to manage its productive assets to earn net interest (Nassar et al., 2017). Net interest income is derived from interest income, less interest

expense (Hijazeen, 2017). The greater the NIM ratio, the higher the interest income or productive assets managed by the bank so that a bank's possibility in a problematic condition is getting smaller (Hussain, 2014; Papavangjeli & Leka, 2016). According to Bank Indonesia regulations, a bank's Net Interest Margin (NIM) value is healthy if it has a NIM ratio of above 2 percent.

Research related to Net Interest Margin (NIM) has been conducted by Widyanto, Agung, and Alwiyah (2020) found that capital, bank size, and operational efficiency (BOPO) did not have a significant effect on Net Interest Margin (NIM), while Loan Deposit Ratio (LDR) and Non-Performing Loan (NPL) had a significant effect on NIM. Liu and Sathye (2019) find that the growth of Gross Domestic Product (GDP), inflation, and the proportion of national savings have a significant effect on Adjusted Interest Spread (AIS) as a proxy for Net Interest Margin (NIM) in China.

Dewi and Triaryati (2017) found that Gross Domestic Product (GDP) and inflation have a positive but insignificant effect on NIM because Gross Domestic Product (GDP) is experiencing a slowdown while Net Interest Margin (NIM) fluctuates. A sharp decline in inflation has been anticipated by banking. Nugrahaning and Wahyudi (2016) found that operational efficiency (BOPO) and Return on Assets (ROA) have a significant effect on the Net Interest Margin (NIM).

Papavangjeli and Leka (2016) found that real economic growth has a significant negative effect on Net Interest Margin (NIM) in Albania because economic growth will improve bank credit performance. Meanwhile, Zeb and Bashir (2016) found that the reference interest rate significantly affects Pakistan's Net Interest Margin (NIM), while inflation and economic growth do not affect it. Hussain (2014) found that Gross Domestic Product (GDP) and credit growth had an effect on Net Interest Margin (NIM) in Pakistan.

Then research related to macroeconomic influence on Net Interest Margin (NIM) has also been carried out by Aviliani et al. (2015), where researchers using Vector Error Correction Model (VECM) found that the Net Interest Margin (NIM) variable has the weakest response to macroeconomics. Hijazeen (2017) found that there was no effect on the Customer Price Index (CPI) on the Net Interest Margin (NIM) in Jordan. Nassar et al. (2017) found that real Gross Domestic Product (GDP) does not have a significant effect on Net Interest Margin (NIM). However, inflation significantly affects Honduras's Net Interest Margin (NIM).

This study aims to analyze the effect of macroeconomic variables on banks' profitability in Indonesia both in the short and long term, analyze the response of bank profitability in facing macroeconomic variable shocks, and analyze macroeconomic variables in explaining the diversity of bank profitability in Indonesia. This research tries to study by adding the variables studied and using the latest data for an extended period from the research that has been done. This research adds to the variables of world oil prices and gold prices in which banks channel their investment to the sector. This study provides the first contribution to provide banking benefits in anticipating shocks that occur in profitability. Second, knowing the macroeconomic factors that affect bank profitability in both the short and long term. Third, as a reference for further research.

## METHOD

This study uses a sample of conventional commercial banks in Indonesia. The research data comes from the Indonesian banking statistical reports issued by the Financial Services Authority, Bank Indonesia, and the Central Statistics Agency. This study uses the variable Net Interest Margin (NIM), inflation (INL), interest rates (BIR), exchange rates (ECR), oil prices (OL), and gold prices (GLD). This study uses monthly data from January 2008 to June 2020.

This study uses the Vector Error Correction Model (VECM) to answer the research objectives. Several steps must be done before testing using VECM. First, the stationarity test uses the Augmented Dickey-Fuller (ADF). Second, the optimal lag test using the Likelihood Ratio (LR), Akaike Information Criterion (AIC), Schwarz Information Criterion (SC), Final Prediction Error (FPE), and Hannan-Quin Information Criterion (SC). The optimal lag selection criteria are the largest LR or AIC, SC, FPE, and HQ have the smallest value. Third, the cointegration test using the Johansen Cointegration test to find convergence in long-term relationships. Fourth, VECM modeling with restrictions because the data is not stationary but cointegrated. Fifth, the impulse response function to observe the response of the shocks that occur. Sixth, forecast error variance decomposition to study the diversity of each variable.

If the data is non-stationary but cointegrated, it uses the Vector Error Correction Model (VECM). Where  $y_t$  is the vector containing the analyzed variables,  $m_{0x}$  is the intercept vector,  $m_{1x}t$  is the regression coefficient vector,  $t$  is the time trend,  $II_x$  is  $\alpha_x\beta'$  with  $\beta'$  contains the long-run cointegration equation,  $y_{t-1}$  is the in-level variable,  $\tau_{ix}$  is

the regression coefficient matrix,  $k-1$  is the VECM order of VAR, and  $e_t$  is the error term. Where  $y_t$  is a vector of size  $(n*1)$  containing  $n$  variables,  $A_0$  is the size  $(n*1)$ ,  $A_1$  is the size  $(n*n)$  parameter matrix for each  $i$ , and  $e_t$  is the error vector of size  $(n*1)$ .

$$\Delta y_t = m_{0x} + m_{1x}t + I_{ix}y_{t-1} + \sum_{i=1}^{k-1} \tau_{ix}\Delta y_{t-1} + e_t$$

**RESULT AND DISCUSSION**

Table 1 shows the descriptive statistics of the use of each variable. The exchange rate has a standard deviation higher than the average, so the volatility of the exchange rate tends to be volatile. This volatile exchange rate data is due to daily changes in foreign exchange trading. Besides, all variables except the exchange rate have a mean value more significant than the standard deviation, which indicates that the data distribution results are pretty good.

**Table 1.** Descriptive statistics

Indicator	NIM	BIR	GLD	OL	INL	ECR
Mean	5.325828	6.365894	1296.983	72.59781	5.14457	11682.6
Median	5.41	6.5	1280.2	69.8	4.42	11977
Maximum	6.18	9.5	1964.9	140	12.14	16367.01
Minimum	4.06	4	730.75	20.48	1.54	8508
Std. Dev.	0.509918	1.257237	243.6602	23.82662	2.365311	2150.024

Table 2 shows the results of the data stationarity test. The data stationarity test results show that all variables are not stationary at the level (ADF Statistic is less than t-statistic 5%). All variables which are not stationary are tested again at the level of difference.

**Table 2.** Stationarity Test Results

Variable	Level			Difference		
	ADF Statistic	t-statistic 5%	Results	ADF Statistic	t-statistic 5%	Results
NIM	-2.0228	-2.8807	No	-13.586	-2.8809	Stationary
BIR	-1.0372	-2.8809	No	-6.7966	-2.8809	Stationary
GLD	-1.3353	-2.8807	No	-13.75	-2.8805	Stationary
OL	-0.3053	-2.8815	No	-8.9776	-2.8815	Stationary
INL	-1.871	-2.8809	No	-7.6355	-2.881	Stationary
ECR	-0.9168	-2.8807	No	-12.595	-2.8809	Stationary

The data stationarity test results at the difference level indicate that all variables are stationary (the ADF Statistic is greater than the t-statistic 5%). So, stationary data shows that the average variance value has not changed systematically or is constant. The optimal lag length test results are based on the smallest values of AIC and SC. Based on the results of the processing that has been done, the optimal lag in this study is lag 1 (Table 3).

**Table 3.** Optimal lag test results

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-2418.753	NA	27349033	34.15145	34.27635*	34.20220
1	-2348.702	133.1961	16938076*	33.67186*	34.54612	34.02712*
2	-2315.534	60.26220	17673429	33.71175	35.33537	34.37153
3	-2292.408	40.06344	21327283	33.89307	36.26606	34.85736
4	-2272.042	33.56096	26916529	34.11327	37.23562	35.38207
5	-2253.947	28.28999	35358006	34.36545	38.23716	35.93876

6	-2216.892	54.79940*	35931350	34.35059	38.97167	36.22841
7	-2181.616	49.18818	37925471	34.36078	39.73123	36.54311
8	-2149.704	41.79973	42639933	34.41837	40.53818	36.90521

After getting the optimal lag value, the next step is to test the stability of the VAR. VAR is considered stable if the modulus value is below 1. The VAR stability test results show that lag 1 has a modulus value below one, so it can be said that VAR is stable at lag 1 (Table 4).

**Table 4.** VAR Stability Test Results

Root	Modulus
-0.483635	0.483635
0.477654	0.477654
0.342777	0.342777
-0.101027 - 0.082332i	0.130327
-0.101027 + 0.082332i	0.130327
-0.098421	0.098421

The data stationarity test results on the stationary test show that they are stationary at the difference, so the next step is to do the Johansen Cointegration test. The Johansen Cointegration test functions to find convergence in long-term relationships based on the Vector Autoregression (p) (VAR (p)) model from a set of variables that are not stationary (Johansen & Juselius, 1990).

**Table 5.** Cointegration test results

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.634421	478.4328	95.75366	0.0001
At most, 1 *	0.500084	329.5045	69.81889	0.0001
At most, 2 *	0.418718	226.8939	47.85613	0.0001
At most, 3 *	0.377665	146.6010	29.79707	0.0001
At most, 4 *	0.312412	76.40803	15.49471	0.0000
At most, 5 *	0.132123	20.97241	3.841466	0.0000

The Johansen Cointegration test focuses on the cointegration testing process where there is a change from the VAR model to VECM. Data processing using VECM requires cointegration equations. So, cointegration to see equations in the long run. The cointegration test results using the Johansen Cointegration test found the cointegration equation to continue the research to the VECM test (Table 5).

*Long Term and Short Term Results*

Effect of interest rates on Net Interest Margin (NIM). The VECM test results show that interest rates significantly affect NIM in the long run. However, in the short term, it does not affect. The Indonesian bank rate (BI Rate) is the benchmark interest rate in Indonesia, where the BI Rate regulates the interest rates for deposits and loans. When the loan interest rate increases, the interest-based bank income will increase. In the long term, the BI Rate will affect the decline or increase in credit interest rates, which will impact the rise and fall of interest-based income. When the BI Rate as the reference interest rate decreases, it will usually be followed by a lower deposit interest rate change, which is then followed by a decrease in loan interest rates. When loan interest rates fall, banks' funds or costs to fund deposits also decrease. Banks can use this reduction to reduce loan interest rates, affecting the NIM.

Effect of gold prices and oil prices on Net Interest Margin. The VECM test results show that gold prices and oil prices have a significant positive effect on NIM in the long run. However, in the short term, it does not affect. Although there is no strong correlation between the gold price and the oil price on NIM, a positive effect is possible because several banks in Indonesia have gold lending services. When the non-real sector market is uncertain, some

investors buy gold as a hedge (Gokmenoglu & Fazlollahi, 2015). Likewise, with the oil price, when crude oil prices rise, companies related to oil exports will make many loans to banks to expand their companies (Idrisov, Kazakova, & Polbin, 2015; Ratti & Vespignani, 2016).

Effect of inflation on Net Interest Margin (NIM). From the results of VECM testing on the long and short term, it does not affect. When inflation falls, the central bank tends to lower interest rates to spur people to be consumptive. A decrease in interest rates is in line with a decrease in the interest rate given when making loans, reducing the Net Interest Margin (NIM).

**Table 6.** Long Term and Short Term Results

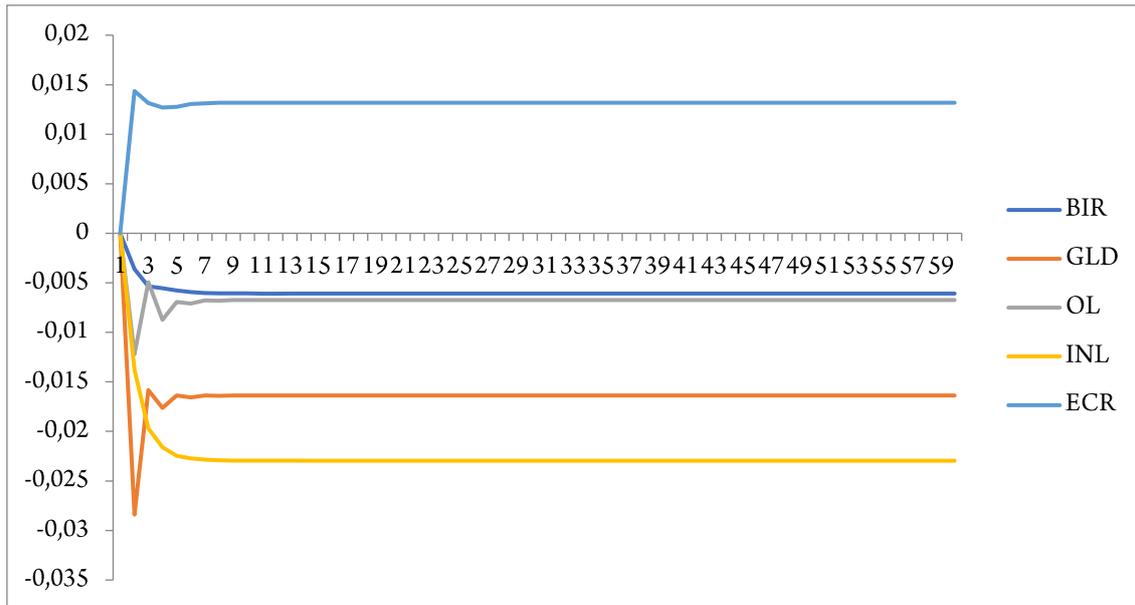
Variable	Coefficient	t-statistic	t-table
Short Term			
D(NIM(-1))	0.08375	0.94661	1.97601
D(BIR(-1))	0.07343	0.42957	1.97601
D(GLD(-1))	0.00022	1.66044	1.97601
D(OL(-1))	0.02451	0.82987	1.97601
D(INL(-1))	0.02306	1.14240	1.97601
D(ECR(-1))	3.8E-05	1.07460	1.97601
C	0.01398	0.89135	
Long Term			
*BIR(-1)	0.34252	2.13188	1.97601
*GLD(-1)	0.00145	-3.67965	1.97601
*OL(-1)	0.03206	-8.74749	1.97601
INL(-1)	0.16407	0.00680	1.97601
*ECR(-1)	0.00032	-7.62087	1.97601
C	46.06767		

\*Significant at 5 percent

Effect of exchange rates on Net Interest Margin (NIM). The long-term VECM test results show that the exchange rate has a significant positive effect on NIM. However, in the short term, it does not affect. The exchange rate affects the quality of loans provided by banks (Abuka, Alinda, Minoiu, Peydró, & Presbitero, 2019). If the domestic currency depreciates, it can reduce the quality of loans, which will lead to a lower NIM.

*Impulse Response Function*

Net Interest Margin (NIM) responds negatively to interest rate shocks in the 2nd month until the 60th month. In the second month, NIM responded negatively to the interest rate shock of -0.0036 percent and continued to decline until the 10th month to -0.00608 percent. NIM began to stabilize in response to interest rate shocks when it entered the 11th month until the 60th month.



**Figure 2.** Impulse Response Function

Net Interest Margin (NIM) responded negatively to the gold price in the 2nd month until the 60th month. In the second month, NIM responded to the gold price shock of -0.0284 percent and continued to increase until the ninth month of -0.01637 percent. NIM began to stabilize in response to gold price shocks when it entered the 10th month until the end of the observation.

Net Interest Margin (NIM) responded negatively to oil prices in the second month until the 60th month. In the second month, NIM responded to the oil price shock of -0.01222 percent and continued to decline until the 12th month of -0.00674 percent. NIM started to stabilize in response to oil price shocks when it entered the 12th month until the 60th month.

Net Interest Margin (NIM) responded negatively to inflation in the 2nd month until the 60th month. NIM began to stabilize in response to inflation shocks when it entered the 12th month until the 60th month. In the second month, NIM responded to inflation shocks of -0.01378 percent and continued to increase until the 11th month by -0.02296 percent.

Net Interest Margin (NIM) responded positively to the exchange rate in the 2nd month until the 60th month. NIM responded to exchange rate shocks of 0.014364 percent in the second month and declined until the 11th month of 0.013187 percent. NIM began to stabilize in response to exchange rate shocks when it entered the 12th month until the 60th month.

NIM's negative response to inflation and interest rate variable shocks is because the NIM will increase if these two variables decrease. A reduction in inflation and interest rates is possible if the economy improves. When the economy improves, the number of non-performing loans will decrease. The decline in non-performing loans will make banks increase lending by lowering lending rates to get a risk-free NIM.

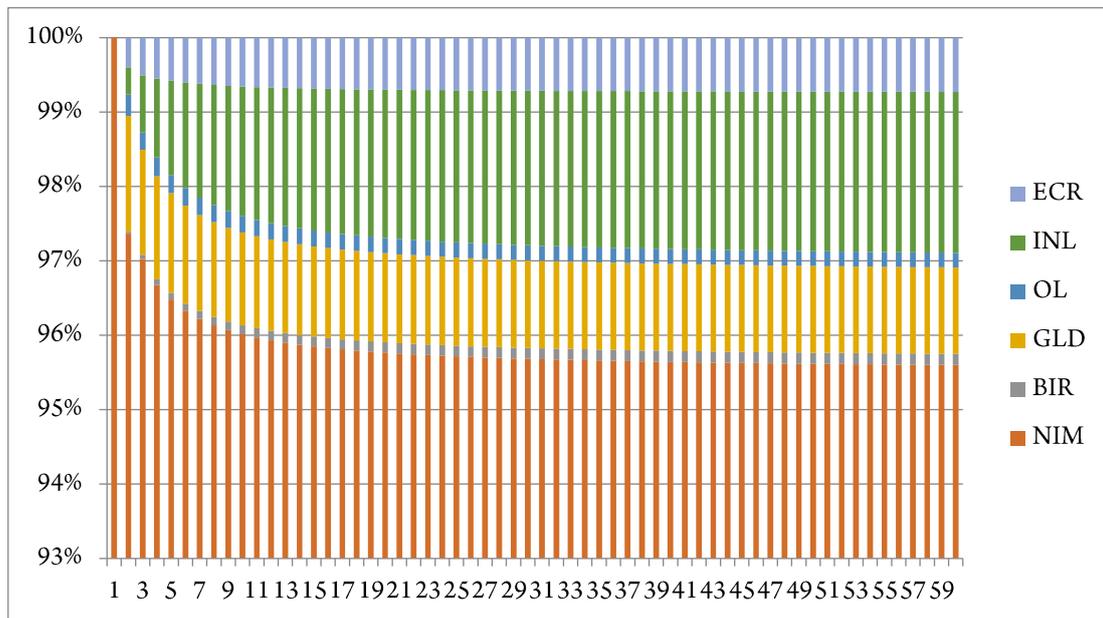
Meanwhile, NIM's positive response to exchange rate variable shocks is due to loans using foreign currencies, which fluctuate if they experience. If there is appreciation (an increase in the exchange rate), the bank's interest income will also increase. Indonesian conventional banking does provide loan services using foreign currencies.

*Forecast Error Variance Decomposition*

Forecast Error Variance Decomposition (FEVD) analysis helps explain each variable's contribution to the shocks it causes to the main observed endogenous variables. This analysis predicts how much the contribution of each variable's variance affects other variables at the present and future periods.

Figure 3 explains the FEVD test results where the NIM itself influenced the contribution of NIM variance in the first period. However, other variables began to influence with increasing periods, although the magnitude was not as large as the NIM's effect. Inflation is the second-largest variable that affects NIM, where the effect of inflation in the second period is 0.88 percent, and at the end of the period, it is 3.34 percent. Meanwhile, the interest rate is the variable

with the minor effect, which at the end of the period is 0.01 percent. The small influence of each macroeconomic variable on NIM shows that whatever changes in these variables significantly affect NIM.



**Figure 3.** Forecast Error Variance Decomposition

Interestingly, the low influence of interest rates on NIMs, although interest rates regulate loan interest rates, which reference the amount of interest on bank lending, credit interest rates cannot immediately decrease (Tan, 2016; Were, 2015). There are two main factors for indirect credit interest rates falling. First, contractual agreements between customers before making a loan and Indonesian banks' liquidity problem (Salman & Nawaz, 2018; Wahyudi & Sani, 2014). If the customer agrees to make a loan with a fixed rated interest system in the loan contract, the impact is that if the reference interest rate drops, the interest rate that has occurred will not change (Gayaker, Yalcin, & Berument, 2020; Roy & Kemme, 2020; Sonaglio, Campos, & Braga, 2016). Therefore the bank NIM value can remain. The second cause is the high value of Indonesia's Loan to Deposit Ratio (LDR). The LDR ratio shows the number of funds channeled in proportion to the funds raised (Driver, Grosman, & Scaramozzino, 2020; Grundy & Verwijmeren, 2020). If the funds channeled are greater than those collected, the bank will experience liquidity problems, and customers who have deposits in the bank cannot withdraw them (Brown, Guin, & Morkoetter, 2020; Werner, 2016).

## CONCLUSIONS AND RECOMMENDATION

The results of the long-term equation variable interest rates, oil prices, gold prices, and exchange rates have a significant positive effect on Net Interest Margin (NIM). However, none of them affects the Net Interest Margin (NIM) in the short term. The results of the Impulse Response Function (IRF) test found that the Net Interest Margin (NIM) responded positively to exchange rate shocks while the interest rate, gold price, oil price, inflation, and exchange rate negatively. The results of the Forecast Error Variance Decomposition (FEVD) test found that the variable that gave the most considerable variance effect after Net Interest Margin (NIM) was inflation, and the smallest was the interest rate variable.

The net interest margin (NIM) trend for banks decreases in line with global economic pressures. The decline in credit quality and the restructuring scheme implemented by banks will further erode margins. Banks need to revise the NIM target to suit global economic conditions. Banks need to focus on the cost of funds as one of the main strategies in maintaining margin growth. Banks need to consider the reference interest rate, liquidity conditions and monitor interest rates in the market in determining the cost of funds. With the decline in the benchmark interest rate and the adjustment of interest rates on the market, banks certainly need to adjust to the interest rates offered.

Also, to maintain the stability of NIM, banks can carry out a strategy from two sides, namely the cost side and the interest income side. In terms of costs, banks need to increase the composition of cheap cost of funds by optimizing the banking network and digital initiatives to more effectively capture the potential of existing retail funds. From the

income side, banks can remain focused on lending, especially micro-credit, and strive to maintain credit quality by actively restructuring customers who need them.

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## Coal Mining Sub-Sectors in Taxation: An Overview of Characteristic Factors

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### Abstract

*Tax Avoidance is a legal effort made by companies to minimize the payment of their business tax obligations to the tax authorities by taking advantage of existing tax regulation loopholes or those that have not been regulated in statutory regulations. Even if this action is legal, the government does not want it because it is unable to optimize tax revenues. Moreover, the company will benefit from tax avoidance whenever possible. This study aims to determine whether firms' characteristics variables influence tax avoidance. This study covers a population of 25 coal mining companies listed on the Indonesia Stock Exchange from 2014 to 2019. Using a purposive sampling technique, eight coal mining companies were selected as part of this study. The study uses SPSS data processing tools, and the data is analysed by multiple linear regression analysis. The findings showed that the firm characteristics represented by the variables of size, leverage, age, and sales growth did not affect tax avoidance, while the profitability variable affected tax avoidance. The results indicate that the variability of firm characteristics may explain the Tax Avoidance of 18.9%, while the remaining 81.1% can be explained by other variables.*

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## INTRODUCTION

Achieving equitable development in Indonesia requires significant financing due to the large Indonesian territory. Tax revenues are still the largest source of revenue for the State to date. This is in line with what was said members of Commission XI of the Indonesian Parliament Refrizal, who revealed that state revenues in 2019 were expected to reach Rp. 2,165.1 trillion, with the largest proportion, contributed by the taxation sector, reaching a value of Rp. 1,786.3 trillion. Meanwhile, Non-Tax State Revenue (PNBP) in the same year reached Rp. 378.2 trillion. The next source of revenue for the State comes from the grants that reach Rp. 435.3 billion (Tribunnews, 2019).

Based on these arguments, it can be concluded that taxes are the sector which contributes the most to a country's budgetary revenues. Taxes are the highest component in terms of revenues relative to other revenue sources in Indonesia. The tax sector is therefore the main source of revenue for Indonesia. In many cases, government spending for development purposes or expenditure, whether routine or not, is financed by taxes (Agsari, 2020).

As quoted in the literature of Allingham & Sandmo (1972) they explain that there are no taxpayers who voluntarily issue their funds to contribute to tax payments, but other ways are not obtained which impact on tax payments that are still made. Taxes force all litigated parties to pay debts and fines if they do not pay taxes, without the reciprocity obtained directly. Things like that, which underlie company managers to optimize tax payments by utilizing the knowledge and regulations on taxation so that taxes paid to the state can be reduced as low as possible.

According to Rezaei & Ghanaeenejad (2014), tax planning is carried out by management because this cost component is considered quite expensive, and the profits received by companies are not obtained directly from the taxes they pay. The reason for the underlying tax avoidance is that management is incentivized to do tax planning, which is to increase the value of businesses by transferring tax costs. The value of a company that is experiencing a positive trend will also have a positive impact on the welfare of the management, as a result, the management will be considered good by the principal who will then provide incentives to management who are considered successful in their performance.

Armstrong et al., (2015) state that management's tax planning serves their interests, such as increasing compensation and management bonuses. Aggressive tax planning is classified as a form of tax avoidance fraud case, and when discussing tax avoidance, the majority of studies use the agency theory perspective (Gaaya et al., 2017).

Tax avoidance is a difficult and complex activity in implementing such fraudulent practice. The reason is that implementing tax avoidance does not violate the tax rules established by the state. According to Wijayanti et al., (2016), tax avoidance activities conducted by certain corporate managements are permitted, but the state does not want this to happen.

In this study, the Effective Tax Rate (ETR) is used to detect corporate tax avoidance. In her literature, Putri (2018) writes that ETR can provide an overview of tax payments made by companies from cash flow statements so that we can dig up information about cash quantity data that are following conditions in the field that have been issued by companies for tax payments. In this study, researchers used several aspects of company character represented by company age, sales growth, company age, corporate debt, and profitability in the influence of tax avoidance by organizations on the company.

In practice, the size is divided into three groups, which are small, medium, and large companies. Company size may also be an indicator of corporate tax avoidance. Due to the size of the company as a ratio that can identify a company into a superior or an inferior group based on various factors of the company's total wealth such as total assets, the value of company securities, average turnover, and the amount of company marketing (Cahyono et al., 2016).

A company with a large number of assets in its operating activities will have an impact on more complex transactions. Therefore, it will emerge which is then used by taxpayers to perform the behavior of avoiding tax liability. The literature of Permata et al., (2018) and Cheisviyanny & Rinaldi (2015) concluded that tax avoidance is not affected by size. In the meantime, research by Edeline and Sandra (2018) and Ayufa et al. (2018) indicates that size affects tax avoidance.

Based on research from Dewinta & Setiawan (2016), the age of the company organization can be an indication of how long the company can compete and continue to exist in market competition. If the operational time of a company is getting longer, it will increase the experience gained and the more skilled the experts who manage and manage its tax burden will be. As a result, the level of tax avoidance continues to rise. The Agsari (2020) research indicates that firm age may affect tax avoidance, which is consistent with the research findings of Dewinta and Setiawan (2016). However, Permaton et al., (2018) and Wardani et al., (2019) in their research reported that tax avoidance is not affected by the firm age.

Profitability is part of the measurement of a company's performance. The profitability provides an overview of the company's ability to make profits over a period in selling activities, share capital, and assets. During this observation, the return on assets (ROA) determined the profitability of the company. Return on Assets (ROA) is an indicator that can describe the achievements of a company by paying attention to the amount of ROA, the higher the ROA value displayed by the company, it can be concluded that the healthier the performance of the company is (Cahyono et al., 2016).

ROA can be measured by focusing on a company's profit relative to the amount of corporate income tax (PPh) (Suardana & Maharani, 2014). Therefore, the more profit earned by the corporation will impact the amount of the tax liabilities that a corporation has to pay to the State more. As a result, this will encourage a company to do tax avoidance (Agsari, 2020). Research by Suardana and Maharani (2014) concluded that profitability has an effect on a company's tax avoidance activities. This statement is consistent with the statement from Saputra et al., (2015) which conclude that corporate tax avoidance may be affected by profitability. It is different from the research of Cahyono et al., (2016) and Arianandini & Ramantha (2018) which concluded that profitability does not influence company's tax avoidance.

A debt-financed corporate asset may be determined using leverage (Waluyo et al., 2014). Debt to Equity Ratio (DER) is used in this observation to obtain information about the amount of leverage (debt) by measuring the percentage of total debt to equity owned by a company in one current period. The high leverage of a corporation will reduce its taxation burden. It allows the manager to go into debt to reduce the tax burden. According to Cahyons et al., (2016) and Arianandini and Ramantha (2018), leverage does not affect the companies to avoid their tax obligations. The finding of Niawati et al., (2020) and Siregar & Widyawati (2016) are inversely proportional to previous studies, in their research Niawati and Siregar & Widyawati explained that tax avoidance can be affected by leverage.

The amount of an increase in profit may be reported using the sales growth indicator. If sales growth has increased, it will increase the company's operating capacity as well. This is concluded by Dewinta & Setiawan (2016) who argue that when sales have increased, it will have an impact on the higher profits that will be received by the company. As a result of these factors, companies can engage in tax avoidance. The effect of sales growth on tax avoidance was studied by Dewinta & Setiawan (2016) and Mahanani & Titisari (2016) found that tax avoidance was influenced by sales growth. Meanwhile, the observations made by Permata et al., (2018) and Agsari (2020) concluded that tax avoidance was not affected by sales growth.

Some companies were even found to be deliberately doing tax avoidance. Indonesia experienced this case in 2019, namely a case involving the mining company PT Adaro Energy. PT Adaro Energy has been proven to have committed Tax Avoidance. Similar to the Panama Papers, PT Adaro Energy has also been identified as having transferred its wealth abroad with a low tax rate. This was done by PT Adaro Energy so that the profits obtained by the company were maximized and succeeded in minimizing the tax obligations paid to the Government of Indonesia (Kontan.co.id, 2019).

The mechanism, in this case, is PT Adaro Energy, mining coal in Indonesia, after which they market and sell some of the coal in Singapore. When they had succeeded in selling and getting a profit, they transferred the profits to the country of Mauritius. The amount transferred was so large that it reached 90% of the profit or the equivalent of USD 338 million. It did not stop there; part of the turnover was then sent back to Labuan (tax haven in Malaysia). After this process, companies in Labuan invest and invest in a mining company operating in Australia (Huda, 2019).

When the financial statements are reported, PT Adaro Energy can provide information about the minimum profit and assets, as a result, the Indonesian government cannot collect taxes maximally because of the activities of transferring the wealth. Of course, this has an impact on state revenue in the tax sector because the State Revenue and Expenditure Budget (APBN) is not able to meet the targets that have been planned by the Ministry of Finance. This is evident in 2019 only realized tax revenues reached Rp. 1,332.1 trillion. This figure only touched around 84.4% of the 2019 State Budget target of Rp. 1,577.6 trillion (Liputan6.com, 2020).

From the case of the Panama Papers and PT Adaro Energy, it can be concluded that there is a similarity in fraudulent activity, namely Tax Avoidance. This tax avoidance practice is not illegal but is very detrimental to the state. Individuals who work on this tax avoidance practice usually do so by riding on loopholes in government regulations governing taxation (Latifa, 2019). This tax avoidance practice is influenced by the desire of corporate individuals to keep their profits large by paying very minimalistic taxes. This is also related to the success indicators of managers when they get large profits, and when they are considered successful in the GMS, they can fulfil the wishes of the owners of capital.

Companies operating in the mining sector were selected as samples in this study because of the large number of tax avoidance cases carried out or carried out by several unscrupulous companies in the mining sector. In this observation, the sample used in this study is mining sector companies listed on the Indonesia Stock Exchange for the period 2014-2019. Sampling of mining companies has a reason, namely in the data taken from the KPK, mining sector companies have made default achievements, namely a lack of payment of mining taxes in the forest area of Rp. 15.9 trillion. Even in 2017, the shortage of payments has increased to reach Rp. 25.5 trillion (Novriansa, 2019). Besides, there are still many companies that are proven to be tax evasions, such as PT Adaro Energy and PT. Multi Sarana Avindo (Yang, 2019).

Based on the results of previous research, the influence of variables that are still different, the authors are interested in re-examining the observations made by Permata et al., (2018) regarding the effect of size, age, profitability, leverage, and sales growth on tax avoidance. The research equation of Permata et al., (2018) with this study is that only variables are used to determine the effect of tax avoidance. As for the difference in observations made by Permata et al., (2018) with this observation, it is in the company sample and the study period. If in the research of Permata et al., (2018) using basic industrial and chemical sector companies listed on the IDX, this research uses mining sector companies listed on the IDX. According to this description, the author uses the title Coal Mining Subsector Companies in Taxation: An Overview of Characteristics Factors.

## **METHOD**

### **Agency Theory**

The research of Hayes et al., (2015) they describe that in agency theory a person who is an agent played by a manager in a company tries to gain recognition and appreciation from a principal by justifying all means to be able to achieve the financial targets that have been made by the company. If the manager can achieve the predetermined target, the principal will give more appreciation to the manager. These factors create an opportunity for a manager to engage in manipulation and fraud.

### **Tax Avoidance**

Tax avoidance is a method that aims to minimize the number of tax payments optimally by maximizing the benefits of the regulations or provisions governing tax legally, such as by utilizing deductions and exemptions that are allowed or which do not exist in existing tax regulations apply (Suandy, 2011). Tax avoidance is permitted in practice, but on the government side, this is not desirable. As a result, tax avoidance is considered unique with complex problems (Ajeng Wijayanti et al., 2016).

### **Size**

Willy & Hartono (2015) state that the size of a company can describe the large or small quantity of a business entity that can be estimated by calculating the total assets or the size of the assets of the business entity by calculating the logarithmic value of total assets. The access of a company is directly proportional to the size of the company when the access of a company that can reach a wider area will affect the size of the company which is useful for obtaining sources of income from external parties. As a result, larger firms have an excellent opportunity to compete in the business community and have a longer chance of surviving in the industry.

According to Sari et al., (2016), company size can be classified by looking at several components such as market capitalization, total assets, sales, log size, and others where these things are commonly known as scale in company size. Companies are taxpayers so that in their operational activities they are required to pay taxes to the state as a form of obedience and obedience to state regulations. Total assets owned by a company will also affect the size of the company, the bigger the total assets, the bigger the company size which results in more complex and complex transactions. As a result, the potential for taxpayers to engage in tax avoidance will be further enhanced (Barli, 2018).

Finding by Dharma & Ardiana (2016); Mahanani & Titisari (2016) and Dewinta & Setiawan (2016) stated that tax avoidance carried out by business entities can be influenced by the size of the company. From these explanations and arguments, the research hypothesis is stated as follows:

**H1: Size affects Tax Avoidance.**

## Age

According to Dewinta & Setiawan (2016), the age of the company can be an indicator of how long the company can compete in the industrial world and can survive in various business competitions. The age of the company can also be an indicator that the company can survive or not. This will result in a wider range of financial information to be presented by the company. Companies can display their ability to maximize opportunities in their environment which aims to have a positive impact on their business and be able to overcome obstacles that hit the company and difficulties that can threaten the life of a corporate entity. It can be seen by paying attention to the company's age. In this study, the age of the company is used from the date of the establishment of a business entity listed on the Indonesia Stock Exchange.

Company age can illustrate that a company will become inefficient due to aging. Company age can affect a company in doing tax avoidance because the older the company is standing, the experience and learning and other influences that the company has, the more possible it is to reduce operational costs and of course reduce tax costs (Loderer & Waelchli, 2010). Besides, the influence of the aging company will increase the company's experience in managing and managing its human resources to do tax avoidance. Dewinta & Setiawan (2016) and Agsari (2020) literature, they explain that tax avoidance carried out by business entities can be affected by the age of the company. Based on the arguments and statements above, it can be formulated that the research hypothesis is as follows:

**H2: Age affects Tax Avoidance.**

## Profitability

According to Fahmi (2012) profitability is the capacity of a business entity to earn profits related to components such as company capital, total assets, or income from sales. Kasmir (2018) states that a company allows most of its operating capital or internal funding to be financed if the dividend rate on investment is high. For such reasons, the company's chances of being in debt to external parties can be minimized. This is because they in financing the operations of their company use the retained earnings that are owned by the company first provided that the retained earnings of the company are large.

Profitability can describe the condition of the company in obtaining a return on the company's financial performance obtained from the management of a company's assets which can be calculated using the Return on Assets (ROA) method. ROA is used by business entities to take advantage of how much assets a company uses in determining the net profit earned by the company (Cahyono et al., 2016). According to Cheisvianny & Rinaldi (2015), ROA affects tax avoidance because assets can be managed by the company effectively and efficiently. Therefore, companies tend to do tax avoidance. Based on the literature that has been made by Dewi & Noviari (2017) and Dewinta & Setiawan (2016) provides information that profitability influences tax avoidance. Based on this description, the following hypothesis is proposed:

**H3: Profitability affects Tax Avoidance.**

## Leverage

Kasmir (2018) reveals that leverage is a ratio that is used to be able to assess how far a company's assets can be financed by debt, this means how much the company's debt burden is borne by assets owned by a business entity. This ratio is used by the company to measure the capability of a business entity in paying debt, both for a short period and for a long period, however, in its implementation, a company has an option for sources of funds that can be allocated to cover shortages when it needs more funds. One component of the source of funds that can be used by a company is external debt. Therefore, management is motivated to work more creatively and make an innovation in obtaining maximum profits because the company has a burden of obligations that must be paid and paid as well as loans for capital which are relatively increasing.

In providing loans to a company, creditors must pay attention to the profit prospects of the business entity to measure the risk that will be experienced by the creditor. The balance between the proportion of assets funded by company owners and the proportion of assets funded by external parties still needs to be maintained and should not be neglected (Prastowo, 2015). In measuring the balance between the proportion of assets funded by the owner of the company and the proportion of assets funded by external parties, it can be seen by using the measurement of the Debt to Equity Ratio. Therefore, related parties who need it can find out the risk level of uncollectible corporate debt, this is because the capital structure owned by the company can be explained using the Debt to Equity Ratio calculation method (Prastowo, 2015).

Following the agency theory, the company leader has the authority to carry out tax avoidance activities, because as the highest decision-maker that the company leader is required to have a character who is brave to take risks against the influence of tax avoidance activities. At the level of tax avoidance of a company, a significant role lies in the company's management in making decisions, the debt which is determined by company financing. Research on the effect of leverage on tax avoidance conducted by Barli (2018) and Niawati et al., (2020) shows that it turns out that tax avoidance by companies can be influenced by leverage. As described above, the following hypothesis is proposed:

**H4: Leverage affects Tax Avoidance.**

### Sales Growth

Sales Growth or changes in sales explain the increase in the number of sales of a company each year. Change in sales explains that the result of a significant sale shows the volume of an increase in profit. When sales growth increases rapidly, this will also affect the increasing operating capacity of a company. Therefore, with the increasing sales growth, it will have an impact on the profits that the company has managed to get even higher. It can be concluded that the profit earned by the company will experience a positive trend of change if sales growth has increased, therefore the company undertakes tax avoidance activities so that tax obligations paid by business entities can be minimized (Dewinta & Setiawan, 2016).

By looking at sales from the previous year, the existing resources can be well optimized by a company. The operating capacity of a company can increase if it is proportional to the huge increase in sales growth. Therefore, the profit earned by the company will increase because sales growth has increased. Because of that, a company tends to do tax avoidance when sales growth increases so that the profits it generates are also greater (Dewinta & Setiawan, 2016).

The results of research on tax avoidance in companies that are affected by sales growth have been carried out by Dewinta & Setiawan (2016) and Mahanani & Titisari (2016) in their scientific journals which show that tax avoidance in companies can be affected due to sales growth. Based on this description, the research hypothesis is formulated as follows:

**H5: Sales Growth affects Tax Avoidance.**

### Variables

The purpose of this study was to determine whether the variable characteristics of the company affect tax avoidance. This study has a population of 25 coal mining companies listed on the Indonesia Stock Exchange during the 2014-2019 period. Using a purposive sampling technique, eight coal mining companies were selected as part of this study. The study used SPSS data processing tools, followed by data analysis using multiple linear regression analysis.

According to Ghozali (2016), an operational definition is a variable that can be calculated using a predetermined construct. The operational definition explains that the procedure is used by the reviewer in using constructs so that it is possible for other reviewers to replicate appropriately or make developments to get a better way of measuring constructs.

#### 1. Tax Avoidance

Tax avoidance is all forms of behavioral procedures that aim to minimize tax obligations that must be paid by taxpayers by utilizing loopholes in state regulations regarding taxation and not harming tax laws (Anita Wijayanti & Masitoh, 2018). In knowing the tax avoidance variable, it is calculated using the Effective Tax Ratio (ETR). This ETR functions with the intention that tax avoidance can be reflected. ETR, which consists of all cash used to pay taxes divided by profit before tax. According to Cheisviyanny & Rinaldi (2015), the ETR formula is as follows:

$$ETR = \frac{\text{Tax Expense}}{\text{Profit Before Tax}}$$

#### 2. Size

Size is commonly known as company size which describes the size of the total assets of a company or the amount of wealth owned by a business entity through the calculation method employing the logarithmic value of total assets (Agsari, 2020). According to Cahyono et al., (2016), the Size formula is as follows:

Size = Logarithm of Natural Total Asset

3. Age

Age, commonly known as company age, can describe the existence of a company in competing and surviving in the business world. In knowing this variable, data is used that explain the date a company is listed on the Indonesia Stock Exchange (BEI) (Dewinta & Setiawan, 2016). Based on literature from Handayani (2016) the age formula is as follows

$$\text{Age} = \text{Year of observation} - \text{Year of existence}$$

4. Profitability

Profitability or profitability is an ability that is owned by the company to get as much profit as possible related to invested capital, total assets, and sales of products produced by business entities. Return on Asset (ROA) is used in this study to determine the profitability variable. This relates to the asset management against net income that has been obtained by the company. According to May (2020), the profitability formula is as follows:

$$\text{Return on Assets} = \frac{\text{Profit Before Tax}}{\text{Total Assets}} \times 100\%$$

5. Leverage

The company's debt ability to finance a company's assets can be calculated using leverage. This study uses the Debt to Equity Ratio (DER) which aims to obtain information about the value of the leverage variable. DER has a function to explain the quantity of a ratio between the costs lent by creditors to the amount of capital that comes from the owner to finance the company. According to Ayufa et al., (2018) DER can be formulated as follows:

$$\text{Debt to Equity Ratio} = \frac{\text{Total Debt}}{\text{Total Equity}}$$

6. Sales Growth

Sales growth describes the amount of increase in profit, which is influenced by income from sales. A rapid increase in sales growth will also affect an increase in the operating capacity of a company. Therefore, the revenue generated by the company will increase because sales growth has increased. According to Agsari (2020), the sales growth formula is as follows:

$$\text{Sales Growth} = \frac{\text{Sales of the Year}_t - \text{Sales of the Year}_{t-1}}{\text{Sales of the Year}_{t-1}}$$

**RESULT AND DISCUSSION**

**Tabel 1.** Descriptive Statistical Analysis

Variable	Minimum	Maximum	Mean	Std. Deviation
Tax Avoidance (Y)	0.0583	0.9863	0.3578	0.1757
Size (X1)	18.2020	22.6997	19.9364	1.3213
Age (X2)	7	38	23.94	9.081
Profitability (X3)	0.0118	53.1502	15.1305	12.9827
Leverage (X4)	0.1694	1.4027	0.6119	0.2907
Sales Growth (X5)	-32.0205	101.6977	6.678356	25.6364

Source: Data processed, 2021

Based on the table, the results show that the lowest value of the size owned by PT Mitrabara Adiperdana Tbk in 2014 was 18.2020 and the highest value owned by PT Adaro Energy Tbk in 2019 was 22.6997. While the overall standard deviation value is 1.3212551 from 54 secondary data. The results of the descriptive analysis show information that the standard deviation value is smaller than the average (mean), so it can be concluded that the data is homogeneous, which means that the average size has a low deviation rate.

Based on the table, the results show that the lowest value of age owned by PT Toba Bara Sejahtera Tbk in 2014 was 7 and the highest value owned by PT Bukit Asam Tbk and PT Resource Alam Indonesia Tbk in 2019 was 38. While the overall standard value deviation of 9,081 from 54 secondary data. The results of the descriptive analysis show information that the standard deviation value is smaller than the mean value, so it can be concluded that the data is homogeneous, which means that the average age has a low deviation rate.

Based on the table, the results show that the lowest value of profitability held by PT Indo Tambangraya Megah Tbk in 2015 was 0.0118 and the highest value was owned by PT Baramulti Suksessarana Tbk in 2017 was 53,1502. While the overall standard deviation value is 12.9827126 from 54 secondary data. The results of the descriptive analysis show information that the standard deviation value is smaller than the average (mean), so it can be concluded that the data is homogeneous, which means that the average profitability has a low level of deviation.

Based on the table, the results show that the lowest value of the leverage held by PT Resource Alam Indonesia Tbk in 2016 was 0.1694 and the highest value owned by PT Toba Bara Sejahtera Tbk in 2019 was 1.4027. While the overall standard deviation value is 0.2907149 from 54 secondary data. The results of the descriptive analysis show information that the standard deviation value is smaller than the mean value, so it can be concluded that the data is homogeneous, which means that the average leverage has a low deviation rate.

Based on Table 4.3, the results can be drawn that the lowest value of sales growth owned by PT Resource Alam Indonesia Tbk in 2018 was -32.0205 and the highest value owned by PT Resource Alam Indonesia Tbk in 2019 was 101.6977. While the overall standard deviation value is 25.6363592 from 54 secondary data. The results of the descriptive analysis show information that the standard deviation value is smaller than the mean value, so it can be concluded that the data is heterogeneous, which means that the average age has a high degree of deviation.

Based on Table 4.3, the results can be drawn that the lowest value of tax avoidance owned by PT Darma Henwa Tbk in 2019 was 0.0583 and the highest value owned by PT Darma Henwa Tbk in 2014 was 0.9863. While the overall standard deviation value is 0.1757105 from 54 secondary data. The results of the descriptive analysis show information that the standard deviation value is smaller than the average (mean), so it can be concluded that the data is homogeneous, which means that the average tax avoidance has a low level of deviation.

**Tabel 2.** Normality Test

Kolmogorov-Smirnov Z	1.114
Asymp. Sig. (2 tailed)	0.167

Source: Data processed, 2021

The Kolmogorov-Smirnov test results that can be seen in the table are the Asymp level. Sig. (2-tailed) of 0.167, it can be concluded that the residual data have met the criteria for normal data because the value is greater than 0.05.

**Tabel 3.** Multicollinearity Test

Model	Collinerity Statistics	
	Tolerance	VIF
X1 (Size)	0.821	1.219
X2 (Age)	0.680	1.471
X3 (Profitability)	0.744	1.344
X4 (Leverage)	0.583	1.715
X5 (Sales Growth)	0.818	1.223

Source: Data processed, 2021

It can be concluded based on the table showing that the VIF for each variable has a value less than 10 and a tolerance value above 0.1. In this study, the independent variables in the regression model are not related to each other, or it can be assumed that there is no multicollinearity in the independent variables.

**Tabel 4.** Heterocedastisity Test – Spearman Rho

Variable	Signifikansi
	Unstandardized Residual
Size (X1)	0.502
Age (X2)	0.675
Profitability (X3)	0.557
Leverage (X4)	0.482
Sales Growth (X5)	0.730

Source: Data processed, 2021

Based on the table, it can be seen that the Sig. (2-tailed) of the 5 variables to the Unstandardized Residual has a significant value of more than 0.05. In the Size Sig. (2-tailed) is at 0.502. On the variable Age Sig. (2-tailed) shows the number 0.675. On the Profitability Sig. (2-tailed) returns 0.557. The fourth variable is the Leverage variable with the Sig. (2-tailed) is 0.482. The last variable, Sales Growth, has a significant value. (2-tailed) is 0.730. It can be concluded that there is no heteroscedasticity.

**Tabel 5.** Autocorrelation Test – Run Test

Unstandardized Residual – Test Value	-0.02961
Asymp. Sig. (2 tailed)	0.410

Source: Data processed, 2021

Based on table 4.7, it can be seen that the significance is 0.410, which is more than 0.05, so it can be said that the regression model in this test does not experience autocorrelation problems.

**Tabel 6.** Goodness of Fit Model (Simultaneous Significance Test)

	Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.434	5	.087	3.462	.009 <sup>b</sup>
	Residual	1.203	48	.025		
	Total	1.636	53			

Source: Data processed, 2021

Based on table 4:10 the F test shows that the results of the calculated F value of 3.462 and a significance value of 0.009 which means it is smaller than the normal limit of the significance value with the number 0.05 so it can be concluded that the five variables are size, age, profitability, leverage, and sales growth together have a significant effect on tax avoidance.

**Tabel 7.** Determination Coefficient Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.515 <sup>a</sup>	.265	.189	.158285151

Source: Data processed, 2021

Based on table 4.9, it can be seen that the coefficient of determination shows the results of Adjusted R Square (R2) 0.189, which means that 18.9% of the dependent variable, namely tax avoidance, can be explained by the five independent variables, namely size, age, profitability, leverage, and sales growth. The remaining 81.1% can be explained by other variables.

**Tabel 8.** Hypotesis Testing

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	.907	.384		2.363	.022
X1 (Size)	-.015	.018	-.112	-.818	.418
X2 (Age)	-.003	.003	-.171	-1.142	.259
X3 (Profitability)	-.008	.002	-.569	-3.967	.000
X4 (Leverage)	-.097	.098	-.161	-.993	.326
X5 (Sales Growth)	.000	.001	.053	.390	.698

Source: Data processed, 2021

In this study, empirical evidence can be seen regarding the effect of the five variables, namely size, age, profitability, leverage, and sales growth on tax avoidance in the study period with a range of years from 2014 to 2019 and the research object used is the mining sector company with coal subsector which has been listed on the Indonesia Stock Exchange. Based on the results of the tests that have been carried out in this study, it can be seen that only one of the five variables affects tax avoidance, namely the profitability variable. Because based on the table above shows data that profitability has a value of t count of -3.967 and the significant value is located at 0.000, which means it is smaller than the normal level of significance, which is equal to 0.05.

## CONCLUSSION AND RECOMMENDATION

### The Effect of Size on Tax Avoidance

Company size displays information about the size of the assets owned by the company. In testing the first hypothesis provide evidence that company size does not affect tax avoidance, which is indicated by a significant value in the study at  $0.418 > 0.05$ . Based on this sentence, it can be interpreted that the size of the company in a company does not influence the size of the tax avoidance activities carried out by the company (Annisa, 2017).

In this study, the results obtained are inversely proportional to agency theory which states that an agent can maximize the agent's performance compensation through the resources owned by a company. This can be done with the aim that the performance of a company can be maximized by emphasizing the tax burden paid by the company. This is in line when the company has a large company size, it will also have an impact on large tax payments (Suwardika & Mustanda, 2017). The results of this study are in line with research from Ganiswari (2019) and Windayani (2018) which state that company size does not affect tax avoidance.

### The Effects of Age on Tax Avoidance

The age of the company shows that the company will certainly become inefficient due to aging or the increasing age of a company. In testing the second hypothesis, it shows that company age does not affect tax avoidance because the significance value is greater than 0.05, which is 0.259. Based on this explanation, it can be concluded that the high and low age of the company in a company does not influence the level of tax avoidance carried out by the company (Wardani et al., 2020).

This study is contrary to agency theory which explains that companies in managing their tax can be maximized if the tax burden of a company is done by competent human resources. This is evidenced in the financial report data that has been collected, companies that have a longer operational period cannot be used as a benchmark in tax avoidance activities (Agsari, 2020).

The results of this observation are in line with the observations carried out by Permata et al., (2018) and Wardani et al., (2020) which reveal that company age does not affect tax avoidance. So that it can produce information that the second hypothesis which states that company age influences tax avoidance is rejected.

### **The Effect of Profitability on Tax Avoidance**

Profitability can be used to measure a company's ability to earn operating profits by utilizing assets effectively and efficiently (Sanjaya & Rizky, 2018). In testing the third hypothesis provide evidence that profitability has a significant effect on tax avoidance, with a significance value of less than 0.05, namely 0.000. This means that the higher level of profitability influences tax avoidance carried out by companies (Kadek Ari Adnyani & Bagus Putra Astika, 2019).

The results of this study support and are following agency theory which explains that the tax burden managed by the agent is managed by the agent so that later it can be assessed well by the principal. This will affect the agent's performance compensation which is not reduced because the profits of a company are reduced due to tax payment activities. The higher the profitability of the company, the higher the tax costs charged to the company (Noviyani & Muid, 2019). If the company does not have an effective and efficient way to manage tax payments, this will erode the profits that have been collected by the company in a period that will have an impact on the decreasing level of employee welfare. For this reason, the company strives to maintain its operating profit by maximally reducing the tax burden paid by the tax authorities (Suardana & Maharani, 2014).

The results of this study are following the results of research from Suardana & Maharani (2014) and Saputra et al., (2015) which states that profitability influences tax avoidance. So the third hypothesis which states that profitability affects tax avoidance is accepted.

### **The Effect of Leverage on Tax Avoidance**

Leverage serves to provide an overview of the comparison between the number of funds provided by external parties with the number of funds that come from the owner of the company. In testing the fourth hypothesis proves that leverage does not affect tax avoidance, with a significance level greater than 0.05, namely 0.326. This means that the level of leverage in a company does not affect the level of tax avoidance carried out by the company.

The results of this study do not support the agency theory which states that company leaders have their policies in carrying out tax avoidance activities, whereas decision-makers that company leaders have a character who is brave to take risks on the influence of tax avoidance activities. Regarding the level of tax avoidance of a company, a significant role is played by company management in making policies, for example, debt determined by corporate financing (Agsari, 2020).

Companies in managing debt are not only intended to create corporate profits, but there are various possibilities referred to by the company. The debt obtained by the company may be used as an investment for the long term, this will make the interest expense incurred not calculated per period in the financial statements. Thus, this cannot be used as a trick to reduce the tax burden that the company must pay to the tax authorities (Susanti, 2018).

This study is in line with the results of research from Agsari (2020) and Dewinta & Setiawan, (2016) which state that leverage does not affect the level of tax avoidance. So the fourth hypothesis which states that leverage affects tax avoidance is rejected.

### **The Effect of Sales Growth on Tax Avoidance**

Changes in sales represent an increase or decrease in the company's sales from year to year. In testing the fifth hypothesis, it shows that changes in sales do not have a significant effect on tax avoidance, namely the significance value is greater than 0.05, namely 0.698. Therefore, it can be interpreted that the rate of change in sales does not affect the size of tax avoidance carried out by the company.

This study is not in line with agency theory which states that agents try to increase company profits. If the change in sales of a company has increased, then the company has to pay higher taxes. This triggers a difference in interests between management and company owners, so there will be a problem of interest that raises the desire of management to meet the demands of the principal (Agsari, 2020). Because of that, tax avoidance activities tend to be carried out by companies because there is a large tax burden due to large profits (Kurniasih & Ratna Sari, 2013). This is what causes sales growth to not affect tax avoidance.

The results of this study support the research results of Dewinta & Setiawan (2016) and Mahanani & Titisari (2016) showing that sales growth does not affect tax avoidance. So that the fifth hypothesis which states that sales growth affects tax avoidance is rejected.

## Conclusions

From the five independent variables that have been proposed, 4 variables indicate that the data is homogeneous because the average or mean value is greater than the standard deviation value. On this basis, the data for the 4 variables have low data deviations. These variables are size, age, leverage, and profitability. Meanwhile, the sales growth variable shows a high deviation because the average value is smaller than the standard deviation value.

In this study, empirical evidence can be seen regarding the effect of the five variables, namely size, age, profitability, leverage, and sales growth on tax avoidance in the study period with a range of years from 2014 to 2019 and the research object used is the mining sector company with coal subsector which has been listed on the Indonesia Stock Exchange. Based on the results of the tests that have been carried out in this study, it can be seen that only one of the five variables affects tax avoidance, namely the profitability variable.

## Recommendation

From the conclusions that have been explained, suggestions that can be given for further research are to add or research other sectors with issues of companies that are suspected of experiencing tax avoidance scandals, such as the Chemical Industry sector experienced by PT Coca Cola and other sectors. It is hoped that the data collected will have a wider amount so that research results will be more varied and accurate.

In this study, tax avoidance, seen from the grand theory side, used agency theory. It is hoped that further research can innovate using other theories to obtain more varied research results so that they can be used as comparisons for further research. Besides, in this study, tax avoidance is calculated using the Effective Tax Rate (ETR). The ETR calculation is used to reflect the difference between the calculation of book profit and taxable profit with the net tax liability formula / financial profit before tax. However, in its implementation, the use of this calculation has a problem, namely the resulting data generates a lot of negative numbers, this is not following the provisions of the criteria that have been made, namely 0-1. Therefore, some data must be deleted so that the data becomes normal and not too extreme.

It is hoped that further research can use other measurements such as the Cash Effective Tax Rate (CETR) which is used to identify the aggressiveness of tax planning carried out by companies and the measured Book Tax Difference (BTD) to determine the difference between accounting and tax, both fixed and time differences.

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## The Effect of Environment Complexity and Resources on the Performance of SMEs Mediated By Business Strategy (Survey on Kasongan Pottery SMEs In Bantul Regency)

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### Abstract

*This study aims to analyze the effect of environmental complexity and resources on the performance of SMEs mediated by business strategy in Kasongan pottery SMEs. The population in this study were all SMEs pottery handicrafts in the Kasongan pottery center in Kasihan District, Bantul Regency, Yogyakarta. Total of 61 questionnaires have been returned and processed. The data analysis technique used was Partial Least Square (PLS) through SmartPLS 3.3.2 software. The research shows that environmental complexity has a positive and significant effect on performance of SMEs, resources have a positive and significant effect on performance of SMEs, environmental complexity has a positive and significant effect on business strategy, resources have a positive and significant effect on business strategy, and business strategy has a positive and significant effect on performance of SMEs. Also, it is found that environmental complexity has a positive and significant indirect effect on performance of SMEs through business strategy and resources have a positive and significant indirect effect on performance of SMEs mediated by business strategy.*

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## INTRODUCTION

Micro, Small and Medium Enterprises (SMEs) as independent organizations have a major role in Indonesia's economic growth. As many as 64 million SMEs in Indonesia have become the backbone of the Indonesian economy in the midst of various upheavals. This amount reaches 99.9% of all businesses operating in Indonesia. Being the backbone of the economy does not necessarily make SMEs free from problems. The low market reach in selling production, the lack of services in the form of regulations, the limited management of human resource capacity, input goods and technology are still inadequate, and the limited capital in operations is still a problem in developing SMEs (Aziz et al., 2018). The technological challenges of the industrial revolution 4.0 are also homework for SMEs. Not to forget, the factors in the business environment that are changing so rapidly present uncertainty that SMEs must face in order to continue to grow and survive.

Kasongan is the center of the pottery industry which is also a tourist village located in Bantul Regency. The experience of making pottery presented in Kasongan has attracted many domestic and foreign tourists to visit. The production of pottery was initially only in the form of household appliances which later in its development was wrapped with a touch of art, it turned out to produce products of high economic value that were able to penetrate the international market. Kasongan as a tourist village is included in the ranks of tourist villages in Bantul Regency which occupies the 5th position of the ten most visited tourist attractions in Yogyakarta by attracting 1,509,508 visitors. However, the Covid-19 pandemic that hit in 2020 has resulted in social restrictions so that the impact on the economy is also felt by this SMES center. The closing of tourism gate has reduced their income in terms of pottery making training services. Export and shipping gate which were closed at the beginning of the social restriction period also contributed to the sales reduction of pottery products. Decreasing in public purchasing power, increasingly fierce competition, and resource problems are the upmost concern for craftsmen and entrepreneur here.

As one of Indonesia's largest economic builders, the performance of SMEs continues to be a concern for the government. Support for SMEs must be enhanced especially when it came to crisis circumstance. Efforts to empower SMEs are becoming increasingly critical, given the increasingly dramatic changes in the global business environment that require SMEs to achieve competitive advantage in order to win the competition and survive (Annatan and Ellitan, 2009; Suardhika, 2012; Gede, 2020). Performance is the level of achievement of the company's achievements as measured through work results. Company performance is something that is produced by a company in a certain period with reference to the standards set (Rivai and Basri, 2004). The company's achievements can be influenced by the external business environment. Rapid and drastic changes in the environment characterize the complexity of the environment which is marked by uncertainty regarding consumer needs or tastes, competition, technological developments (Braglia & Petroni, 2000). Complexity theory models (Capra, 1996; Stacey, 1995; Wheatley, 1992; Ashmos, 2000) suggest that all organizations are complex adaptive systems, which are continuously self-regulating and co-evolving. This theory shows that every organization is actually able to adapt in the midst of environmental changes to continue to achieve superior performance.

Answering the problem of resource management is something that needs to be done for SMEs. Resources are assets that owned by a company. Optimal and superior performance can be achieved when the company has a number of special resources with various operating capabilities, marketing dynamics, marketing capabilities, and marketing viability (Sukdej and Ussahawanitchakit, 2015; Sabihaini 2018). It has been realized that competitive advantage cannot be separated from the resource-based strategy approach (Resource Based View) which holds that controlling unique strategic resources by directing management to identify, control, and develop strategic resources to produce optimal performance (Barney, 1995).

Facing today's business challenges, business people are starting to realize the importance of a business strategy to win the competition or at least maintain their business. Strategy means achieve long-term goals to be achieved by a company. The concept of strategic fit is one of the fundamentals regarding strategy as a link between the firm and its external environment. The strategy must be carried out in accordance with the external and internal environment, including resources and capabilities (Grant, 2010). The idea of strategic fit has been extended to contingency theory which emphasizes that no particular managerial action or organizational design fits all situations.

Based on the description above, the purpose of this study is to examine the impact of the environment's complexity and resources on the performance of SMEs in Kasongan pottery as mediated by business strategies.

### 1. Performance of SMEs

Performance have been defined as the level of achievement or achievement of the company as measured by the results of work. Company performance is something that a company produces over a specific period in relation to the standards that have been established (Rivai and Basri, 2004). Subjective measures can be used to assess the performance of small businesses. For small businesses, subjective performance measures are preferred over objective measures for a variety of reasons, as stated by Miles et al (2000). First of all, small businesses maintain financial information very carefully and strongly. As a result, subjective performance information will be easier to obtain than objective information, which will be tightly guarded. Second, objective financial data for small businesses is not published accurately and is sometimes not even available, making it impossible to verify the accuracy of reported financial performance. Third, assuming that financial data are accurately reported, the existing data are for the most part difficult to interpret. Subjective performance measurement is based on the perception of company managers. Some of the SMES performance measures that advised by researchers include Sabihaini and Januar Eko (2018); Hadjimonalis (2000); Miles et al. (2000); Lee and Miller (1996); Kim and Choi (1994) are sales growth, employment growth, income growth and market share growth as the most important measurement of small company performance.

### 2. Environment Complexity

Environment complexity can be stated as the degree of heterogeneity of the environmental elements in which the company operates (Keats & Hill, 1988). Environmental complexity is characterized by uncertainty and a turbulent business environment related to needs, consumer tastes, increased competition, technological changes, and socio-economic issues (Braglia and Petroni, 2000). The theory of management contingency (Burns and Stalker, 1961, Scott, 1981, Grant, 2010) states that organizations react more complex organic structures that reflect diversity in the environment when they consider the environment to be complex and turbulent. The criteria for measuring the environmental complexity were developed, use 4 indicators, namely changes in consuming tastes, levels of competition, changes in suppliers behavior and technological developments, of the concept of competition (Dess & Miller, 1993; Tan & Litchsert, 1994; Porter 1996, Braghlia & Petroni, 2000; Lucas, et al., 2010; Benito, et al., 2010; Sabihaini, 2012).

### 3. Resources

Wheelen (2018) stated that resources are organizational assets which are the basic building blocks of an organization. Resources can also be said as everything owned by the organization, both tangible and intangible that can be used to achieve a certain result. The theory of resource-based strategy (Resource Based View) holds that companies that are able to control the uniqueness of their resources will be able to maintain their competitive advantage by directing management to manage, control, and develop resource strategies to produce optimal performance (Barney, 1995). According to Kor and Mahoney (2009) there are 6 indicators that can be used to measure resources, they are physical resources, reputation resources, financial resources, human resources, organizational resources, and technological resources.

### 4. Business Strategy

Strategic is the way that individuals or organizations use to achieve their objectives (Grant, 2010). Porter said that strategy is to create a set of organizational activities in a way to provide added value to customers (Becker et al., 2009). The business strategy is a combination of commitments and resources-building activities to create unique competitive capabilities for certain markets, according to Phongpetra (2011). Porter (1980) in Fred R. David (2016) proposes three generic strategies to achieve excellence in a particular industry, namely cost leadership strategies, differentiation strategies, and focus strategies.

Sabihaini and Mintarti (2012) in their research found that environmental complexity has a positive and significant effect on performance. This finding shows that the more complex the environment, the higher the level of achievement of company performance. Furthermore, Suardhika's research (2011) found a negative relationship between environmental dynamics and business performance. This means that the higher the level of environmental dynamics, it will hamper or reduce business performance. The complex environment is more or less forcing every form of business to continue to adapt in order to maintain its business performance. So, the first hypothesis formed is:

H1: Environment complexity has a positive and significant effect on the performance of SMEs at the Kasongan pottery center.

The resources and capacity of the company have a big role in improving the company's performance (Pearce and Robinson, 2007). Proper resource management will improve work performance. This argument is supported by Sabihaini's research (2018) which finds a positive relationship between resources and performance. The better the resources, the higher the performance that can be achieved. Suardhika (2011) also found a positive relationship between strategic resources and business performance, which means that the stronger strategic resources, the better business performance. So the second hypothesis formed is:

H2: Resources have a positive and significant impact on the performance of SMEs at the Kasongan pottery center.

Lukas, et al. (2001) have shown the relationship between environment and strategy that has positive and significant implications for business performance. Sabihaini and Januar Eko (2018) found a negative relationship between environmental complexity and diversification strategy, which means that the higher the environmental complexity, the lower the level of diversification. A complex and swiftly changing environment will spur companies in an industry to become more adaptive in adjusting their strategies. Therefore, the third strategy is:

H3: Environment complexity has a positive and significant effect on business strategy at the Kasongan pottery center.

Strategic decisions are closely related to the resources owned by a company. How a company manages its resources has an influence on the strategy implemented. This argument is supported by the research of Gede et al. (2020) who found that resource strategy has a positive and significant effect on competitive strategy. A stronger resource strategy will increase the suitability of the competitive strategy. Sabihaini and Januar Eko (2018) also found a positive relationship between resources and diversification strategies. Therefore, the hypothesis is:

H4: Resources have a positive and significant impact on business strategy at the Kasongan pottery center.

Strategy provides guidance for the companies who want to achieve their objectives (Gibcus and Kemp, 2003; Qi et al., 2011; Parnell, 2011; Gede et al., 2020). The company will achieve, maintain, and improve good performance through the implementation of the right business strategy. Gede et al. (2020) researched that competitive strategy had a positive and significant effect on business performance and supported this argument. Therefore, the hypothesis is:

H5: Business strategy has a positive and significant impact on the performance of SMEs at the Kasongan pottery center.

Lukas et al. research (2001) showed that the environment and strategy are compatible with each other and have positive performance implications. Arrive (2018) concludes that corporate strategy can mediate company performance environmental complexity. The role mediation of diversification strategies in the connection between environmental complexity and business performance was also identified in Sabihaini and Januar Eko (2018). A corporation will be urged to pay more attention to assessing its external environment by sensitivity to changes in business settings in order to design the proper strategy to be implemented in a circumstance to improve its business performance. As a result, the hypothesis is as follows:

H6: Environment complexity has a positive and significant impact on the performance of SMEs through a business strategy as a mediation at the Kasongan pottery center.

The suitability of the applied strategy with company resources is an important first step in improving company performance (Wernerfelt, 1984, Porter, 1998, Gede 2020). Suardhika (2011) found a positive and significant indirect effect between strategic resources on business performance through competitive strategies as mediation. That is, the more effective strategic resources as the basis for competitive strategy, the more effective the business performance. Gede's (2020) research conducted on 149 SMEs in Bali found that resource strategy and performance have a positive and significant indirect relationship through competitive strategy. So, the hypothesis formed is:

H7: Resources have a positive and significant impact on the performance of SMEs through a business strategy as a mediation at the Kasongan pottery center.

**METHOD**

This study employs the quantitative survey method. With a sample of 61 SMEs, the population studied was all SMEs in the Kasongan pottery industry center. Because there are fewer than 100 samples in the research population, the sampling technique is census sampling. Each SMES is represented by its owners or managers. The perception of the SMES owner or management is used to measure the factors in this study. The information used is primary data gathered from survey respondents. In this study, an interval scale with a Likert scale technique was applied. With the help of the SmartPLS 3.3.2 application, this study employs the partial least square (PLS) data analysis technique.

**RESULT AND DISCUSSION**

**Descriptive Analysis**

This study used descriptive analyzes to describe the characteristics and variables of SMEs and respondents. The characteristics of the SMEs examined were based on the age of the SMEs and on the age and ultimate level of training of the respondents. A table of characteristics of SMEs and participants is provided below.

**Table 1.** Characteristics of SMEs and Respondents

Characteristics	Quantity	Percentage
<b>Age of SMES</b>		
<5 years old	4	6,56%
5 – 10 years old	10	16,39%
>10 years old	47	77,05%
<b>Age of Respondent</b>		
< 30 years old	6	9,84%
31 - 40 years old	11	16,39%
41 - 50 years old	28	45,90%
< 50 years old	16	26,23%
<b>Level of Education</b>		
Elementary School	2	3,28%
Junior High School	11	18,03%
High School	35	57,38%
Diploma	5	8,20%
Bachelor	8	13,11%

Source: Primer Data, 2020

Table 1 shows that the majority of the SMEs studied in this study are over 10 years old, accounting for 77,05 percent of the total. Most of the respondents are 41-50 years old, accounting for 45,90 percent of the total, and the majority of them have completed high school or equivalent, accounting for 57,38 percent of the total.

**Outer Model**

Validity testing was done using the loading factor value, discriminant validity, and average variance extracted (AVE). Reliability testing used the composite reliability and Cronbach's alpha values in the evaluation of the measurement model. All of items in each variable in this study have a loading factor value more than 0,7, so the findings of the loading factor test (see Appendix 1) can be used to conclude that all indicators in the study are valid. All indicator variables in this study have the largest cross loading values formed (see Appendix 2). Based on the results obtained, it can be stated that the indicators used in this study have good discriminant validity in compiling the variables.

Convergent validity testing in this study was also carried out by looking at the Average Variance Extracted (AVE) value. The research instrument can be declared valid if it has an AVE value above 0,50 (Hair et al., 2013 in Sholihin and Ratmono 2013). Table 2 shows the AVE value of this research instrument. All of the AVE values in this research were more than 0,50. This signifies that all of the measures that compose the construct of this study are valid because they meet the criteria.

**Tabel 2.** AVE, Composite Reliability, Cronbach's Alpha

	Average Variance Extracted (AVE)	Composite Reliability	Cronbach's Alpha
Kinerja UMKM	0,733	0,943	0,926
Kompleksitas Lingkungan	0,701	0,949	0,939
Strategi Bisnis	0,683	0,945	0,934
Sumber Daya	0,690	0,961	0,955

Source: SmartPLS Processed Data, 2020

The value of composite reliability and Cronbach's alpha are used in reliability testing. If the composite reliability and Cronbach's alpha values are greater than 0,70, an instrument was shown to be reliable. Table 2 demonstrates that all constructs in this study have a value greater than 0,70, indicating that it has good reliability.

### Inner Model

Evaluation of the structural model was conducted by goodness of fit test, path coefficients test, and hypotheses test. The goodness of fit test can be done by looking at the value of the coefficient of determination ( $R^2$ ), the value of predictive relevance, and the goodness of fit index.

**Tabel 3.** Coefficient of Determination ( $R^2$ )

Variable	$R^2$
Performance of SMES	0,899
Strategi Bisnis	0,893

Source: SmartPLS Processed Data, 2020

Based on table 3, it can be seen that the  $R^2$  value of SMES performance is 0,899 and the  $R^2$  value of business strategy is 0.893. The  $R^2$  value on the SMES performance of 0,899 indicates that the ability of the complexity of the environment, resources, and business strategy in explaining the performance variable is 89,9%, meanwhile, the  $R^2$  value of the business strategy of 0,893 indicates that the ability of environmental and resource complexity to explain the variables business strategy that is equal to 89,3%. Furthermore, the goodness of fit assessment is carried out by looking at the predictive relevance ( $Q^2$ ) value. The results of the calculation of the value of  $Q^2$  based on the formula according to Hussein (2015) are as follows.

$$Q^2 = 1 - (1 - R_1^2)(1 - R_2^2) \dots (1 - R_p^2)$$

$$Q^2 = 1 - (1 - 0,899)(1 - 0,893)$$

$$Q^2 = 0,889$$

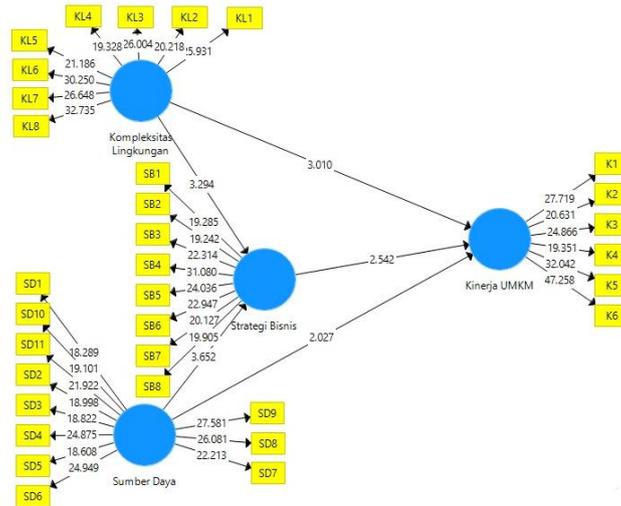
The results of the calculation above have obtained a  $Q^2$  value of 0,889, this indicates the magnitude of the diversity of the research data that can be explained by the research model is 88,9% while the remaining 11,1% is explained by other factors outside the research model. Furthermore, goodness of fit test can be done by looking at the goodness of fit index which is calculated by the following formula.

$$GoF = \sqrt{AVE \times R^2}$$

$$GoF = \sqrt{0,702 \times 0,896}$$

$$GoF = 0,793$$

The goodness of fit index calculation above yielded a value of 0,793, which may be classified as high because it is greater than 0.38. As a result, the model in this study has been determined to have a good goodness of fit.



**Figure 1.** Result of Inner Model  
Source: SmartPLS Processed Data, 2020

Furthermore, in testing the structural model, the path coefficient test is carried out. Path coefficient testing is conducted to determine how strong the effect or influence of certain independent variables on the dependent variable. Based on the test results of the inner model as shown in Figure 1 above, it can be seen that the largest path coefficient value is indicated by the influence of resources on business strategy, which is 3,652. Then followed by the effect of environmental complexity on resources that is equal to 3,294. This is followed by the effect of environmental complexity on the performance of SMEs, which is 3,010 and the influence of business strategies on the performance of SMEs, which is 2,542. And the last is the influence of resources on the performance of SMEs which is 2,027.

Direct and indirect impacts are tested to evaluate hypotheses. The following steps can be used to decide whether to accept or reject the hypothesis: (1) looking at the P values and (2) comparing the t-statistical value with the t-table (Hussein, 2015). With a df of 58, the t-table value for this study is 1.6715.

**Tabel 4.** Direct Effect

	Original Sample	T Statistics	P Values
Environment Complexity → Performance of SMEs	0,408	3,010	0,001
Environment Complexity → Business Strategy	0,452	3,294	0,001
Business Strategy → Performance of SMEs	0,297	2,542	0,006
Resources → Performance of SMEs	0,261	2,027	0,022
Resource → Business Strategy	0,505	3,652	0,000

Source: SmartPLS Processed Data, 2020

Based on table 8, the results of hypothesis testing are obtained:

H1: Environment complexity has a positive and significant effect on the performance of SMEs in the Kasongan pottery center, because the original sample was 0,408 (positive), t statistic was 3,010 (> 1,6715), and P values were 0,001 (<0,05).

H2: Resources have a positive and significant effect on the performance of SMEs at the Kasongan pottery center, which is accepted because the original sample is 0,261 (positive), t statistic is 2,027 (>1,6715), and P values are 0,022 (<0,05).

H3: Environment complexity has a positive and significant effect on business strategy for SMEs at the Kasongan pottery center, which is accepted because the original sample is 0,452 (positive), t statistic is 3,294 (> 1,6715), and P values is 0,001 (<0,05).

H4: Resources have a positive and significant effect on business strategy for SMEs at the Kasongan pottery center, because the original sample is 0,505 (positive), t statistic is 3,652 (> 1,6715), and P values 0.000 (<0,05).

H5: The business strategy has a positive and significant effect on the performance of SMEs in the Kasongan pottery center, because the original sample is 0,297 (positive), the t statistic is 2,542 (> 1,6715), and the P values are 0,006 (<0,05).

**Table 5.** Indirect Effect

	Original Sample	T Statistics	P Values
<b>Environment Complexity → Business Strategy → Performance of SMES</b>	0,134	1,954	0,026
<b>Resources → Business Strategy → Performance of SMES</b>	0,150	1,859	0,032

Source: SmartPLS Processed Data, 2020

Based on table 9, the results of hypothesis testing are obtained:

H6: Environment complexity has a positive and significant effect on the performance of SMEs through business strategies as a mediation at the Kasongan pottery center, which is accepted because the original sample is 0,134 (positive), t statistic is 1,954 ( $> 1,6715$ ), and P values 0,026 ( $< 0,05$ ).

H7: Resources have a positive and significant impact on the performance of SMEs through business strategies as a mediation at the Kasongan pottery center, because the original sample is 0,150 (positive), t statistic is 1,859 ( $> 1,6715$ ), and P values 0,032 ( $< 0,05$ ).

### SEM-PLS Mediation Testing with the Variance Accounted For (VAF) Method

The Variance Accounted For (VAF) test aims to determine how much the mediating variable's ability to absorb direct effects. VAF calculation is done by dividing the indirect effect by the total effect. The total effect is the sum of the direct and indirect effects (Sholihin and Ratmono, 2013). If the VAF shows value more than 80%, then the mediating variable can be said to be full mediation. The VAF value which is in the range of 20-80% indicates the mediating variable as partial mediation. If the VAF value does not reach 20%, it can be stated that there is almost no mediation at all (Hair et al, 2013 in Sholihin and Ratmono, 2013).

**Table 6.** VAF Calculation

Direct Effect	
1. Environment Complexity → Performance of SMES	3,010
2. Resources → Performance of SMES	2,027
Indirect Effect	
1. Environment Complexity → Business Strategy → Performance of SMES	1,954
2. Resources → Business Strategy → Performance of SMES	1,859
Total Effect	
1. Environment Complexity, Business Strategy, Performance of SMES (3,010+1,954)	4,964
2. Resources, Business Strategy, Performance of SMES (2,027+1,859)	3,886
VAF = Indirect Effect / Total Effect	
1. VAF Environment Complexity (1,954/4,964)	0,394
2. VAF Resources (1,859/3,886)	0,479

Source: SmartPLS Processed Data, 2020

Based on the VAF calculation table in table 6, the VAF value for testing the effect of business strategy variables as a mediator between the effect of environmental complexity on SMES performance is 0,394 or 39,4%. Meanwhile, the VAF value to test the effect of business strategy variables as a mediator between the influence of resources on SMES performance is 0,479 or 47,9%. From these results, it can be concluded that the business strategy has a partial mediating effect.

Environment complexity has a positive and significant effect on the performance of SMEs at the Kasongan pottery center, according to the results of testing hypothesis 1. The more complex the environment, which is characterized by diversity or heterogeneity and rapid turbulence, which refers to the high level of change in consumer tastes who want diverse products, increased price, quality, and quantity competition between SMEs in pottery, the occurrence of changes in supplier behavior and the number of suppliers, and the increasing development and the increasing development of technology use will improve the performance of SMEs. This result is different from Suardhika's (2011) research which found a negative relationship between environmental dynamics and business performance. this is due to a new trend that

has occurred during the COVID-19 pandemic in Indonesia, the trend of growing crops. As a result, the demand for pottery in the form of plant pots has increased sharply. Hence the environmental complexity faced due to this pandemic can actually improve the performance of SMEs in Kasongan.

Based on findings from hypothesis 2, the performance of SMEs at the pottery center Kasongan has been shown to be influenced positively and significantly by resources. This means that the higher the optimization of the resources owned by SMEs, including the optimization of physical resources, namely equipment and production sites, financial availability and financial capability, adequate human resources and has participated in the development of appropriate resources, has a good product reputation and high level of customer trust in SMEs and a good reputation from the suppliers side, being able to utilize organizational resources such as control and coordination systems, and using the right technology in their business activities, the higher the performance achieved by SMEs. These findings are consistent with the results of research conducted in Sabihaini and Januar Eko (2018) and Suardhika (2011).

The findings of testing hypothesis 3 revealed that environment complexity is related to corporate strategy in a positive and significant way. The increasing complexity of the environment, which refers to the high level of change in consumer tastes who want a variety of products, the increasing price, quality, and quantity competition between SMEs in pottery, changes in supplier behavior and the number of suppliers, and technological developments, will also increase the business strategy. The results of this study are in line with Gede et al., (2020) who found that resource strategy has a positive and significant effect on competitive strategy.

The results of testing hypothesis 4 have shown that resources are positively and significantly related to business strategy. This entails increasing the efficiency of SMEs' resources, such as optimizing physical resources, such as equipment and production sites, financial availability and financial capability, adequate human resources and participation in the development of appropriate resources, having a product reputation and high customer trust in SMEs, and having a good reputation in the suppliers side, the ability to use organizational resources such control and coordination systems, as well as the appropriate technology in company activities, will improve business strategy. This is consistent with the findings of Gede et al. (2020), who discovered that resource strategy has a positive and significant effect on competitive strategy.

The results of hypothesis 5 test have shown that business strategy is positively and significantly related to the performance of SMEs. This means increasing business strategies that refer to keeping costs lower than competitors, having cost-efficient products, conducting cost analysis and improving coordination across various products, creating different products, conducting market research on different products, focusing on specific customers, focusing on certain products, and focusing on certain market segments will improve SMES performance

The indirect effect test on hypothesis 6 has shown that there is a positive and significant indirect relationship on the effect of environment complexity on SMES performance mediated by business strategy. This means that a business strategy that refers to a cost leadership strategy, a differentiation strategy, and a focus strategy is able to support the influence of environment complexity in improving the performance of SMEs at the Kasongan pottery center. Business strategy is able to support the influence of environmental complexity which refers to changes in consumer tastes, levels of competition, changes in supplier behavior, and levels of technological development so that environmental complexity can improve SMES performance which refers to sales growth, income growth, employment growth, market share growth, profit growth, and overall performance. This finding is in accordance with research by Sabihaini and Januar Eko (2018), which also found that diversification strategy plays an intermediate role in the relationship between environmental complexity and company performance.

Meanwhile, evaluating hypothesis 7 demonstrates that business strategies mediate a positive and significant indirect relationship between resource influence and SMEs' performance. That seems to be, a business strategy that includes a cost leadership strategy, differentiation strategy, and focus strategy can help SMEs at the Kasongan pottery center improve their performance by leveraging resources. The business strategy could indeed support resource optimization which involves physical, reputation, financial, human resources, organizational and technological resources to improve performance. This finding is in line with Gede's (2020) research results, which found a positive and significant indirect link in resource strategy and performance through competitive strategy.

## CONCLUSION AND RECCOMENDATION

Based on the results of the research analysis, several conclusions can be drawn, conducted environmental complexity has a positive and significant influence on the performance of SMEs. The more complex an environment will improve the performance of SMEs. Resources were found to have a positive and significant influence on the performance of SMEs, which means that the higher the optimization of the resources owned by SMEs, the higher the performance that can be achieved by SMEs. Furthermore, in this study it was also found that the complexity of the environment has a positive and significant effect on business strategy, this means that the higher the complexity of the environment, it will increase the

implementation of business strategies in SMEs. Resources were found to have a positive and significant effect on business strategy, which means that optimizing the utilization of the resources owned by SMEs has increasing the implementation of the strategies. Business strategy was found to have a positive and significant influence on the performance of SMEs, this means that the increased implementation of business strategies will spur the improvement of SMEs performance. Meanwhile, this study shows that business strategy has an indirect effect on environmental complexity on SMEs performance and resources on SMEs performance. The business strategy is able to support the complexity of the environment and optimize human resources in improving the performance of SMEs.

This research yielded the following recommendations:

1. SMEs should make greater use of technology in their day-to-day operations. If appropriately utilized, the advancement of today's technology can be one of the cornerstones of a company's prosperity. In the middle of the Covid-19 pandemic, which has severely restricted physical activity, information technology plays a critical role in many sectors of life. SMEs might see this as an opportunity by utilizing social media and online marketplace to their advantage.
2. Enhance SMEs participation in any training or capacity-building activity carried out by relevant agencies, so that the human resources potential can be fully exploited.
3. SMEs must pay closer attention to the market segments they are aiming for. Knowing the target market group will make it easier for SMEs to obtain information about what products that consumers want, allowing them to satisfy their customers' requirements and preferences while also focusing resources, time, and expenses effectively.

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## The Effect of BI Rate and Exchange Rate on Inflation in Indonesia with the Money Supply as a Mediating Variable

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### Abstract

*Inflation can be interpreted as a tendency to increase the prices of goods and services in general and continuously which can be influenced by several factors such as reference interest rates, exchange rates, the money supply and so on. This study intends to analyze about the influence of the BI rate and the exchange rate on inflation in Indonesia with the money supply as an intervening variable. The population in this study is Inflation, BI Rate, Rupiah / USD Exchange Rate, and Money Supply. The sample used is this data in the 2010-2019 period which was analyzed using WarpPLS and Sobel Test. The results show that the BI rate, exchange rate and the money supply have a significant effect on inflation and the money supply can mediate the effect of the BI rate and the exchange rate on inflation which has been proven by the sobel test.*

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## INTRODUCTION

Since 2019, The World Economic Forum has introduced the Global Competitiveness Index 4.0. This index was built with a new concept that integrates pillars capable of driving long-term productivity and growth in line with the industrial revolution 4.0. This new method also includes the use of improved technology to complement other pillars of competitiveness (WEF, 2019). The Global Competitiveness Index (CGI) 4.0 consists of 12 pillars with 98 indicators ranging from 0-100.

One of the pillars used in measuring the competitiveness of the WEF version is the macroeconomic pillar with its forming variables, among others, interest rates, exchange rates and inflation. One of the macroeconomic indicators that can show the stability of a country's economy is inflation, because the impact of inflation can be serious for economic growth, inflation is an important government concern.

One of the factors influencing changes in inflation in Indonesia, namely the BI Rate or Bank Indonesia's benchmark interest rate, which is a signal for banks to set interest rates such as savings, time deposits and credit. Changes in the BI Rate will affect macroeconomic variables that will have an impact on inflation (Yodiatmaja, 2012).

Another factor that affects inflation is the exchange rate. The success of controlling inflation can encourage the strengthening and stability of the rupiah exchange rate by reducing the difference between domestic prices and foreign prices (Bank Indonesia, 2004).

As the economy develops, controlling the money supply is a very important factor in the overall economic activity of a country, as stated by Walter Bahegot that money will not manage itself. If the amount of money in circulation is excessive and not properly controlled, it will cause inflation which will hinder the increase in real people's income and overall economic growth. On the other hand, if the money supply is too small, economic activity will be hampered.

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Based on the description above, the following shows the data on the BI Rate, Rupiah Exchange Rate against USD, the Broad Money Supply (M2) and Inflation in Indonesia in 2010 – 2019

**Table 1.** BI Rate, Rupiah Exchange Rate, Money Supply and Inflation in Indonesia in 2010 – 2019

<b>Tahun</b>	<b>BI Rate (%)</b>	<b>Exchange Rate (Rp/USD)</b>	<b>Money Supply (M2) (Milyar Rp)</b>	<b>Inflation (%)</b>
2010	6.5	8.991	2.471.205,79	6.96
2011	6	9.068	2.877.219,57	3.79
2012	5.75	9.670	3.307.507,55	4.30
2013	7.5	12.189	3.730.197,02	8.38
2014	7.75	12.440	4.173.326,50	8.36
2015	7.5	13.795	4.546.743,03	3.35
2016	4.75	13.436	5.004.976,79	3.02
2017	4.25	13.548	5.419.165,05	3.61
2018	6	14.481	5.760.046,20	3.13
2019	5	13.901	6.136.551,81	2.72

Source: Bank Indonesia and the Indonesian Central Bureau of Statistics (BPS)

Table 1 above shows that the BI Rate, Rupiah Exchange Rate against USD, Money Supply and Inflation in Indonesia have experienced an up and down cycle. The BI Rate experienced a high increase in 2013, namely 30.4% and decreased by 36.7% in 2016. In 2013, the Rupiah Exchange Rate against USD was in the range of IDR 12,189 or a drop of around 26.0% from 2012. Conditions This happened because Indonesia experienced many "attacks" from the

global in the form of US economic improvements, the shutdown of the US Government, and the tapering off plan carried out by the US Central Bank (the Fed) which had signaled it would reduce monetary stimulus, so since May August 2013, the flow of foreign capital continues. The impact of the global economic "attack" also had an impact on the exchange rate of the Rupiah against the USD. In early 2013, this Rupiah currency opened at the level of Rp. 9,600 / USD and at the end of 2013 fell to the level of Rp. 12,189 / USD. With the depreciation of the Rupiah exchange rate, it can be ascertained that the inflation rate will also increase, because the Rupiah exchange rate has a function as a nominal anchor in controlling inflation, namely to prevent inflation due to increases in international prices of goods.

The data above shows that the Money Supply in a broad sense (M2) has increased from 2010 - 2019. The Money Supply has an effect on inflation as explained by Fisher's quantity theory which states that if there is an increase in the money supply, it will stimulate inflation, with the assumption that the speed of the money supply and the volume of production of the economy are constant. Without an increase in the money supply, there will be no inflation even though there is an increase in prices.

Inflation data for 2010 - 2014 shows a very fluctuating figure, and began to stabilize in 2015 - 2019. Inflation in 2013 increased to 8.38% from 4.30% in 2012 or above the inflation target set, 4.5 + 1%. The increase in inflation was mainly due to the impact of the domestic food price fluctuation as well as the impact of the increase in subsidized fuel prices at the end of June 2013. The increase in subsidized fuel prices has driven price increases, both in direct and second round effects. The Central Statistics Agency (BPS) noted that throughout 2019 Indonesia experienced inflation of 2.72% or lower than the inflation that occurred throughout 2018 of 3.13%. Inflation in 2019, which was below 3%, was the lowest since 2009, which was recorded at 2.78% (Media Indonesia, January 2, 2020).

The Central Statistics Agency (BPS) recorded an inflation rate from January to December 2019 of 2.72%, this condition is the lowest for the last 10 years and the first time below 3% even though the money supply has increased for 5 consecutive years. The graph below shows the money supply and inflation that has occurred in Indonesia in the last 10 years.

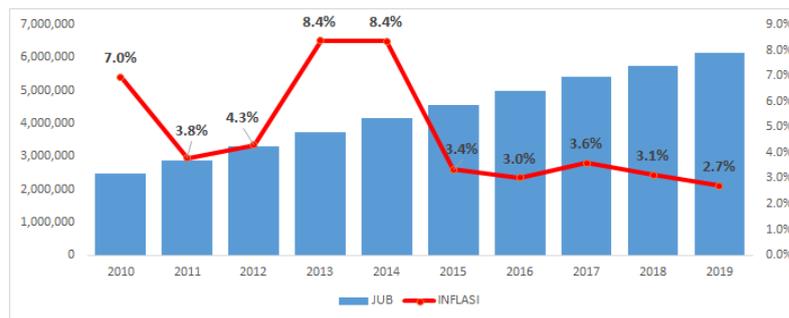


Figure 1. The Money Supply and Inflation in Indonesia 2010-2019

Amid the low inflation that occurred in 2019, there are positive and negative sides that can be analyzed. The government and Bank Indonesia can make a low inflation rate, a relatively stable exchange rate, and a downward trend in interest rates as momentum to boost slowing economic growth. Things that need to be watched out for from the low inflation rate in 2019 include indicating a weakening in the household consumption sector, weakening non-oil and gas exports, and increasing imports, and indicating a decline in purchasing power

Research on the effect of the BI Rate, the Rupiah Exchange Rate and the Money Supply on Inflation has been widely conducted and has provided different analysis results from several researchers. Research from Theodoros, Vecky and Hanly (2014) shows that the BI interest rate has a positive and significant effect on the inflation rate in Indonesia, while the money supply and the IDR / USD exchange rate have a positive and insignificant effect on the inflation rate in Indonesia. Mahendra (2016) produced research on the effect of the money supply, the Rupiah exchange rate against the USD and the BI Rate which did not significantly influence inflation in Indonesia. Krisnaldy (2017) in his test results show that the variable growth in the money supply and the interest rate does not have a significant effect on changes in the inflation rate in the short term, only the growth variable of the Rupiah exchange rate against the USD has a significant effect on changes in the inflation rate in the short term. The results of research from Setiartiti and Hapsari (2019) using Model Error Correction (ECM) to obtain a balance model and find out the effect of each independent variable in the short and long term. The results show that the money supply has a positive and significant effect on inflation in the short run. When the money supply increases by one point, inflation increases by 9.68 points. However, the money supply has no significant effect in the long run on inflation. The exchange rate and

the BI exchange rate also did not have a significant effect on inflation, neither in the long term nor in the short term. Sari and Yeniwati (2019) conducted research on the effect of interest rates, money supply and exchange rates on the inflation rate in Indonesia in 2005 - 2018 showing the results of research that interest rates and money supply have a significant positive effect on inflation in Indonesia, while the exchange rate does not have a significant effect on inflation in Indonesia. Turna (2020) who conducted research on the effect of exchange rates and interest rates on inflation that occurred in Turkey provided the results of an analysis that in the short and long term, these two variables had an effect on inflation in Turkey.

From the above description, it can be seen that interest rates, currency exchange rates and the amount of money supply have an influence on inflation that occurs in Indonesia and in other countries. Based on these phenomena and background problems, this study intends to discuss "The Effect of the BI Rate and Exchange Rates on Inflation in Indonesia with the Money Supply as an Intervening Variable (2010-2019 Period)"

### **The Effect of the BI Rate and The Exchange Rate of IDR / USD on Inflation**

One of the factors influencing changes in inflation in Indonesia is the benchmark interest rate of Indonesian banks or in other words the BI Rate, which is a signal for banks to set interest rates such as savings, deposits and credit. According to Yodiatmaja (2012: 3) changes in the BI Rate will affect several macroeconomic variables which are then passed on to inflation. Kemu and Ika (2016) in their research stated that the BI Rate has no effect on inflation in Indonesia.

Changes in the BI Rate affect deposit rates and bank lending rates. If the economy is experiencing a downturn, Bank Indonesia can use an expansionary monetary policy by lowering interest rates to stimulate economic activity. A reduction in the BI Rate will lower lending rates, so that demand for credit from companies and households will increase. A reduction in loan interest rates will also reduce the cost of capital for companies to invest. All of these will increase consumption and investment activities so that economic activity will be more vibrant. Conversely, if inflationary pressure increases, Bank Indonesia responds by raising the BI Rate to put a brake on economic activity that is too fast to reduce inflationary pressures (Bank Indonesia, 2013).

Based on previous research and the description above, the following hypothesis can be formulated

*H1 : BI Rate (X1) has a negative and significant effect on inflation (Y2) that occurs in Indonesia*

*H2 : The exchange rate of IDR / USD (X2) has a positive and significant effect on inflation (Y2) in Indonesia*

### **The Effect of BI Rate (BIR), Exchange Rate (KURS) on Inflation (INF) through Money Supply (JUB)**

Research from Fauziyah and Cahyono (2016) that the BI Rate affects the Money Supply. The BI Rate is the benchmark interest rate used as a monetary policy instrument in regulating the money supply.

Krugman (2009) The movement of the exchange rate will change the movement of the money supply. In a condition where the exchange rate is appreciated, the money supply will decrease and in a condition of depreciation, the money supply will increase. Hendayanti and Nugrahini (2016) conducted a study on the exchange rate of IDR / USD against the Money Supply and concluded that there was a significant and positive relationship between changes in the rupiah exchange rate against the US dollar in the previous month and changes in the money supply this month. Firmansyah (2016) in his research on the Effect of Exchange Rates on the Amount of Money Circulating in Indonesia 2010-2014 that the stable exchange rate of the rupiah against the US dollar will have a large enough impact on foreign and local investors to invest in Indonesia, This investment will of course bring an influx of funds into Indonesia, which of course is closely related to the exchange rate with the amount of money circulating in society.

The relationship between money supply and inflation can be explained through the Quantity Theory of Money (Lestari, 2018; Ambarini, 2015). The theory put forward by Irving Fisher (2011) is most widely used as a reference to understand the relationship between money supply and inflation. This theory states that there is a direct relationship between money supply growth and increases in general prices or inflation.

Research by Sutawijaya and Zulfahmi (2014) states that the money supply variable in the short and long term has a positive relationship and has a significant effect on the inflation rate in Indonesia during the period 1992-2012 (annual data). The higher the money supply, both in the short term and in the long term, the higher inflation will be. The results of this study are also supported by research conducted by Prasasti (2014). The findings of this study indicate that money supply has a positive and significant effect on inflation in Indonesia in the 1973-2012 period.

Furthermore, the study by Agusmianata, Militina and Lestari (2017) concluded that money supply (M1 and M2) had a positive and significant effect on inflation in Indonesia for the 2006-2015 period (annual data).

Then Afrizal (2017) conducted a caseality test between money supply and inflation in Indonesia in the period 2000.1-2014.4 (quarterly or quarterly data). The estimation results of the Granger Causality test with a lag of 6 indicate that money supply in Indonesia has no effect on the rate of inflation. Furthermore, the estimation results of the Granger Causality test with a lag of 12 indicate that money supply in Indonesia has an effect on the inflation rate

Based on previous research and the description above, the following hypothesis can be formulated

*H3 : The Money Supply has positive significant impact on Inflation*

*H4 : The Money Supply can mediate the relationship between BI Rate and Inflation*

*H5 : The Money Supply can mediate the relationship between The Exchange Rate of IDR / USD and Inflation*

## METHOD

### Samples and Data

The data used in this study are secondary data obtained from Bank Indonesia and the Indonesian Central Bureau of Statistics (BPS). The population in this study were Inflation, BI Rate, Exchange Rate of IDR / USD, and the Money Supply. The sample data used in this study are as follows :

1. Inflation data in Indonesia in 2010-2019
2. BI Rate data for 2010 - 2019
3. Data on Rupiah Exchange Rate against USD in 2010 - 2019
4. Data on the Amount of Money Supply (M2) in Indonesia in 2010 – 2019

This study uses path analysis using Warp PLS 6.0 software. Warp PLS can analyze the value of the indirect effect and the total effect along with the value of  $\rho$ , standard error, effect size. This output is very helpful for testing the mediating variable hypothesis. Path analysis has the ability to show and test the effect directly (direct), and indirectly (indirect) on one variable with other variables. Path analysis can show the presence of a mediating variable (mediating or intervening) in an indirect relationship or show the absence of the mediating variable so that the relationship is direct between variables.

### Variable Definitions

#### Dependent Variable

The dependent variable in this study is inflation. The inflation data used is the annual general price index data published by Bank Indonesia. Inflation data can be formulated as follows:

$$\text{Annual Inflation Rate} = \frac{\text{This year's CPI} - \text{Last year's CPI}}{\text{Last year's CPI}} \times 100\%$$

Inflation data uses monthly data for the years 2010 - 2019 and is expressed as a percentage (%).

### Independen Variable

#### BI Rate

The BI Rate is a policy interest rate that reflects the monetary policy stance set by Bank Indonesia and announced to the public. The BI Rate is a financial policy set by BI every month preceded by a meeting of members of the board of governors by observing the overall economic conditions at home and abroad. Then BI's attitude towards these conditions was formulated through monetary operations as a reference for setting the BI Rate

#### Rupiah Exchange Rate against USD

Currency exchange rate or what is often referred to as exchange rate is the price of one unit of foreign currency in domestic currency or it can also be said that the price of domestic currency against foreign currency. For example, the exchange rate (NT) of Rupiah against US Dollars (USD) is the price of one US dollar (USD) in Rupiah (Rp), or it can also be interpreted as the price of one Rupiah for one USD. If the exchange rate is defined as the value of Rupiah in foreign currency it can be formulated as follows:

IDR / USD = Rupiah required to buy 1 US dollar (USD)

**Intervening Variable**

Money Supply in a Broad Meaning (M2) based on the Indonesian monetary system, M2 money supply is often referred to as economic liquidity. M2 is defined as M1 plus time deposits and public savings balances at banks, because M2 developments can also affect price developments, production and economic conditions in general.

$$M2 = M1 + TD + SD$$

M1 = The money supply in a narrow sense (consisting of currency and demand deposits)

TD = time deposits (time deposits)

SD = savings deposits

There is no general definition of M2 for all countries, because the things that are unique to each country need to be considered. In Indonesia, the amount of M2 includes all time deposits and savings balances in rupiah at banks regardless of the size of the deposits but does not include time deposits and savings balances in foreign currency (Boediono, 1994).

**RESULT AND DISCUSSION**

**Table 1.** Descriptive Statistic of The Research Variables

	N	Min	Max	Mean	Std
BIR	120	-0.430	-0.140	-0.237	0.081
KURS	120	0.850	1.520	1.183	0.212
JUB	120	0.999	1.024	1.014	0.007
INF	120	0.020	0.090	0.048	0.017
N	120				

Source: WarpPLS Processed Data, 2020

**Table 2.** Research Fit Model

Definition	Conclusion
Average path coefficient (APC)= 0.376, p<0.001	Fit
Average R-Square (ARS)= 0.670, p<0.001	Fit
Average adjusted R-square (AARS)= 0.662, p<0.001	Fit
Average block VIF (AVIF)= 1.831, acceptable if <=5, ideally <=3.3	Fit
Average full collinierity VIF (AFVIF)= 2.673, acceptable if <=5, ideally <=3.3	Fit
Tenenhaus GoF (GoF)= 0.818, small >= 0.1 , medium >= 0.25, large >= 0.36	Fit

Source: WarpPLS Processed Data, 2020

Based on the results of the fit model as presented in table 2, it can be concluded that this research model is fit. This is supported by the AVIF value of 1.831 and the AFVIF value is 2.673, which is less than 5 so that it indicates that there is no multicollinearity problem.

**Table 3.** Full Collinearity VIF, R Squared and Adjusted R Squared Tests

	BIR	KURS	JUB	INF
Full collinearity	1.709	3.438	3.862	1.684
R squared			0.727	0.612

Source: WarpPLS Processed Data, 2020

According to table 3 above, it can be seen that affect money supply at R squared is 0.727, which means the effect of variation in BI rate, currency exchange rate on money supply of 72.7% and the remaining 27.3% is

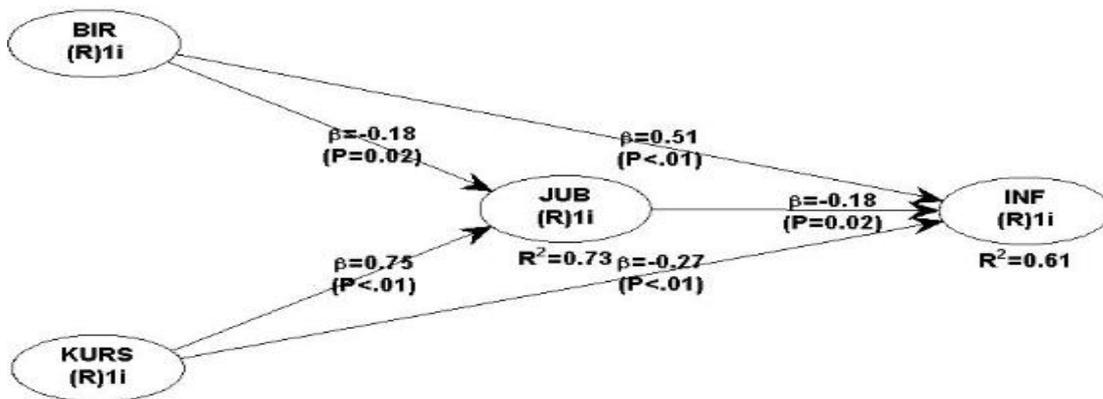
explained by other variables. The adjusted R square value for variation in the effect of BI rate, currency exchange rate , money supply on inflation is 62.12%, the remaining 37.88% is explained by other variables not included in this research method.

**Table 4.** Path Coefficient and P-Value Results

<i>Path</i>	<i>Coefficient</i>	<i>P-value</i>
BIR → INF	0.507	<0.001***
KURS → INF	-0.267	0.001***
BIR → JUB	-0.179	0.022***
<i>Path</i>	<i>Coefficient</i>	<i>P-value</i>
KURS → JUB	0.749	<0.001***
JUB → INF	-0.177	0.022***

Source: WarpPLS Processed Data, 2020

From the results of testing the path coefficient model equation and the P-value in table 4 above, the test results for the first hypothesis show that the BI Rate has a positive and significant effect on inflation in Indonesia. This is indicated by the BI rate coefficient value of 0.057 and p-value <0.001 so that the first hypothesis is rejected. For the second hypothesis, the rupiah exchange rate against USD has a negative and significant effect on inflation in Indonesia as indicated by the exchange rate coefficient of -0.267 and a p-value of 0.001, so the second hypothesis is rejected. To test the third hypothesis, namely the money supply has a negative and significant effect on inflation in Indonesia, which is indicated by the coefficient value of the money supply of -0.177 and a p-value of 0.022, so the fourth hypothesis is rejected. Next is the BI rate with a coefficient of -0.179 and a p-value of 0.022 where the fourth hypothesis of the money supply can mediate the effect of the BI rate on inflation is accepted. Furthermore, the exchange rate with a coefficient value of 0.749 and p-value <0.001, where the fifth hypothesis is that the money supply can mediate the effect of exchange rates on inflation is accepted. The full model test results can be seen in Figure 2 which shows the causal relationship between variables, in this case the BI rate, and the exchange rate are independent variables and inflation is the dependent variable mediated by the money supply.



**Figure 2.** Full Research Model

**Sobel Test**

Sobel test is a test to determine whether the relationship through an intervening variable is significantly capable of acting as a mediator in the relationship. From the calculation of the sobel test for the amount of influence of the BI rate on inflation mediated by the money supply that the results of sobel test significance value is  $0.00258686 < 0.05$ . It means that money supply can mediate significantly BI rate on inflation. From the calculation of the sobel test for the amount of influence of the BI rate on inflation mediated by the money supply that the results

of sobel test significance value is  $0.00139031 < 0.05$ . It means that money supply can mediate significantly exchange rate on inflation

#### **CONCLUSSION AND RECOMMENDATION**

In this study, the variables that affect Inflation in Indonesia are BI rate, Rupiah Exchange Rate and money supply. In addition, money supply can mediate the influence of BI rate and Rupiah exchange rate on inflation and has been proven using the Sobel test

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## Impact of Entrepreneurial Capability on New Product Development and Marketing Performance

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### Abstract

*This study departs from the problem of empirical contradictions in the findings of the study of the relationship between entrepreneurial capability and business performance. This study aims to examine and analyze the effect of Entrepreneurial capability on New Product Development which has an impact on Marketing performance. The population of this research is batik UMKM which is listed in the Map Report of the Batik Industry of the Industry and Trade Office of Central Java Province in 2013 and has criteria in accordance with the Law of the Republic of Indonesia no. 20 of 2008 non-exporter which refers to the distribution data of the number of SMEs in Central Java batik. The unit of analysis that will be used as respondents in this study is the owner or manager or owner and manager of batik SMEs in 3 (three) major areas of Central Java, namely Semarang, Pekalongan and Surakarta as many as 364 respondents. The analysis technique used in this study is Structural Equation Modeling. (SEM) with the AMOS/Amos Graph program. The results of the study indicate that the entrepreneurial capability has a positive and significant effect on new product development and marketing performance and new product development has a positive and significant effect on marketing performance.*

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## INTRODUCTION

This study departs from the problem of empirical contradictions in the findings of the study of the relationship between entrepreneurial capability and business performance. Studies conducted by previous researchers prove that the role of entrepreneurial capability on business performance is found in different findings, making it interesting to be developed further. Some study findings have proven a strong relationship between entrepreneurial capability and business performance, (Bereket Mamo Buli, 2017), (Keh et al., 2007); (Wiklund & Shepherd, 2005)), while other study findings do not support the relationship between entrepreneurial capability and business performance (Dhamayantie & Fauzan, 2017). This research gap still requires exploration of the company's entrepreneurial capabilities through relationships built on entrepreneurial capabilities which will ultimately affect the development of business performance. This problem is very important to study because it is useful for the development of marketing science related to the company's entrepreneurial capability in improving business performance. This study is expected to be able to explain the causes of differences or contradictions in the study of Entrepreneurship Capability studies on business performance and explain the efforts to develop the company's entrepreneurial capabilities on the performance of batik businesses on the scale of Micro, Small, Medium Enterprises (MSMEs). in Central Java. In addition to having the ability to absorb considerable human resources, SMEs have a significant role in national development. Batik is the art of drawing on cloth for clothing which is recognized by UNESCO as an intangible cultural heritage. Batik is fought for by the Indonesian nation as a cultural heritage and is used as the cultural identity of the Indonesian nation in the era of globalization.

### **Relationship of Entrepreneurship Capability and New Product Development**

Research by Venkataraman (2000) defines entrepreneurship as an entrepreneur as an individual who finds, evaluates, and takes advantage of profitable opportunities. Entrepreneurs need to learn how to supply new ventures with resources, such as financial capital, qualified personnel, technology, strategic partnerships, and customers (Zimmerman & Zeitz, 2002). Research by Ahuja & Katila, (2004) shows that when entrepreneurs lack instant resources to carry out missions, they tend to seek new organizational routines, find new approaches by leveraging technology and develop resources through innovation. Abdullah et al., (2018) noted that more successful business owners pay particular attention to the quality and design of products or services and collaborate with similar companies. Venkataraman, (2000) in their study stated that entrepreneurial theories have focused on the creation and growth of businesses through identifying and exploiting opportunities by bringing new goods and services to market.

The research of Schildt & Keil, (2005) is consistent with the environment-based situational learning approach and entrepreneurship learning, especially with regard to how entrepreneurs utilize and develop technology relevant to the new product or business process being planned. Agbim et al., (2013) stated that entrepreneurship consists of entrepreneurs, entrepreneurs and companies. Entrepreneurs are individuals or groups of individuals who combine resources based on new ideas so that they can add new value / existing products and or add innovation in the services provided. Entrepreneurship is an entrepreneurial process in the development of entrepreneurship, while the company is a place to produce products / services that are delivered to the community.

H1. Entrepreneurship Capability positive effect on New Product Development

### **Relationship of Entrepreneurship Capability and Marketing Performance**

Research by Prabhu et al., (2012) showed that awareness, openness to experience, emotional stability, extraversion, and risk propensity were each positively related to the intention to become an entrepreneur. Consciousness, openness to experience, emotional stability and extraversion are each positively related to firm performance. Awareness and openness are positively related to company growth, respectively. Emotional stability is positively related to growth and profitability. Agbim et al., (2013) research shows that entrepreneurship development is the process of realizing innovative intentions by an individual or group of individuals either new or old companies through a network to acquire the necessary capabilities that will increase business success in the face of environmental uncertainty. Agbim et al., (2013) stated that to develop entrepreneurship through four dimensions: entrepreneurial intention; entrepreneurial network; entrepreneurial capability; and entrepreneurial success. Research by Roudini & Osman, (2012) provides information and evidence of the role of international

entrepreneurial capability on global company performance, namely that there is a strong relationship between the dimensions of entrepreneurial capability and global company performance.

Street & Cameron, (2007) research shows that business performance or business success is determined by several factors, namely; individual characteristics and organizational characteristics. Velnampy Thirunavukkarasu, (2007) revealed that there is a positive relationship between owner/manager characteristics and business performance. Endi Sarwoko, (2013) found that entrepreneurial competence mediates the relationship between entrepreneurial characteristics and business performance and concludes that stronger entrepreneurial characteristics will lead to increased competency of SME owners and business performance. Don Y. & Erick W., (2001) also stated that experience, network development, number of business partners and desire of owners/managers have a positive impact on business growth. Yahaya et al., (2010) found that high entrepreneurial success was associated with high business operations skills, the ability to gain market share commensurate with size and ability, and skills to offer specialized services. Mahira, (2020) stated that small business owners/managers who have entrepreneurial values such as creativity, integrity and achievement are more likely to have superior performance in managing the organization than owners/managers without these values. Agbim et al., (2013) found that entrepreneurial characteristics have a strong impact on small business performance. K. C. Agbim & Oriarewo, Godday Orziemgbe, Zever, (2014) research is consistent with the results of previous studies that entrepreneurial characteristics (ie, age, gender, family background, creativity, education, experience and access to information) affect business performance. Watson, (2013) study shows that entrepreneurial characteristics (ie, family background, creativity, education, experience and access to information) affect business performance.

H2. Entrepreneurship Capability has a positive impact on Marketing Performance

### **Relationship of New Product Development and Marketing Performance**

Li, (2005) revealed that manufacturing capabilities for new products will contribute to market performance by increasing customer satisfaction and improving customer relationships. Brian Walker et al., (2005) conducted a comparative study of the effect of product and process innovation on company performance, indicating that product innovation in particular has a positive effect on business performance, especially company growth. The results of research by Moatari-Kazerouni et al., (2014) state that the orientation of increasing new products has a positive effect. and significant to growth as a larger dimension of business performance and profit compared to process improvement.

Yeh-Yun Lin & Yi-Ching Chen, (2007) revealed that product innovation is closely related to increasing company sales. Quinn Patton, (2011) suggest that adding product complexity can create greater profits if complexity is managed effectively. These results are in accordance with Mahmud et al., (2017) study which states that the development of new products can improve the marketing performance of SMEs. The results of research by Gunday et al., (2011) show that product innovation has a positive relationship with market performance with innovation performance as a mediator. The competitive advantage and performance of firms largely depend on their ability to create new and innovative products (Hall, 2013). Product differentiation is positively and significantly related to market effectiveness (Lisboa et al., 2011). The findings of Ruiz-Jiménez & Fuentes-Fuentes, (2016) show that there is a significant relationship between the ability to combine knowledge and product and process innovation and between product and process innovation and business performance.

H3. New Product Development positive effect on Marketing Performance

The importance of entrepreneurial skills in developing new products that support improving marketing performance is the main research in this study. This study will examine the direct and indirect effects of entrepreneurial capability on the development of new products that have an impact on marketing performance. In addition, this study also examines the mechanism of entrepreneurial capability as a determinant of new product development. Many previous literatures reveal the importance of entrepreneurial skills, new product development, and SME marketing performance. However, there is little evidence of the effect of entrepreneurial capability and new product development on marketing performance. Therefore, we try to identify new product development as a key variable in improving the performance of SMEs. In general, the research model is directly related to entrepreneurial capability on new product development and marketing performance. In addition, entrepreneurial ability is indirectly related to marketing performance through new product development.

Based on the research hypothesis, research empirical model projected in the following diagram model are proposed :

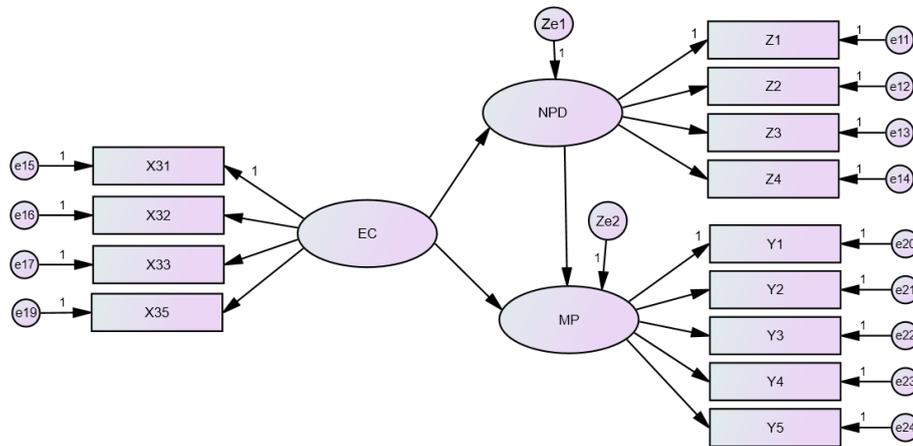


Figure 1. Conceptual framework

**METHOD**

The population of this research is batik UMKM which is listed in the Map Report of the Batik Industry of the Industry and Trade Office of Central Java Province in 2013 and has criteria in accordance with the Law of the Republic of Indonesia no. 20 of 2008 non-exporter which refers to the distribution data of the number of SMEs in Central Java batik. The unit of analysis that will be used as respondents in this study is the owner or manager or owner and manager of batik SMEs in 3 (three) major areas of Central Java, namely Semarang, Pekalongan and Surakarta. The data collection method uses purposive sampling with the following criteria: respondents are SMEs owners or managers who have been used as samples who have run their business for at least 3 (three) years who are responsible and know the overall management of SMEs, both regarding human resources, amount of capital, products produced, competencies possessed, performance achievements and entrepreneurial capabilities they have and the criteria for SMEs based on the Law of the Republic of Indonesia Number 20 of 2008.

**RESULT AND DISCUSSION**

1. Data and Analysis Techniques

Initial data screening obtained by 364 respondents was then carried out manually by examining each respondent's answer, whether the respondent's answers were consistent or not, and carried out using simple statistical tools, so that the resulting data in the right amount for further analysis was 325 data. The analytical technique used in this research is Structural Equation Modeling (SEM) with the AMOS/Amos Graph program. According to Ferdinand, (2014) this technique is intended as a group of statistical testing techniques that make it possible to test a relatively complex set of relationships/models. The innovation of this analytical technique is in management studies, because of its ability to study structural models and measurement models at the same time.

Analysis with SEM can confirm several indicators/dimensions of a concept/construct and can measure the theoretical relationship between variables. This study will analyze the influence between variables, where there are several dependent variables and the dependent variable can be an independent variable for other dependent variables. This technique is used because it has a complicated relationship between variables. The use of SEM with AMOS software is predicted to be able to assess the desired findings in this study. The model has been formulated as shown in the figure to perform the first analysis on the measurement model to test unidimensionality. The indicator that formulates the construct is by looking at the parameter findings based on goodness of fit. The measurement model will produce convergent validity to test these indicators, whether they are valid or not in measuring what is to be measured and the significance of the indicators needs to be checked, whether these indicators have the same dimensions in formulating latent variables. Validity is discriminatory to test the relationship between two constructs so that correlation numbers will be found to be used as guidelines in treating constructs as independent variables or dependent variables.

Model Feasibility Test

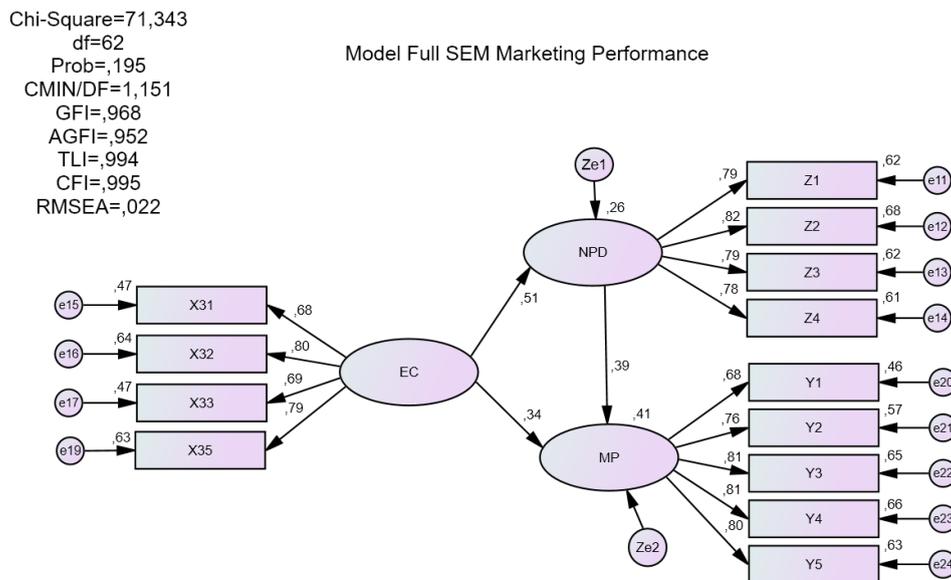
The results of the analysis of the full structural model of SEM analysis using the AMOS 22.0 program are presented in the following table :

**Table 1.** Structural/Path Model Feasibility Index

Goodness of fit	Cut off Value	Results Model	Description
$\chi^2$ – Chi-Square	81,38 (df = 62 ; $\alpha = 0,05$ )	71,343	$\chi^2 = 71,343$ <b>lower than</b> <b>81,38</b>
$\chi^2$ –Significance Probability	$\geq 0,05$	0,195	<b>Fit</b>
Relative $\chi^2$ (CMIN/DF)	$\leq 2,00$	1,151	<b>Fit</b>
GFI	$\geq 0,90$	0,968	<b>Fit</b>
TLI	$\geq 0,95$	0,994	<b>Fit</b>
AGFI	$\geq 0,90$	0,952	<b>Fit</b>
CFI	$\geq 0,95$	0,995	<b>Fit</b>
RMSEA	$\leq 0,08$	<b>0,022</b>	<b>Fit</b>

Source: Processed primary data (2021)

The statistical index for the feasibility of the Root Mean Square Error Approximation (RMSEA) model, which is related to the random error prediction value of the RMSEA value of 0.022 generated by the model is smaller than the limit number of 0.08 and the AGFI of 0.952. This shows that the prediction error of the model is small. The next model's feasibility index is the incremental fit index which includes the Tucker Lewis Index (TLI), GFI and Comparative Index (CFI). All three are index numbers that do not depend much on the size of the sample. The results of the analysis show that the index values for the three measures are above 0.95 which indicates that the concept of the model under study is fit and good.



**Figure 2.** Results of Full SEM Model Analysis

**Table 2.** Regression Weights: (Group number 1 - Default model)

			<b>Estimate</b>	<b>S.E.</b>	<b>C.R.</b>	<b>P</b>	<b>Label</b>
<b>NPD</b>	<---	EC	,548	,075	7,314	***	par_12
<b>MP</b>	<---	EC	,326	,067	4,852	***	par_10
<b>MP</b>	<---	NPD	,342	,062	5,510	***	par_11

**Table 3.** Standardized Regression Weights: (Group number 1 - Default model)

			<b>Estimate</b>
<b>NPD</b>	<---	EC	,507
<b>MP</b>	<---	EC	,344
<b>MP</b>	<---	NPD	,390
<b>Y1</b>	<---	MP	,677
<b>Y2</b>	<---	MP	,755
<b>Y3</b>	<---	MP	,808
<b>Y4</b>	<---	MP	,810
<b>Y5</b>	<---	MP	,796
<b>Z1</b>	<---	NPD	,787
<b>Z2</b>	<---	NPD	,824
<b>Z3</b>	<---	NPD	,788
<b>Z4</b>	<---	NPD	,782
<b>X33</b>	<---	EC	,688
<b>X32</b>	<---	EC	,801
<b>X31</b>	<---	EC	,684
<b>X35</b>	<---	EC	,794

#### Parameter Interpretation Results from Research Model

Results Data processing to test 3 (three) hypotheses was carried out with AMOS 22.00 as presented in the following table:

**Tabel 4.** Parameter Assessment Results from Full Model

<b>Hubungan Kausalitas</b>			<b>Estimate</b>	<b>S.E.</b>	<b>Critical Ratio</b>	<b>P</b>	<b>Label</b>
<b>Entrepreneurial Capability</b>	→	New Product Development	.548	.075	7.314	***	par_12
<b>Entrepreneurial Capability</b>	→	Marketing Performance	.326	.067	4.852	***	par_10
<b>New Product Development</b>	→	<b>Marketing Performance</b>	<b>.342</b>	<b>.062</b>	<b>5.510</b>	<b>**</b> <b>*</b>	par_11

Source: Primary data analysis results, 2021

The structure of the causality relationship equation if it is presented in standardized form is as follows:

$$\begin{aligned} \text{NPD} &= 0,507 \text{ EC} + \delta_1 \dots \dots \dots (\text{P}^{***}) && (\text{Sig}) \\ \text{MP} &= 0,344 \text{ EC} + 0,390 \text{ NPD} + \delta_2 \\ &\quad \text{P}^{***} && \text{P}^{***} \\ &\quad (\text{Sig}) && (\text{Sig}) \end{aligned}$$

Description :

- EC = Entrepreneurial Capability
- NPD = New Product Development
- MP = Marketing Performance

**CONCLUSION AND RECOMMENDATION**

The results of multiple regression analysis show that the entrepreneurial capability variable has a positive and significant effect on New Product Development. With good entrepreneurial skills, you will be able to combine resources based on new ideas so that you can add new value to existing products and or add new product innovations or in the services provided to consumers. In addition, the Entrepreneurial Capability variable has a positive and significant impact on the company's performance in batik SMEs. Most of the batik MSMEs in Central Java, they have strong entrepreneurial and creative abilities in their business so that they can survive until they can achieve their goals. These results mean that the better the entrepreneurial capabilities of batik SMEs in Central Java, such as (1) finding new ideas, (2) anticipating changing market needs, (3) being proactive in seeking market information, (4) having the courage to launch new products. , then the company's performance will also be better. Strong entrepreneurial skills will help companies to have the skills to find new ideas, anticipate market changes. Proactively seeking market information and daring to introduce new products will be able to improve their Marketing Performance.

The results of SEM analysis show that New Product Development has a significant influence on company performance in small and medium batik businesses in Central Java, with higher New Product Development owned by the owner, it can help companies to develop technology, have company quality and standards, so that can produce superior regional batik motifs, nuanced patterns of dynamic cultural blends, explore the advantages of regional identity symbols of origin and produce superior local cultural identity distinctive motifs so that through this process, small and medium enterprises are proven to be able to improve their marketing performance, able to develop technology as a a tool to advance its business and have good quality and standards so that it can survive in its business.

**CONCLUSION**

Based on the analysis and discussion of the data, the conclusions of this study are as follows: Improving the performance of MSMEs in Central Java cannot be separated from the ability of entrepreneurs to carry out New Product Development. However, the understanding of MSME actors in implementing their entrepreneurial abilities still needs to be improved. The results of the hypothesis test show that entrepreneurial ability has a significant and positive effect on New Product Development. Entrepreneurial ability has a significant and positive effect on marketing performance. New Product Development has a significant and positive effect on the Company's marketing performance.

**RECOMMENDATION**

1. For the owner, entrepreneurial ability is a variable that can significantly improve New Product Development and company marketing performance. Therefore, the owner must be able to find new ideas, anticipate changing market needs, proactively seek market information, and dare to launch new products in order to add new value to existing products and or add new product innovations so as to improve the company's marketing performance.
2. For further researchers, there are still several factors that are thought to affect marketing performance but cannot be included by the researcher. Therefore, it is recommended for further researchers to add other variables that are also one of the determining factors in improving the company's marketing performance, such as the ability to innovate, or the ability to isolate products.

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