MICRO, SMALL, AND MEDIUM ENTERPRISES, CASHLESS, AND ECONOMIC GROWTH: STUDY IN THE NATIONAL CAPITAL CITY BUFFER AREA

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ABSTRACT

The shift of the National Capital (IKN) in East Kalimantan requires provinces in the Kalimantan region to take proactive steps to support the success of its development by encouraging economic growth. One effective strategy to achieve this is to strengthen the development of green Micro, Small, and Medium Enterprises (MSMEs) that are competitive and sustainable. This study aims to explore and empirically assess the role of MSMEs in encouraging economic growth in the Kalimantan region. This research method uses the technique Moderated Regression Analysis with panel data consisting of data from provinces in Kalimantan for the period 2019-2022. The data collected from the Central Bureau of Statistics, the Department of Industry, Trade, Cooperatives, and SMEs, and the Bank Indonesia. The results of this study indicate that there is a significant influence of MSMEs on economic growth in the Kalimantan Region. In addition, evidence was obtained that cashless able to strengthen the influence of MSMEs on economic growth. So that the central government and regional governments of the provinces in Kalimantan can optimize competitive green MSMEs. This can be done through the development of MSMEs by preparing human resources, policies, supporting infrastructure for non-cash transactions (*cashless*) in MSMEs in each Kalimantan Regional area.

Keywords: *cashless*, IKN buffer zone, green UMKM, economic growth.

ABSTRAK

Pemindahan Ibu Kota Negara (IKN) di Kalimantan Timur mengharuskan provinsi-provinsi di wilayah Kalimantan untuk mengambil langkah-langkah proaktif guna mendukung keberhasilan pembangunannya dengan mendorong pertumbuhan ekonomi. Salah satu strategi yang efektif untuk mencapainya adalah dengan memperkuat pengembangan Usaha Mikro, Kecil, dan Menengah (UMKM) yang berdaya saing dan berkelanjutan. Penelitian ini bertujuan untuk mengeksplorasi dan menilai secara empiris peran UMKM dalam mendorong pertumbuhan ekonomi di wilayah Kalimantan. Penelitian ini bertujuan untuk memperoleh bukti empiris mengenai kemampuan UMKM dalam mendorong pertumbuhan ekonomi di Wilayah Kalimantan. Selain itu, penelitian ini juga bermaksud untuk membuktikan kemampuan transaksi non tunai (cashless) dalam memoderasi kemampuan atau pengaruh UMKM terhadap pertumbuhan ekonomi di Wilayah Kalimantan. Metode penelitian ini menggunakan teknik Moderated Regression Analysis dengan data panel yang terdiri dari data provinsi-

provinsi di Kalimantan periode 2019-2022. Data dikumpulkan dari Badan Pusat Statistik, Dinas Perindustrian, Perdagangan, Koperasi, dan UKM, dan Bank Indonesia. Hasil penelitian ini menunjukkan bahwa terdapat pengaruh UMKM yang signifikan terhadap pertumbuhan ekonomi di Wilayah Kalimantan. Selain itu, diperoleh bukti bahwa cashless mampu memperkuat pengaruh UMKM terhadap pertumbuhan ekonomi. Sehingga pemerintah pusat dan pemerintah daerah provinsi-provinsi di Kalimantan dapat mengoptimalkan UMKM hijau yang berdaya saing. Hal ini dapat dilakukan melalui pengembangan UMKM dengan menyiapkan sumber daya manusia, kebijakan, infrastruktur pendukung transaksi non tunai (cashless) pada UMKM di setiap wilayah Regional Kalimantan.
Kata kunci: cashless, daerah penyangga IKN, UMKM hijau, pertumbuhan ekonomi

A. INTRODUCTION

The capital city is a multifunctional city that focuses on diplomacy, government institutions, and is a center of the economy with rapid development. In order to overcome the complexities faced by the capital city and reduce the development and economic gap in Indonesia, the government has decided to move the National Capital (IKN) outside Java. The new IKN will act as the center of government located in East Kalimantan Province, precisely in Kutai Kartanegara Regency and Penajam Paser Utara Regency. The relocation of the IKN has been regulated in Law Number 3 of 2022 concerning the National Capital City. Bappenas (2020) estimates that the relocation of the IKN will increase the economic growth of Kalimantan Island by 4.7% and Indonesia by 0.6%. Based on this, the policy relationship between the buffer regions and the IKN is very much needed in strengthening their respective roles in order to support the success of the development of the new IKN.

Rustan A et al. (2021) stated that the economic growth of the IKN buffer zone must be increased to exceed 7%. For this reason, the IKN buffer zone must optimize its potential and uniqueness and be accompanied by appropriate policies to make the IKN a success. An example of the successful implementation of strengthening the capital city's buffer function is in Hanoi, Vietnam, which has five buffer cities with their respective functions. Some function as centers of science and technology, cultural centers, logistics transportation centers, tourism centers, and small industry centers (including MSME development centers) (Hoang & Doan, 2018). The division of these buffer functions is adjusted to the characteristics of each region and culture so that it can effectively support the main function of the city center or IKN, especially in terms of encouraging economic growth.

The Indonesian economy is highly dependent on the role of MSMEs. The Coordinating Ministry for Economic Affairs (2023) stated that there are 65.5 million MSMEs which constitute 99% of all business units in Indonesia. MSMEs also contribute IDR 9,580 trillion or 61% to Gross Domestic Product (GDP) and 97% to the labor supply in Indonesia. The data highlight the significant contribution of MSMEs to Indonesia's economic growth. Figure 1 presents Indonesia's GDP growth data for the period 2022–2024, while Figure 2
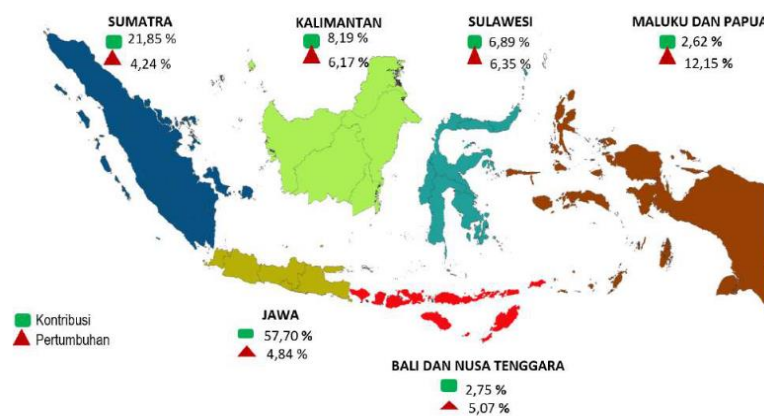
illustrates the growth and contribution of Gross Regional Domestic Product (GRDP) across regions.

Figure 1. Gross Domestic Product (GDP) Growth 2022-2024 (y-on-y) (percent).
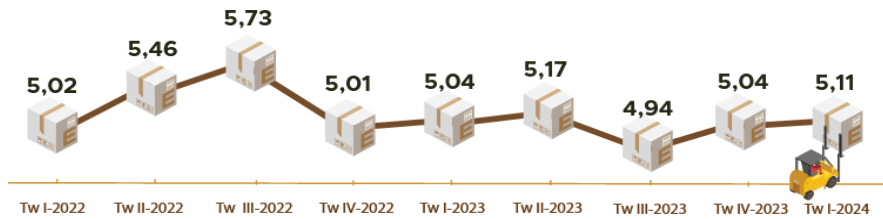
Source: Badan Pusat Statistik (2022)

Figure 2. Growth and Contribution of GRDP by Region

Source: Badan Pusat Statistik (2022)

Figure 1 shows quarterly GDP data from Q1 2022 – Q1 2024. From this figure, Indonesia's economic growth exhibited fluctuations, characterized by periods of both increases and decreases, over the years 2022 to 2024. In addition, Figure 2 informs that the contribution of the Indonesian economy is still dominated by Java Island, namely 57.70% with a growth of 4.84% (y-on-y). Meanwhile, Kalimantan Island is in third place, with a contribution of 8.19% and growth of 6.17% (y-on-y), below Sumatra Island which contributed 21.85% and growth of 4.24% (y-on-y). These data imply that Indonesia's economic growth still needs to be strengthened, especially the economy of the buffer regions of the National Capital (IKN) on the island of Kalimantan which is still very disparate with the contribution of the GRDP of the islands of Java and Sumatra.

Strengthening the economy of a region can be attempted through the development of MSMEs. On the island of Kalimantan in 2020, South Kalimantan is the province with the largest number of MSMEs in the Kalimantan Region with a total of 411,906 units (Dinas Koperasi dan UKM, 2022). Followed by East Kalimantan with 279,721 units (Dinas Perindustrian, Perdagangan, Koperasi, 2021), West Kalimantan with 181,453 (Ditjen Perbendaharaan Provinsi Kalimantan Barat, 2022), Central Kalimantan with 40,678 units (Dinas Koperasi dan UKM Provinsi Kalimantan Tengah, 2023), and North Kalimantan with 14,385 units (Dinas Komunikasi, Informatika, & Statistik, 2024). The growth of MSMEs in the provinces of the Kalimantan Region needs to be developed as a buffer zone to support the success of the development of the IKN.

According to Hapsari et al. (2020) empowerment of MSMEs has a significant influence on economic growth. Several studies have been conducted in various countries in the world regarding the role of MSMEs in economic growth, some of which are in India, Japan, Brazil, and China. Dixit & Pandey (2011) and Gunjati & Adake (2020) revealed that MSMEs have contributed to India's economic growth. Some important variables that are cointegrated with GDP in India are output MSMEs and MSMEs investment. India's GDP and output MSMEs influence output MSMEs and the number of MSMEs in the short term (Dixit & Pandey, 2011). Cravo et al. (2015) stated that the existence of MSMEs in Brazil has an indirect influence on economic growth, namely through spatial interaction or the level of economic growth in buffer areas. In addition, Elbanna et al. (2024) was identified that the positive contribution of MSMEs to the Japanese economy gained government acknowledgment, leading to the provision of support in areas such as financing, funding, infrastructure development, education, training, and information technology. Furthermore, these findings indicate that the growth of MSMEs plays a vital role in contributing to the economic development of a region.

Conversely, the COVID-19 pandemic and its effects on economic activities, affecting both large enterprises and micro, small, and medium enterprises (MSMEs), have led to an increased adoption of cashless payment methods. (Gorshkov, 2022). Empirical findings have confirmed a positive association between cashless payments and economic growth in multiple countries, such as Indonesia (Aminata & Sjarif, 2020), the 27 member nations of the Committee on Payments and Market Infrastructures (CPMI) (Pang et al., 2022), and G7 countries (Noman et al., 2023). In addition, the policy cashless affect economic growth in Nigeria (A. Gbanador, 2023) and in India (Sreenu, 2020). Tee & Ong (2016) revealed that in the long term, there is a significant influence from the implementation of cashless to economy of five European Union countries. Increased transactions cashless will encourage transparency, improve the foreign investment climate, and stimulate economic growth to bring the country to a Green Economy. Green Economy aims to reduce environmental and ecological risks, and strive for sustainable development that protects the environment from damage (Gautam & Kavidayal, 2017). These findings suggest that the adoption of cashless transactions can support economic growth, and businesses can achieve this by implementing green MSMEs, which promote sustainable development as environmentally responsible practices. (Ozturk et al., 2024). The statement is in line with what Todaro & Smith (2011) stated, the determinant of economic growth is not only capital or investment, but is also related to human resources and technological development.

The critical role of MSMEs in driving economic growth, along with the influence of cashless transactions on economic performance, motivates this study to concentrate on two primary objectives. The first objective is to empirically examine whether the number of MSMEs significantly affects economic growth in the Kalimantan region. Second, to obtain empirical evidence about the ability cashless in strengthening the influence of MSMEs on economic growth. The distinction of this study from previous research lies in its focus on cashless transactions as a moderating factor between MSMEs and economic growth, a

relationship that has not been explored in prior studies. The authors assume that the implementation of cashless in the MSME business can moderate the influence of MSMEs on driving economic growth in the Kalimantan region. The findings of this study are projected to offer valuable implications both theoretically, practically and in terms of policy to encourage economic growth through the development of green MSMEs by implementing cashless policy which is effective in each province of the Kalimantan Region as a form of readiness towards the buffer zone of the new National Capital City (IKN). In addition, this research will apply Moderated Regression Analysis with data on GRDP, MSMEs, and cashless transactions in Kalimantan in 2019-2022. Limited availability of data related to MSMEs and transactions cashless limiting observations in this study only to the discussion of the influence of the number of MSME indicators on the GRDP of South Kalimantan and the influence of cashless by Card-Based Payment Instruments (APMK) and e-money as a moderator between MSMEs and the economic growth of the Kalimantan Region.

Economic growth

Economic growth can represent the success of development and the economy in a region. The indicator that is seen for national economic growth data is Gross Domestic Product (GDP). Meanwhile, the metric used to evaluate economic growth in a specific region or area is Gross Regional Domestic Product (GRDP) (Angela, 2021; Feriyanto, 2020; Mulia & Putri, 2022; Pertiwi & Purnomo, 2022; Tumaleno et al., 2022; Wati, E. & Sadjiarto, 2019). According to data from the Badan Pusat Statistik (2022), the economic growth of Kalimantan Island is in third place, with a contribution of 8.19% and growth of 6.17% (y-on-y) or on below from Java and Sumatra. This gap is important to note for the IKN buffer zone considering that the IKN is moving from Java to Kalimantan. Aspects that are determinants of economic growth according to Todaro & Smith (2011) include: 1). Capital accumulation: in this context, it encompasses all new investments in land, physical assets, and human capital, 2). Population growth which is related to an increase in the labor force. 3). Technological developments.

Thus, if the integration between capital, human resources (HR), and good utilization of technology will stimulate economic growth both nationally and provincially. According to Rustan A et al. (2021) the economic growth of the IKN buffer zone must be increased to exceed 7%. Therefore, the IKN buffer zone should optimize its potential and advantages by effectively integrating capital, human resources, and technological advances accompanied by appropriate policies to make the IKN a success.
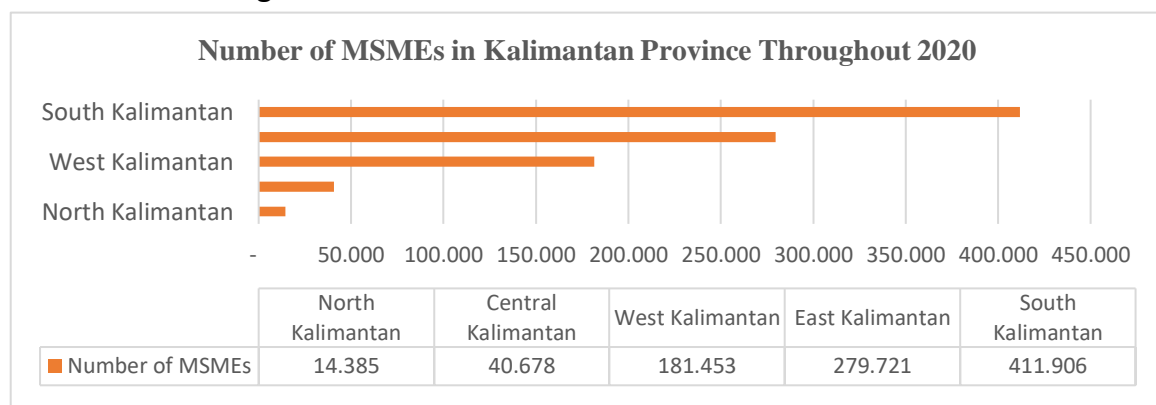
Micro, Small and Medium Enterprises (MSMEs)

Micro, Small, and Medium Enterprises (MSMEs) are critical component as a driver of the economy in Indonesia. This sector has exhibited exceptional creativity and flexibility in overcoming the challenges of recent economic instability and key drivers of national economic recovery (Amalia & Melati, 2021; Gilda et al., 2021; Lubis, 2021; Rosyidiana & Narsa, 2024; Supari & Anton, 2022). The Coordinating Ministry for Economic Affairs (2023) stated that MSMEs make up 99% of all business units in Indonesia, which is exactly 65.5

million units. The contribution of MSMEs to Indonesia's economic growth is 61% or IDR 9,580 trillion. In addition, MSMEs also contribute 97% to the labor supply in Indonesia.

In relation to the relocation of the IKN to Kalimantan, neighboring provinces play a strategic role as buffer zones for the National Capital (IKN) which is precisely located in East Kalimantan. As stated by Rustan A et al. (2021), the economic growth of the provinces supporting the IKN must be able to be increased at a figure above 7%. An example of a country that has succeeded in dividing the function of the capital city's buffer zone is Hanoi, Vietnam, which has five buffer cities with their respective functions. Some function as centers of science and technology, cultural centers, logistics transportation centers, tourism centers, and small industry centers (including MSME development centers) (Hoang & Doan, 2018). This can be an example for the Kalimantan Region as a buffer zone for the IKN. Figure 3 shows the number of MSMEs on the Kalimantan in 2020 that have the potential to be developed. Cravo et al. (2015) conducted a study in Brazil and proved that the existence of MSMEs has an indirect effect on economic growth, namely through spatial interaction or the level of economic growth in the buffer regions. So, by developing MSMEs in the Kalimantan Region, it will provide positive stimulation not only to economic growth for the buffer provinces themselves, but also to encourage economic growth in the IKN.

Figure 3. Number of MSMEs in Kalimantan Provinces in 2020

	North Kalimantan	Central Kalimantan	West Kalimantan	East Kalimantan	South Kalimantan
■ Number of MSMEs	14.385	40.678	181.453	279.721	411.906

Source: Department of Industry, Trade, Cooperatives, and SMEs
(processed by the author, 2024)

MSMEs contribute positively to the economic growth of a country (Dixit & Pandey, 2011; Elbanna *et al.*, 2024; Gunjati & Adake, 2020; Hapsari *et al*., 2020; Nasir *et al*., 2016) proved that output MSMEs and MSME investment have cointegration with GDP in India. India's GDP and output MSMEs influence output MSMEs and the number of MSMEs in the short term (Dixit & Pandey, 2011). Nasir *et al.* (2016) stated that MSMEs contribute to increasing China's national economic growth, reducing overhead cost industry, new market development and job creation. This is in line with Cravo *et al*. (2015) that higher human resources or workforce of MSMEs can mean increasing the entrepreneurial motivation of MSMEs opportunity based than necessity based, so that there is a positive impact on economic growth. Based on this, the first hypothesis in this study:

H1: MSMEs have a significant influence on economic growth Kalimantan Region

Cashless

Cashless or non-cash payment methods are situations where cash flow in an economy is of a non-cash nature non-existent and all transactions are conducted through electronic media channels. Transactions cashless will create transparency, improve the foreign investment climate, and encourage economic growth which will ultimately lead to the creation of a green economy, namely Green Economy. Green Economy aims to reduce environmental and ecological risks, and strive for sustainable development that protects the environment from degradation (Gautam & Kavidayal, 2017). Studies have shown a positive and significant influence between cashless and economic growth (A. Gbanador, 2023; Aminata & Sjarif, 2020; Noman et al., 2023; Pang et al., 2022; Sreenu, 2020; Tee & Ong, 2016). These findings mean that the implementation of cashless in economic transactions can increase economic growth in a region.

Considering the potential of MSMEs in the Kalimantan Region as a buffer zone for the National Capital City (IKN), the development of MSMEs is complemented by the use of technology through the implementation of cashless which will effectively increase economic growth in the Kalimantan Region which will ultimately stimulate economic growth in the IKN. In addition, the implementation of cashless in MSMEs will be a manifestation of the Green Economy in the form of developing Green MSMEs. This has been done in Japan as expressed by Elbanna et al. (2024) that the Japanese government recognizes the crucial role of MSMEs in the economy and, in response, provides a range of support, including access to financial resources, funding opportunities, infrastructure development, educational initiatives, training programs, and advancements in information technology. This is in line with Ozturk et al. (2024) that MSMEs are able to increase sustainable development through increasing economic growth. The more intense the implementation of cashless transactions in MSMEs, the stronger the impact of MSMEs on economic growth. Based on this, the following hypothesis is proposed in this study:

H2: Cashless able to strengthen the influence of MSMEs on economic growth of Kalimantan Region

Previous Research

Table 1. Previous Research

No	Writer	Results
		MSMEs and Economic Growth
1.	Dixit & Pandey (2011)	There is an influence of MSMEs on economic growth in India. Output MSMEs and MSME investment have cointegration with India's GDP. India's GDP and output MSMEs influence output MSMEs and the number of MSMEs in a row in the short term.
2.	Elbanna *et al.* (2024)	The Japanese government has acknowledged the positive impact of MSMEs on the economy, prompting it to offer substantial support through financing, funding, infrastructure development, educational programs, training initiatives, and advancements in information technology.

No	Writer	Results
MSMEs and Economic Growth		
3.	Nasir *et al.* (2016)	MSMEs play a crucial role in boosting China's national economic growth, lowering industrial overhead costs, fostering new market development, and generating employment opportunities.
4.	Gunjati & Adake (2020)	MSMEs contribute significantly to economic growth and continue to create jobs across the world. Innovation in MSMEs can boost this sector and make Indian MSMEs at par with developed countries.
5.	Hapsari *et al.* (2020)	The empowerment of MSMEs exerts a significant impact on economic growth.
6.	Ozturk *et al.* (2024)	MSMEs contribute positively to sustainable development by driving economic growth, creating employment opportunities, and reducing poverty.
7.	Cravo *et al.* (2015)	MSMEs have an indirect influence on economic growth, namely through spatial interaction or the level of economic growth in buffer areas.
Cashless and Economic Growth		
8.	Noman et al. (2023)	Cashless transactions have a significant positive correlation with the real GDP of G7 countries over the long term.
9.	Pang et al. (2022)	Cashless (e-money) has a positive correlation with economic growth.
10.	Tee & Ong (2016)	Impact of implementing paymentscashlessto economic growth significantly in the long term.
11.	Gautam & Kavidayal (2017)	Increased transactions cashless will encourage transparency, improve the foreign investment climate, and stimulate economic growth leading to the implementation ofGreen Economy.
12.	A. Gbanador (2023)	Policy cashless affect economic growth in Nigeria
13.	Sreenu (2020)	There are positive results in the use of cashless policies in India's economic growth.
14.	Aminata & Sjarif (2020)	Cashless transactions have a considerable impact on economic growth in Indonesia.

Research Framework
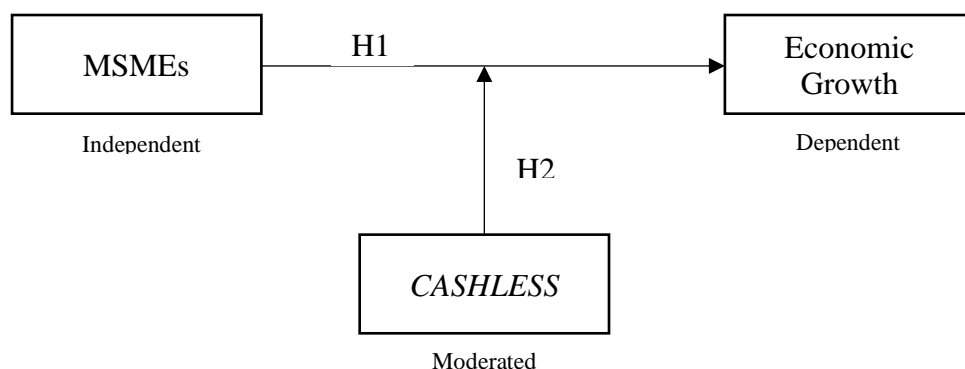
B. RESEARCH METHOD

This study analyzes the ability of Micro, Small, and Medium Enterprises (MSMEs) in promoting economic growth in the Kalimantan Region. Furthermore, it also focuses on analyzing the ability of non-cash payment methods or cashless in strengthening the ability of MSMEs to increase economic growth in the Kalimantan Region. This study uses panel data, namely PDRB data, the number of MSMEs, and infrastructure for Card Payment Instruments (APMK) and electronic money ore-money provinces in the Kalimantan Region asproxyeconomic growth variables, MSMEs, and cashless. The observation period in this study starts from 2019-2022. This study contains data from provinces in Kalimantan, namely East Kalimantan, South Kalimantan, Central Kalimantan, and West Kalimantan. This study excludes North Kalimantan from the observation due to limited data availability that can be obtained. Details of variable indicators and data sources can be seen in Table 2.

Table 2. Research Variables and Data

No.	Variabel	Indikator	Satuan	Sumber
1	Economic Growth (GRDP)	GRDP at Constant Prices	Billion Rupiah	Central Bureau of Statistics
2	Micro, Small, and Medium Enterprises (MSME)	Number of MSMEs	Unit	Department of Industry, Trading, Cooperatives, and SME
3	Non-cash transactions (CASHLESS)	Number of Payment Instrument infrastructure merchants Using Cards (APMK) and Electronic Money (e-money) Regional	Unit	Bank Indonesia

Analysis Techniques and Research Models

This study employs a quantitative approach and utilizes Moderated Regression Analysis to address the research questions. The research model is stated in the following equation:

$$GRDP_{it} = β_0 + β_1MSMEs_{it} + ε_{it} \tag{1}$$

$$GRDP_{it} = β_0 + β_1MSMEs_{it} + β_2CASHLESS_{it} + β1MSMEs_{it}*CASHLESS_{it} + ε_{it} \tag{2}$$

Where GRDP represents the dependent variable in the model. MSMEs is an independent variable, whereas CASHLESS is a moderating variable and MSMEs*CASHLESS represents the interaction between the independent variables and the moderating variables. $β_0$ is a constant coefficient εis the error regression value. i to show the number of units cross section or represent the province and t shows the period of observation. Model 1 aims to prove the first hypothesis of this study, namely to obtain empirical evidence of the influence of MSMEs on economic growth in the Kalimantan Region. While model 2 will be applied to obtain evidence of hypothesis 2 of this study, namely to prove whether cashless able to strengthen the influence of MSMEs on economic growth in the Kalimantan Region. The author conducted a classical assumption test to ensure that the research equation or model would produce accurate, bias-free, and consistent estimates. The classical assumption test in this study is as follows:

1. Normality test

Normality test is conducted to ensure the distribution of data in the research model. The normality test in this study appliesskewness test. If p-value > 0.05 means that H0 is accepted or shows that the data is normally distributed. If p-value < 0.05 means H1 is accepted or the data is not normally distributed.

2. Multicollinearity test

The multicollinearity test aims to determine whether there is a deviation from the classical assumption. The multicollinearity test in this study looks at the valueVariance Inflation Factor (VIF). When VIF > 10 means H0 is accepted or indicates that the data contains multicollinearity. If VIF < 10 means H1 is accepted or indicates that there is no multicollinearity in the research data.

3. Heteroscedasticity test

The heteroscedasticity test is essential to examine whether there is a variance inequality in the residuals between observations. In this study, the heteroscedasticity test follows the Breuch-Pagan value. If p-value < 0.05 then H0 is accepted or the varianceerroris heteroscedastic. While p-value > 0.05 then H1 is accepted or the variance error is homoscedastic or free from the assumption of heteroscedasticity.

If the research model is confirmed to be free from classical assumption problems. Then the main regression analysis can be carried out. This study uses panel data, namely cross section provincial data andtime seriesperiod 2019 to 2022, so that before the main analysis is carried out, several procedures for selecting the best model will be carried out, consisting of the Chow Test, Hausman Test, and Lagrange Multiplier Test with the following determination criteria:

1. Chow test

Chow test is done to consider the selection of the best model between Common Effect Model (CEM) or Fixed Effect Model (FEM). The basis for consideration in the chow test is when p-value > 0.05 then H0 is accepted which means the best choice is CEM if p-value < 0.05 then H1 is accepted or the best model is FEM. If FEM is selected, then proceed toHausman test to determine the best between FEM and Random Effect Model (REM).

2. Hausman test

Hausman testis a test that is done to choose between Fixed Effect Model (FEM) or Random Effect Model (REM). If p-value < 0.05 then H1 is accepted or the best is FEM. If p-value>0.05 then accept H0 is accepted which means the chosen option is REM rather than FEM. If REM is selected, then proceed toLagrange Multiplier Test.

3. Lagrange multiplier test

Lagrange multiplier testis a test that is used as a basis for considering whether the model used Random Effect Model (REM) or Common Effect Model (CEM). The criteria for this test are as follows: if the p-value < 0.05, H1 is accepted, indicating that the Random Effects Model (REM) is the preferred choice over the Common Effects Model (CEM). Conversely, if the p-value is > 0.05, H0 is accepted, suggesting that the Common Effects Model (CEM) is the appropriate option.

C. RESULTS AND DISCUSSION

Result

Descriptive Statistics

Table 3. Descriptive Statistics

Panel A. Descriptive Statistics for All Observation Years 2019-2022						
	N	Mean	Median	SD	Min	Max
GRDP	16	216.491	136.334	162.387	98.934	506.159
MSMEs	16	230.943	238.189	131.461	40.568	411.906
CASHLESS	16	8.741	8.537	4.062	2.935	17.152
Tabel 4. Panel B. Descriptive Statistics Per Year						
2019						
GRDP	4	214.35	135.263	182.201	100.349	486.523
MSMEs	4	192.394	187.3	161.423	40.568	354.408
CASHLESS	4	6.032	6.106	2.545	2.935	8.984
2020						
GRDP	4	209.233	132.803	176.172	98.934	472.393
MSMEs	4	228.44	230.587	156.793	40.678	411.906
CASHLESS	4	9.583	9.613	3.595	5.422	13.684
2021						
GRDP	4	215.889	138.318	179.844	102.481	484.44
MSMEs	4	244.433	269.803	135.516	75.278	362.847
CASHLESS	4	8.995	9.287	4.324	3.667	13.738
2022						
GRDP	4	226.491	145.355	187.243	109.095	506.159
MSMEs	4	258.504	273.965	118.989	121.458	364.628
CASHLESS	4	10.355	10.209	5.488	3.851	17.152

Table 3 shows the descriptive statistics of the study which are divided into two parts, namely descriptive statistics for all years of the study in Panel A, while Panel B shows the results of descriptive statistics per year 2019-2022. In Panel A with a total of 16 observations from 4 provinces and 4 years. In Panel A and Panel B, it can be observed that the standard deviation of all variables is smaller than the mean value, indicating that the mean adequately represents the entire dataset and suggests that the data exhibits minimal variability. Based on the results of descriptive statistics in Panel B, it can be seen that the average value of GRDP decreased in 2020. This is due to the impact of the Covid-19 pandemic which affect the economic growth of the Kalimantan Region. This is in line with the lowest value of GRDP throughout the observation year in 2020 and the highest in 2022.

The average value of MSMEs tends to increase every year. However, the highest number of MSMEs during the observation period was in 2020, which was owned by South Kalimantan Province. In 2021 and 2022, the maximum value of MSMEs has not been able to exceed or reach that value. This indicates that MSMEs in the Kalimantan Region had soared at the beginning of the Covid-19 pandemic, namely in 2020, but experienced pressure due to weakening regional and national economic growth due to the Covid-19

pandemic which was severe in that year or related to the decline in GRDP in 2020 previously which had an impact on many MSMEs who finally had to close their businesses, especially in the province of South Kalimantan which in 2020 had the maximum value of MSMEs.

Average value CASHLESS experienced a decline in 2021. In 2020, the number of non-cash infrastructure including Card Payment Instruments (APMK) and electronic money (e-money) had increased due to social restrictions due to the spread of the Covid-19 pandemic, so that people's preferences in making payments began to shift to non-cash payment systems or cashless paymentthen finally decreased in number in 2021 along with the weakening of GRDP throughout the previous year.

Classical Assumption Test

Table 5. Results of the Classical Assumption Test

Classical Assumption Test Results	Normality Test Results	Multicollinearity Test Results	Heteroskedasticity Test Results
p-value (skewness test)	0,5436	-	-
VIF	-	1,51	-
p-value (Breuch-Pagan test)	-	-	0,1752
Criteria	>0,05	<10	>0,05
Conclusion	Data distributed normal	Data is free from multicollinearity	Data is free from heteroscedasticity

*H1 accepted on Lagrange Multiplier Test = Random Effect Model is the best model

The results of the classical assumption test can be seen in Table 5. The normality test uses skewness test show p-value 0.5436 or >0.05 which means H0 is accepted or the data is normally distributed. The multicollinearity test uses the value of Variance Inflation Factor (VIF), the VIF value in this research model shows a figure of 1.51 or <10, which means that the data does not have multicollinearity problems. The heteroscedasticity test uses Breuch-Pagan test which shows p-value 0.1752 or > 0.05 which means the data is free from heteroscedasticity problems.

Estimation Model Selection

Table 6. Estimation Model Selection Test Results

Model Selection Results	Chow Test	Hausman Test	Lagrange Multiplier Test
p-value	0,0000	0,9531	0,0001
Decision	H1 accepted	H0 accepted	H1 accepted

* H1 accepted onLagrange Multiplier Test = Random Effect Model is the best model

The selection of the model in this study was carried out firstchow test. Based on the chow test result, p-value shows a figure of 0.0000 which means <0.05 then H1 is accepted or the best model between Common Effect Model (CEM) or Fixed Effect Model (FEM) is FEM. Because the choice is based on the results chow test is FEM, then proceed to hausman test to test the best model between FEM and Random Effect Model (REM). Based on hausman test which shows p-value 0.9531 or > 0.05 means H0 is accepted or the best

model between FEM and REM is REM. Therefore, the next procedure is Lagrange Multiplier Test to test the best model between REM or CEM. P-value shows 0.0001 or < 0.05 which means H1 is accepted or the best model selected is REM.

Main Results

Tabel 7. Regression Results

	(1) Model 1	(2) Model 2
Intercept	150,422***	145,677***
	(3,788)	(3,398)
MSMEs	0,101*	-0,463*
	(1,942)	(-1,889)
CASHLESS		-7,594
		(-0,951)
MSMEs_CASHLESS		0,093***
		(4,143)
R^2	0,3201	0,6459
N	16	16
p-value	0,052	0,000

t statistics in parentheses
* p<0.10, ** p<0.05, *** p<0.01

Table 7 shows the results of the research regression based on Random Effect Model (REM). Column (1) shows the results of the estimation of the equation of model 1 of the study to obtain empirical evidence of the ability of MSMEs to drive economic growth in the Kalimantan Region. Based on the regression results, it shows a positive and significant influence between MSMEs and PDRB. The coefficient on MSMEs is 0.101 (t = 1.942) and is significant at the level of 0.1 or 10%. These results prove that hypothesis 1 is accepted and is consistent with the findings that MSMEs are able to increase economic growth in a region (Cravo et al., 2015; Dixit & Pandey, 2011; Elbanna et al., 2024; Gunjati & Adake, 2020; Hapsari et al., 2020; Nasir et al., 2016; Ozturk et al., 2024).

Table 7 column (2) shows the results of estimating the model equations for 2 studies to obtain empirical evidence regarding the ability cashless in strengthening the influence of MSMEs in driving economic growth in the Kalimantan Region as hypothesis 2. The results show the coefficient on the interaction of variables MSMEs_CASHLESS is 0.093 (t = 4.143) and significant at the 0.01 or 1% level. This result proves that hypothesis 2 is accepted and is consistent with the findings related to the significant positive influence of the implementation of cashless on MSMEs which has an impact on economic growth (A. Gbanador, 2023; Aminata & Sjarif, 2020; Gautam & Kavidayal, 2017; Noman et al., 2023; Pang et al., 2022; Sreenu, 2020; Tee & Ong, 2016). These results indicate that the stronger the implementation of cashless in the MSME business will strengthen the positive impact of MSMEs on the economic growth of the Kalimantan Region.

If observed more deeply in Table 7, there is a difference in the coefficient between the UMKM variables in model 1 and model 2. Where in model 1, the UMKM coefficient is

positive or 0.101 (t = 1.942), while in model 2 the UMKM coefficient is negative or -0.463 (t = -1.889). However, because the regression coefficient or β_0 in model 2 is positive or 145.677 (t = 3.398) which means in the opposite direction to the MSME coefficient in model 2, so it can also be interpreted that cashless able to reduce the negative impact of MSMEs on economic growth.

Discussion

Analysis of the Ability of Micro, Small and Medium Enterprises (MSMEs) towards the Regional Economic Growth of Kalimantan

Based on Table 7, the hypothesis 1 is accepted. This finding indicates that MSMEs contribute quite well to economic growth in the Kalimantan Region. Based on the results of model 1, it indicates that the increasing number of MSMEs will increase GRDP or economic growth in the Kalimantan Region. Even though it experienced pressure due to the Covid-19 pandemic, MSMEs in the Kalimantan Region still have an influence on GRDP. This proves that the economic turnover in MSMEs is quite a potential for provinces in Kalimantan to be able to increase GRDP. In relation to the relocation of the National Capital (IKN) to East Kalimantan, the results of this study can be a reference for the regional governments of the IKN buffer regions in the Kalimantan Region regarding empirical evidence of the role of MSMEs that can be relied on to drive economic growth. In line with what was stated by Cravo *et al.* (2015) MSMEs can influence the level of economic growth through spatial interaction or the level of economic growth of buffer areas. MSME development can be in terms of increasing the number of MSMEs, investment, innovation, human resources, and technological development in MSMEs operations.

The source of GRDP growth of provinces in the Kalimantan Region is generally still dominated by the mining and excavation sector. Therefore, with the development of MSMEs, it is hoped that the regions in the Kalimantan Region will no longer depend on natural resources which if continuously exploited will run out and have an impact on the environment. In terms of their numbers in the Kalimantan Region, MSMEs still need to be increased considering that from a national position, only South Kalimantan is included in the top 20 provinces with the largest number of MSMEs in Indonesia (Kadin Indonesia, 2023). The relocation of the IKN to East Kalimantan will be an opportunity for provinces in the Kalimantan Region to be able to support the needs of the IKN as a buffer area. The development of technology in MSMEs will be the right solution in answering the challenges and opportunities for provinces in the Kalimantan Region. In addition to being able to create independence from dependence on natural resource results, it will also be a representation of the green economy realization. For further analysis we will discuss about cashless as one of the potential forms of green MSMEs development which is predicted to strengthen the role of MSMEs in driving economic growth, especially for provinces in the Kalimantan Region.

Analysis of Cashless Ability in Strengthening the Influence of Micro, Small, and Medium Enterprises (MSMEs) on the Regional Economic Growth of Kalimantan

According to the regression results in Table 7, hypothesis 2 is accepted. The findings demonstrate a significant positive effect of cashless implementation in MSMEs on economic growth. This study affirms that a stronger adoption of cashless transactions in MSMEs correlates with higher economic growth in the Kalimantan Region. Changes in the MSME coefficient in model 1 and model 2 are due to control from other variables, namely from the moderating variable or cashless which is included in model 2. This indicates that if MSMEs do not carry out development in this case, cashless as the use of technology in payment systems, will have a negative impact on economic growth. This means that, in fact, the payment methods that people in the Kalimantan Region generally use have started to shift or shifting on the cashless method. Therefore, it can be concluded that, the implementation of cashless on MSMEs will enhance their impact on driving economic growth. The stronger the implementation of non-cash transactions or cashless in MSMEs, will increase the ability of MSMEs to contribute to PDRB or economic growth in the Kalimantan Region. The results of this study can be the basis for optimizing MSME development by strengthening the implementation cashless on MSMEs in the Kalimantan Region. Through increasing transactions cashless will support transparency, improve the foreign investment climate, and stimulate economic growth until it is realized green economy (Gautam & Kavidayal, 2017).

Implementation cashless in UMKM so far of course it is not free from obstacles. As said by Mubarak et al. (2022) that mindset or the behavior of people who consider the application or implementation complicatedfinancial technology in the payment system. In line with this statement, Tay *et al.* (2022) stated that in developing countries, especially Asian countries, there are gaps in various aspects, including gaps in urban and rural areas in terms of access to and use of digital financial services. This indicates that for the implementation cashless which effectively focuses on the human resource aspect in terms of increasing financial inclusion in society.

Rahman et al. (2022) revealed that business actors need to ensure that their business in the sector supports the implementation of the payment system cashless. In relation to the use of digital technology, it makes cashless have an increased riskcybercrime, electronic fraud, and digital hacking. In line with the findings of Perdana & Sinarwati (2022) who studied related cashless namely transactions based on Quick Response Code Indonesian Standard (QRIS) on MSMEs in Bali. The results stated that MSME actors were reluctant to implement the payment system cashless because businesses in their sector do not yet support non-cash transactions and still require fast cash for trading capital turnover. In addition, MSME actors also experience various system disruptions, withdrawal distances and costs incurred to access payment applications. These findings are in line with Sari *et al.* (2022) in which for the implementation of the payment system to run smoothly, it is necessary to pay attention to the principles of risk control, efficiency, equal access, and consumer protection. The contribution of this study based on these findings can highlight the importance of strengthening cashless infrastructure in order to achieve readiness in implementing cashless in MSMEs in the Kalimantan Region.

D. CONCLUSION

This study reveals the empirical evidence of the ability of MSMEs in promoting economic growth in the Kalimantan Region. In addition, this study also demonstrates how cashless transactions strengthen the impact of MSMEs on accelerating economic growth in the Kalimantan Region. The result shows that MSMEs have a positive and significant influence on economic growth in the Kalimantan Region. That means MSMEs are able to increase economic growth in Kalimantan Region. In the next analysis, we find that cashless able to strengthen the positive influence of MSMEs on economic growth. This means the stronger the transaction cashless in MSMEs, it will further encourage economic growth in the Kalimantan Region. Cassless infrastructure, policies, and human resource preparation are needed in succession cashless society agenda in strengthening MSMEs to encourage economic growth in the Kalimantan Region as a buffer zone for the new National Capital City (IKN)..

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