

The Impact of QRIS Policy on the Development of Micro Businesses in Medan City, Indonesia

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ABSTRACT

This study analyzes the impact of the QRIS policy in the early stages of implementation on financial performance and expansion of the market share of micro-businesses in Medan City. Financial performance is observed through changes in turnover and net profit; meanwhile, market share is determined based on changes in the number of new customers before and after the implementation of the QRIS policy. This study employs the Difference in Differences (DiD) method. The type of data used is primary data. Purposive and random sampling was utilized with 50 samples of micro businesses for the treatment group and 50 for the control group. The time difference was found between before and after the implementation of the QRIS policy. The results of this study show that the QRIS policy has a positive and significant effect on the increase in new consumers. On the other hand, the QRIS policy has no significant impact on the net profit and turnover of micro businesses. The COVID-19 pandemic has significantly and negatively impacted micro-enterprises, sharply declining revenue and net profit. However, based on the magnitude of the decline, the control group experienced a relatively greater turnover and net profit decline than the treatment group. The implication of this study is the need for efforts to increase micro-entrepreneurs understanding of the importance of faster adaptation to advances in digital technology, one of which is adjustments to a more flexible payment system so that consumers can get a wider choice of payment schemes. In addition, payment system authorities should address various obstacles in using the system and provide more massive socialization of the products offered.

ABSTRAK

Penelitian ini menganalisis dampak kebijakan QRIS pada tahap awal implementasi terhadap kinerja keuangan dan perluasan pangsa pasar usaha mikro di Kota Medan. Kinerja keuangan diamati melalui perubahan omzet dan laba bersih, sedangkan pangsa pasar ditentukan berdasarkan perubahan jumlah pelanggan baru sebelum dan sesudah penerapan kebijakan QRIS. Penelitian ini menggunakan metode Difference in Difference (DiD). Jenis data yang digunakan adalah data primer. Teknik pengambilan sampel menggunakan purposive sampling dan random sampling dengan jumlah sampel sebanyak 50 sampel usaha mikro untuk treatment group dan 50 sampel usaha mikro untuk control group. Perbedaan waktu tersebut terlihat sebelum dan sesudah penerapan kebijakan QRIS. Hasil penelitian ini menunjukkan bahwa kebijakan QRIS berpengaruh positif dan signifikan terhadap peningkatan konsumen baru. Sebaliknya kebijakan QRIS tidak berpengaruh signifikan terhadap laba bersih dan omzet usaha mikro. Pandemi COVID-19 memberikan dampak negatif dan signifikan terhadap usaha mikro sehingga mengakibatkan penurunan omzet dan laba bersih yang tajam. Namun jika dilihat dari besarnya penurunan, usaha mikro pada control group mengalami penurunan omzet dan laba bersih yang relatif lebih besar dibandingkan usaha mikro pada treatment group. Implikasi dari penelitian ini adalah perlunya upaya untuk meningkatkan pemahaman pengusaha mikro akan pentingnya adaptasi yang lebih cepat terhadap kemajuan teknologi digital, salah satunya adalah penyesuaian sistem pembayaran yang lebih fleksibel, sehingga konsumen bisa mendapatkan pilihan skema pembayaran yang lebih banyak. Selain itu, otoritas sistem pembayaran juga perlu mengatasi berbagai kendala dalam penggunaannya dan memberikan sosialisasi yang lebih masif terhadap produk yang ditawarkan.

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1. INTRODUCTION

Bank of Indonesia has launched a digital payment system called Quick Response Code Indonesian Standard (QRIS) to accelerate various programs related to financial inclusion and non-cash systems and collaboration in the payment ecosystem. The payment system using QRIS was launched on August 17, 2019, and became effective on January 1, 2020. QR code-based Payment System Service Providers (PJSP) were required to adjust the QR code used by QRIS until December 31, 2019. In other words, QRIS can be used for all payment applications from different PJSP. Payments using QRIS can also be made without meeting face-to-face.

The development of this payment system makes things easier for merchants and consumers. However, there are fees charged to merchants by providers for every transaction using QRIS, even though these fees were waived during the 2020 pandemic. As of July 2021, 8.17 million merchants have been connected to QRIS. An additional 3.83 million new merchants are needed to achieve the merchant expansion target of 12 million in 2021. The development in the use of QRIS, especially among MSMEs, has been visible since 2020. The COVID-19 pandemic has brought positive winds to accelerate the addition of users. From Figure 1, it can be seen that most merchants are involved in micro businesses. The number of micro business actors is the largest compared to other business scales. As of July 2021, 4.97 million micro-entrepreneurs were connected to QRIS. There was an increase compared to March 2020, which was still 2.37 million entrepreneurs. Small businesses experienced the largest increase of 596 percent from March 22, 2020, to July 23, 2021. More details can be seen in Figure 1.

Medan City is the region with the highest level of economic activity on the island of Sumatra, one of which is influenced by its MSME activity. Medan City’s Gross Domestic Product (GDP) in 2020 was IDR 242.19 trillion, higher than other province capital cities on the same island: Pekanbaru City’s IDR 115.51 trillion, Palembang City’s IDR 155.82 trillion, and Bandar Lampung’s IDR 59.07 trillion. Approximately 4,900 MSMEs in Medan City were affected by the COVID-19 pandemic in 2020, causing the economy to grow negatively (Dinas Koperasi UKM, 2022). Narayan (2020) examined the role of fintech in driving economic growth in Indonesia from 1998 to 2018. The results show that fintech startups are positively correlated with economic growth. No effect was found in the first year of observation, but a significant positive effect was seen in the second and subsequent years. The results of previous research conducted by Syarifuddin et al. (2009) showed a decrease in cash holdings by economic actors and more money entering the banking system. The increased non-cash payments also drive GDP growth and a slight price decrease. Furthermore, Setiawan & Mahyuni (2020) researched the perceptions of MSMEs in Denpasar City towards QRIS and the factors influencing their intention to use QRIS. The research was analyzed using a coding and theming process. The results show that MSMEs are indicated to positively perceive QRIS as an alternative payment method that is easy and can reduce physical contact.

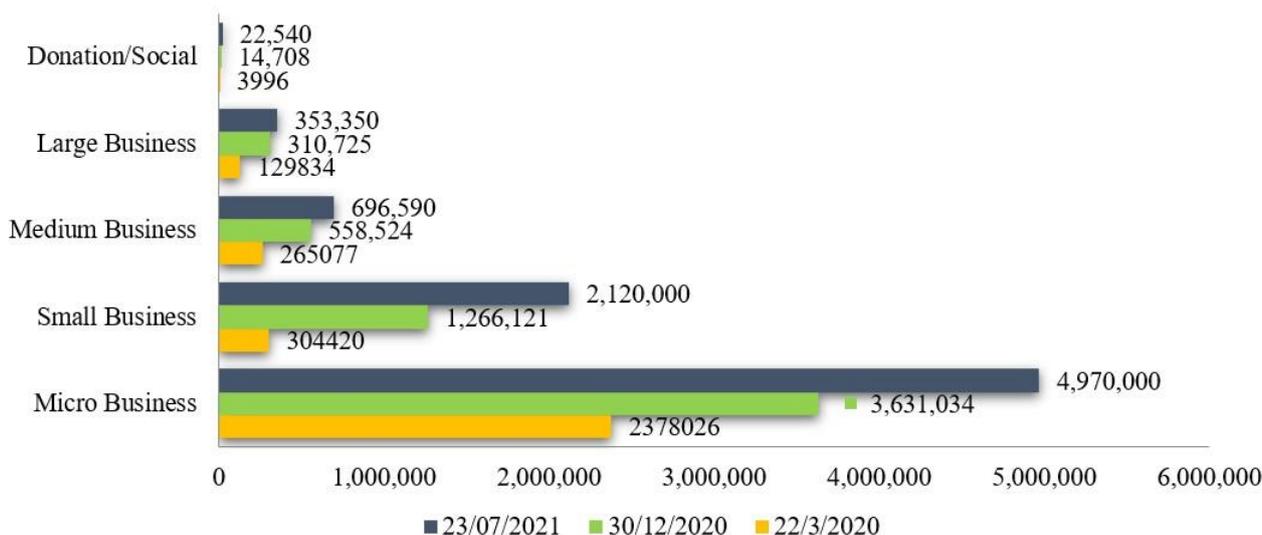


Figure 1. Development of QRIS merchants during the Covid-19 pandemic 2020-2021
Source: Bank of Indonesia

The adoption of QRIS affects the financial performance of micro businesses (Wardhani et al., 2023; Sihalohe et al., 2020). Susilo (2023) stated that companies must use QRIS as a part of their business model. The results of research conducted by Li & Pang (2023) showed that digital financial inclusion facilitates the technological innovation capabilities of MSMEs. The results of research conducted by Carera et al. (2022) concluded that there is a difference in MSME sales turnover after using QRIS. Meanwhile, the results of research conducted by Kajian Hutagalung et al. (2021) indicated that the use of QRIS has a positive effect on expanding sales networks and increasing MSME product transactions.

Unlike previous research, this research focuses on the impact of QRIS policy on changes in net profit, turnover, and market share of micro-businesses in Medan City. In addition, the magnitude of the impact of the COVID-19 pandemic on micro-businesses in Medan City can also be seen because the implementation of the QRIS policy coincided with the onset of the pandemic. The novelty of this research lies in using the Difference in Differences (DiD) method to answer whether or not the QRIS policy affects the development of micro-businesses. The use of new consumer addition and net profit variables has also not been found in similar study topics. In addition, limiting the observation time until 2021 is also expected to capture the initial effect of implementing the QRIS policy on micro businesses amid the COVID-19 pandemic, which can complement the literature on this topic.

For profit-oriented business actors, the decision to use QRIS depends on the effect of the service on costs incurred, market share expansion, transaction volume, security and ease of use, and consumer behavior, all of which lead to net profit. This research aims to analyze the impact of the QRIS policy on the financial performance and market share of micro-businesses in Medan City in the initial implementation phase. Financial performance is observed through changes in turnover and net profit. At the same time, market share is determined based on changes in the number of new customers before and after implementing the QRIS policy.

2. THEORETICAL FRAMEWORK AND HYPOTHESES

2.1. Quick Response Code Indonesian Standard (QRIS)

Quick Response (QR) code for payments is a two-dimensional code with three square pattern markers in the lower left, upper left, and upper right corners. It has a black module in the form of square dots or pixels. It can store alphanumeric data, characters, and symbols, which are used to facilitate contactless payment transactions via scanning. Meanwhile, the Quick Response Code Indonesian Standard (QRIS) is a payment QR code standard set by the Bank of Indonesia to facilitate payment transactions in Indonesia. QRIS is not a new application but a national QR Code standard mandatory for all Payment System Service Providers (PJSP) that use QR (Bank Indonesia, 2019).

QRIS can be used by anyone with a cellphone with a camera, data connectivity, and an electronic payment account. QRIS provisions are regulated in PADG No.21/18/PADG/2019, dated August 16, 2019, concerning implementing the National Quick Response Code Standard for Payments. The launch of QRIS is one implementation of the vision of the Indonesia Payment System Blueprint 2025 (SPI 2025). The blueprint contains five payment system visions toward 2025: supporting national digital economic-financial integration, supporting banking digitalization, ensuring interlinks between fintech and banking, ensuring a balance between innovation and consumer protection, integrity and stability as well as healthy business competition, and guaranteeing national interests in the digital financial economy between countries (Bank Indonesia, 2019).

2.2. Micro, Small and Medium Enterprises (MSMEs)

After Law Number 11 of 2020 concerning Job Creation was enacted, the criteria for MSMEs previously regulated in Law Number 20 of 2008 were amended through Government Regulation Number 7 of 2021 as a derivative of the Job Creation Law. Government Regulation Number 7 of 2021 concerning Facilitation, Protection, and Empowerment of Cooperatives and Micro, Small and Medium Enterprises, article 35, paragraph (1) states that MSMEs are grouped based on business capital or annual sales results criteria. The business criteria, as referred to in paragraph (1), are used to establish or register business activities. Paragraph (3) explains the business capital criteria in question consisting of micro-businesses that have business capital up to a maximum of IDR 1,000,000,000 (one billion rupiahs), excluding land and buildings where the business is located; small businesses that have business capital of more than IDR 1,000,000,000 (one billion rupiahs) up to a maximum of IDR 5,000,000,000 (five billion rupiahs) excluding land and buildings where the business

is located; and medium-sized businesses that have business capital of more than IDR 5,000,000,000 (five billion rupiahs) up to a maximum of IDR 10,000,000,000 (ten billion rupiahs) excluding land and buildings where the business is located.

Meanwhile, for MSMEs established before the enactment of Government Regulation Number 7 of 2021, the MSMEs are grouped based on the criteria of annual sales results. The criteria for annual sales results, as referred to in paragraph (1), consist of micro-businesses that have annual sales results up to a maximum of IDR 2,000,000,000 (two billion rupiahs); small businesses that have annual sales of more than IDR 2,000,000,000 (two billion rupiahs) up to a maximum of IDR 15,000,000,000 (fifteen billion rupiahs); and medium-sized businesses that have annual sales of more than IDR 15,000,000,000 (fifteen billion rupiah) up to a maximum of IDR 50,000,000,000 (fifty billion rupiah). The nominal value of business capital criteria and annual sales results can be changed according to economic developments. For certain purposes, apart from the criteria for business capital and annual sales results, ministries/institutions can use the criteria for turnover, net worth, investment value, number of workers, incentives, and disincentives, local content, and/or application of environmentally friendly technology following the criteria for each business sector (Peraturan Pemerintah Republik Indonesia Nomor 7, 2021).

2.3. Net Profit

Every business actor always wants to profit from what he does. The description of the profit to be achieved is known as net profit. The company's various efforts, such as innovating, improving management, increasing resources, implementing rewards and punishment for workers, and monitoring and evaluating performance, are expected to increase its net profit achievement. In his book, Hery (2016:3) stated that the profit and loss report is a systematic report on a company's income and expenses for a certain period. This profit and loss report contains information regarding management performance results or the company's operational activities. Net profit or loss results from income and profits minus loss expenses. Meanwhile, according to Waren & Reeve (2017), the difference is net income or profit if income exceeds expenses. Sujarweni (2017:197) argued that net profit is the final figure in the profit and loss calculation using the formula: operating profit plus other income minus other expenses. According to Hery (2016:198), the level of sales profit is measured using a net profit margin analysis tool. This analytical tool is a ratio used to measure the percentage of net profit on net sales. Net profit is calculated as subtracting profit before income tax from income tax expense. Profit before the income tax is operational profit plus other income and profits, then deducted by other expenses and losses. The higher the net profit margin, the higher the net profit generated from sales. This is due to the high profit before income tax and *vice versa*. In general, a low ratio indicates management inefficiency.

2.4. Turnover

The size of total sales or turnover is one of the keys to increasing net profit. Turnover is closely related to the volume of transactions and selling prices. According to Muslichah & Bahri (2021), understanding the relationship between income, costs, volume, and profit is very important for successful management, where production costs influence selling prices, selling prices influence sales volumes, sales volumes influence production volumes, and production volumes influence the size of production costs. Maksudi et al. (2021) define sales turnover as the total income from selling goods or services in a certain period.

2.5. Addition of New Consumers

Expanding market share is an effort to increase company turnover. Continuous addition of new customers can increase the turnover growth received, increasing the resulting net profit. Previous studies show that the use of QRIS positively affects the addition of new consumers, as indicated by the expansion of the sales network (Hutagalung et al., 2021). Adding as many new customers as possible while retaining old ones is necessary (Wahyudi et al., 2022). Businesses must spend sufficient time and resources to acquire new customers to expand their profits and sales (Shao et al., 2008).

2.6. Difference in Differences (DiD)

The Difference in Differences (DiD) method is often used to analyze the impact of a policy or treatment, especially in the social and economic sciences. The DiD method has become widely known since research by Card & Krueger (1994) used it to analyze the impact of an increase in the minimum wage in New Jersey,

USA. The DiD method calculates the difference in changes in the value of the dependent variable between the treatment group and the control group within a certain period. In this way, the impact of a treatment on a dependent variable being evaluated can be known. A mathematical illustration of the DiD method is shown in equation (1) below:

$$DiD = (Y_{T2} - Y_{T1}) - (Y_{C2} - Y_{C1}) \dots \dots \dots (1)$$

Where $(Y_{T2} - Y_{T1})$ is the change in the value of the dependent variable of the treatment group during the observation period, and $(Y_{C2} - Y_{C1})$ is the change in the value of the dependent variable of the control group during the observation period. Sari (2019), in her journal, states that the DiD method is an excellent method for impact evaluation because it can eliminate the influence of time-invariant unobserved variables by using the before-after treatment period. The DiD method requires two groups, a treatment group and a control group, and at least two observation periods before and after treatment.

2.7. Hypothesis

The QRIS policy will directly impact business partners or shops that adopt financial technology (fintech). The advantages of using QRIS are expected to increase the volume of sales transactions further and positively impact economic growth. However, several challenges need to be addressed to accelerate financial inclusion. According to Philippon (2016), current regulatory approaches are subject to significant political economy and coordination costs. It is, therefore, impossible to provide many structural changes. Conversely, fintech can bring about big changes but tends to create significant regulatory challenges. The following year, Narayan & Sahminan (2018) investigated the macroeconomic implications of fintech companies in Indonesia from 1998–2017. The research focuses on the impact of fintech on the Indonesian exchange rate (rupiah *vis-a-vis* the US dollar) and inflation rates. The results show that fintech can reduce inflation and lead to an appreciation of the rupiah against the US dollar, although its effect on the exchange rate is delayed.

A study regarding the effect of QRIS on the financial performance of MSMEs in Indonesia was carried out in 2022, and the results showed that the adoption of QRIS influenced the financial performance of micro businesses related to sales turnover (Wardhani et al., 2023). In the same year, another study observed whether or not there was a difference in MSME sales turnover before and after using QRIS in Purwokerto. The results show differences in sales turnover due to using QRIS (Carera et al., 2022). The payment system using QRIS indicates positive benefits for MSMEs in Medan City (Sihaloho et al., 2020). The results of research conducted by Hutagalung et al. (2021) showed that using QRIS expands the sales network and increases MSME product transactions in Pematangsiantar City. However, the COVID-19 pandemic affected the financial performance of MSMEs, which is marked by a decline in net profit, production, and turnover (Ruata & Weku, 2023; Wahyuni & Giyartiningrum, 2022; Hernikawati, 2022; Palallo, 2021).

The company has made various efforts to increase turnover, net profit, and market share through innovation, improving management and service, optimizing resources, implementing rewards and punishment for workers, and monitoring and evaluating performance. Using QRIS as an alternative payment method is an effort to improve services, especially transaction services. QR code-based payment methods offer customers convenience, comfort, security, and transaction speed (Lee & Jae, 2018; Jagtiani & John, 2018). MSMEs’ intentions to use QRIS are also influenced by buyers’ intentions, internet quality, costs, and transaction limits (Setiawan & Mahyuni, 2020; Saputri, 2020; Mayanti, 2020).

However, its implementation in the early phase of the pandemic, on the one hand, could accelerate the intensity and expansion of its use. On the other hand, its implementation occurred when the economy was sluggish, giving rise to pessimism about its support for the performance of micro businesses. Therefore, the hypothesis developed in this research is that the QRIS policy does not significantly impact the increasing turnover and net profit of micro-businesses. However, this policy significantly impacts increasing market share, as indicated by an increase in new market share. Consumers were observed in the phases before and when this policy was implemented.

3. RESEARCH METHOD

This study used the Difference in Differences (DiD) method with observation periods in 2019 and 2020/2021. The year 2019 is a baseline year where neither group has used QRIS as a digital payment method. Micro businesses spread across Medan City that have started business at least in 2019 and have used QRIS as a

digital payment method are included in the treatment group because they have used QRIS, and it is assumed that their use will start in 2020. Meanwhile, micro-businesses in Medan City that have started a business at least in 2019 and have not used QRIS as a digital payment method are included in the control group because up to 2020, they did not or had not used QRIS. The sampling technique used purposive and random sampling with a sample size of 50 micro businesses for the treatment group and 50 samples for the control group. This technique was used due to movement restrictions during the COVID-19 pandemic. Since the exact number of MSMEs that use QRIS is still unknown, questionnaires were distributed randomly and online, followed by basic questions about the use of QRIS in MSMEs. All entrepreneurs who provided information related to the study through the questionnaire were then sorted again. The next step was to determine the study sample based on Government Regulation Number 7 of 2021, where micro businesses have annual sales of up to a maximum of IDR 2,000,000,000 (two billion rupiah). After that, the existing data was filtered again based on the progress of each business with the same characteristics. It means that before the QRIS policy is implemented, businesses with relatively the same scale/turnover and net profit margin will be used as samples in this study.

The type of data used in this study is primary data. Data collection in this research was carried out using a questionnaire with closed and open questions. Filling out the questionnaire was done via Google Forms. Closed questions are used to answer research objectives. Meanwhile, open questions are aimed at two groups with different and general question forms. The open questions for the treatment group are regarding the average monthly turnover obtained from using QRIS as an illustration of the contribution of QRIS to business turnover. Meanwhile, open questions for the control group are regarding the payment methods used and why the QRIS payment method has not been utilized in their business.

According to Sari (2019), DiD is a good method for impact evaluation because it can eliminate the influence of time-invariant unobserved variables by using a before-after treatment period. A mathematical illustration of the DiD method is depicted in equation (2) below:

$$DiD=(Y_{T2}-Y_{T1})-(Y_{C2}-Y_{C1})..... (2)$$

Where $(Y_{T2}-Y_{T1})$ is a change in the value of the dependent variable of the treatment group (micro businesses that use QRIS) during the observation period, while $(Y_{C2}-Y_{C1})$ is a change in the value of the dependent variable of the control group (micro businesses that do not use QRIS) during the observation period. The DiD method requires two groups (treatment and control groups) and a minimum of two observation periods (before-after treatment). The assumption used is the Parallel Trend Assumption. It means that treatment and control groups have the same linear trend if there is no difference in treatment (if there is no use of QRIS). With this assumption, the DiD method can accurately analyze how big the impact of using QRIS is on the development of micro-businesses in Medan City.

This study assumes that the Parallel Trend Assumption is met. Some of the reasons are that both treatment and control groups tend to be in the same location, Medan City. In other words, there is no influence on location differences. Another reason is that both groups are under the management of the same government, Medan City. So, there is no difference in the influence of government intervention. Third, both groups have the same business scale (micro-businesses) with relatively the same level of turnover. Thus, it can be concluded that the two groups, before the existence of QRIS, tend to have the same micro-business characteristics. Therefore, it can be assumed that if both groups do not use QRIS as a digital payment method, the business development trend will be the same.

The DiD econometric model in this study uses two observation periods, before and after using QRIS. Because the launch of QRIS almost coincided with the beginning of the COVID-19 pandemic, it is assumed that the period before the use of QRIS is considered before the COVID-19 pandemic and after the use of QRIS as during the COVID-19 pandemic. So, the period before using QRIS or before the COVID-19 pandemic (baseline period) is 2019, while the period after using QRIS or during the COVID-19 pandemic is 2020/2021. The DiD econometric model in this research is as follows:

$$\log Y^{1,2,3}_{it} = \beta_0 + \beta_1 \cdot period_t + \beta_2 \cdot group_i + \beta_3 \cdot (period_i \cdot group_i) + \beta_4 \cdot X_{it} + \varepsilon_{it}(3)$$

Where, $\log Y^1_{it}$ is the natural logarithm of the development of business i in period t (2019 and 2020/2021) as seen from business turnover. $\log Y^2_{it}$ is the natural logarithm of the development of business i

in period t as seen from the net profit margin. $\log Y_{it}^3$ is the natural logarithm of the development of business i in period t as seen from the addition of new customers. Period t is a time dummy variable (0 = before using QRIS; 1 = after using QRIS), a group dummy variable (0 = control group, i.e., not yet using QRIS; 1 = treatment group that has used QRIS). X_{it} control variable is characteristic of micro business i in period t . β_3 is the DiD coefficient, which shows the impact of QRIS on the dependent variable.

3.1. Variable Measurement

The variables that are the focus of this study are net profit, turnover, and the addition of new consumers. The net profit is the total net profit received by micro businesses on average per month in 2019 and 2020/2021. The data obtained is then transformed into natural logarithm form. The turnover referred to is the total income received by micro businesses on average per month in 2019 and 2020/2021. The data obtained is then transformed into natural logarithm form. Furthermore, adding new consumers referred to the increase in the number of new customers for micro businesses in Medan City on average per month in 2019 and 2020/2021. The data on this variable is then transformed into natural logarithm form.

4. DATA ANALYSIS AND DISCUSSION

Research data was obtained by distributing questionnaires to 166 micro-business respondents in Medan City via Google Forms. The number of questionnaires that were filled out completely and can be processed in 100 questionnaires, with details of 50 business actors who use QRIS (as the treatment group) and 50 business actors who do not use QRIS (as the control group). Next, validity and reality testing were carried out on the questionnaire. Table 1 shows the results of the validity test.

Table 1. Validity test

Variable	Pearson Correlation	Sig	Explanation
Net Profit	0.923	0.00	Valid
Turnover	0.909	0.00	Valid
Addition of Consumers	0.813	0.00	Valid
Period	-0.406	0.00	Valid

Source: Research Data Questionnaire Results

Table 2. Reliability test

Cronbach Alpha	Explanation
0.639	Reliable

Source: Research Data Questionnaire Results

Table 3. Description of respondents

No.	Description of Respondents	Control Group	Treatment Group
1	Starting a business	Before 2019: 38 businesses (76%) 2019: 12 businesses (24%)	Before 2019: 45 businesses (90%) 2019: 5 businesses (10%)
2	Age range	20 – 65 years	18 – 56 years
3	Gender	Male: 17 people (34%) Female: 33 people (66%)	Male: 23 people (46%) Female: 27 people (54%)
4	Education	> High School: 34 entrepreneurs (68%) High School: 16 entrepreneurs (32%)	> High School: 33 entrepreneurs (66%) High School: 17 entrepreneurs (34%)
5	Type of Business	Trade: 17 businesses (34%) Culinary: 21 businesses (42%) Production: 5 businesses (10%) Services: 7 businesses (14%)	Trade: 13 businesses (26%) Culinary: 21 businesses (42%) Production: 8 businesses (16%) Services: 8 businesses (16%)
6	Average worker employed	4 workers	4 workers

Source: Questionnaire Results

Table 4. Research supporting information

No.	Survey Questions	Respondent's Answer
1.	Average turnover per month from using QRIS (treatment group)	IDR 2,000,000
2.	Digital sales partner	Shopee, Tokopedia, Traveloka, Pegipegi
3.	Payment method for businesses that do not yet use QRIS	bank transfer, cash, current account, OVO, GoPay
4.	Reasons for not using QRIS	do not understand, are not familiar, do not need it yet, hope the service providers will offer them

Source: Questionnaire Results

All statement elements in the research variables are declared valid based on Table 1. Reliability testing uses Cronbach's alpha, with a standard of 0.6. If the Cronbach's alpha value is above the standard, the statements in the questionnaire are considered reliable. The result of the reliability test is shown in Table 2. Based on Table 2, it can be stated that the data in this study is reliable. From the respondents' description, 17 micro-businesses started in 2019, and 83 micro-businesses started before 2019. Sixty business actors are female, and 40 business actors are male. The business actors sampled in this study are, on average, 33 years old. Sixty-four respondents have formal education above high school, and 36 respondents are high school graduates. The types of businesses run by business actors in this research sample are quite varied: 30 business actors run trading businesses, 42 businesses are in the culinary business category, 13 businesses are in the production sector, and 15 businesses are in the service business category. Business actors employ an average of 4 workers.

Table 4 point 1 shows the monthly average turnover obtained from using QRIS. The relatively low transaction value is partly a result of the nominal transaction limits set and the lack of widespread use of QR Codes by consumers to facilitate their payment transactions. Point 2 shows that some micro businesses have used the marketplace to market their products. However, because the information obtained from each respondent is still uneven, this research cannot provide other information regarding the use of this sales facility.

Furthermore, of the several reasons why micro business actors have not used QRIS, 12 business actors state that they do not understand this policy, five business actors state that they do not need it yet, four business actors state that they are not familiar, and four business actors hope to be offered by QRIS payment service providers. The remaining 25 business actors do not provide answers to this question.

Table 5 compares the average characteristics of micro-businesses in Medan City between the control and treatment groups before and during the COVID-19 pandemic. This characteristic is seen from the business scale and net profit margin. The business scales studied have close numbers, so it can be said that the business scales studied for the two groups are the same. The business scale referred to is in the range 1 to 4, the determination of which is adjusted to the answers regarding monthly turnover from all respondents. Next, the total number of ranges from the two groups is divided by the total respondents: 50 for the control group and 50 for the treatment group. Meanwhile, the net profit margin value is the average proportion of monthly net profit to monthly turnover. The net profit margin the control and treatment groups generated during the observation period is positive. The treatment and control groups sampled in this study have relatively similar financial performance conditions. With these identical characteristics, it can be said that if there is no QRIS policy intervention treatment, the two groups will have relatively the same trend. These results explain that the Parallel Trend Assumption is met.

Parallel Trend Assumption can also be seen from the p-value of net profit, turnover, and addition of new customers before implementing the QRIS policy. The probability values for the three are listed in Table 4, respectively: 0.614 for net profit, 0.060 for turnover, and 0.560 for adding new customers. The p-value results for all three are above alpha 5%, or in other words, the difference in net profit, turnover, and addition of new customers between the treatment group and control group micro businesses is not significant before implementing the QRIS policy. The financial performance and addition of new consumers from all samples tend to be identical in character.

Based on the results of the DiD calculation in Table 6, it can be seen that there is a difference in the addition of new customers between the treatment group and the control group before and after the implementation of the QRIS policy. This policy influences the addition of new customers by 20 percent, while 80 percent is explained by other variables not included in this research.

Table 5. Comparison of average characteristics of micro enterprises in Medan City for the period 2019-2020/2021

Characteristics of Micro Enterprises	Control Group		Treatment Group	
	Before the Implementation of QRIS / Before the Covid-19 Pandemic	After the Implementation of QRIS / During the Covid-19 Pandemic	Before the Implementation of QRIS / Before the Covid-19 Pandemic	After the Implementation of QRIS / During the Covid-19 Pandemic
	mean	Mean	mean	Mean
Business Scale (Turnover)	2.52	1.94	2.84	2.52
Net Profit Margin	38.03%	33.57 %	21.62%	21.50%

Source: Results of Statistical Data Processing, 2022

Table 6. DiD method calculation results to see the impact of QRIS policy

Variable	Before the Implementation of QRIS / Before the COVID-19 Pandemic	After the Implementation of QRIS / During the COVID-19 Pandemic	DiD coefficient	Inference	R-squared
Net profit (Y1)	6.601 (Control)	6.207 (Control)	0.274	0.145	0.07
	6.668 (Treated)	6.547 (Treated)			
Turnover (Y2)	0.614 (p>t)	0.011** (p>t)	0.240	0.260	0.09
	7.106 (Control)	6.753 (Control)			
Addition of New Customers (Y3)	7.391 (Treated)	7.279 (Treated)	0.337	0.000***	0.20
	0.060* (p>t)	0.001*** (p>t)			
	0.857 (Control)	0.542 (Control)			
	0.826 (Treated)	0.848 (Treated)			
	0.560 (p>t)	0.000*** (p>t)			

Source: Results of Statistical Data Processing

Meanwhile, policy intervention does not significantly impact the net profit and turnover of micro-businesses in the treatment and control groups.

The QRIS policy positively and significantly impacts expanding market share for micro businesses. This information is reflected in the inference (p-value) of less than 1% and the DiD coefficient value of 0.337. It means that between the control group and treatment group, there is a difference of 33.7% after the policy implementation. The coefficient value in the control group before the policy is 0.857, and after the policy, it is 0.542, which means there is a decrease in customers of 0.315 or around 31%. Meanwhile, the treatment group has a coefficient value from 0.826 to 0.848, or an increase of around 2.2%. The difference in slope shift between the control group and treatment group after the implementation of the policy is also reflected in the p-value of 0.000, or it can be stated that there is a significant difference between the addition of new customers in the treatment and control groups after the implementation of QRIS.

Micro businesses using QRIS that are adaptive to updates to payment service facilities tend to be more transformative towards various forms of progress in other business services, including flexibility in determining selling prices. Table 3 shows that, on average, micro-businesses in the treatment group tend to adjust their profit margins to increase their sales volume. Therefore, the expansion of this market share is also influenced by differences in treatment between the control group and the treatment group in serving consumers and business strategies in general. The strengthening use of digital payments by customers during the COVID-19 pandemic supports the expansion of market share for businesses using QRIS. The research results of Rizkiyah et al. (2021) show that the development of digital payments positively affects consumer behavior by 53.4%.

Furthermore, the QRIS policy does not significantly impact micro businesses' net profit and turnover. The inference value of 0.145 or above alpha 5% can be seen from the inference value. The DiD coefficient value of 0.274 is obtained from the difference between the control group difference and the treatment group difference before and after the implementation of the QRIS policy, which has a difference value of 27.4%. This coefficient value is lower than the DiD coefficient value for adding new consumers. Likewise, turnover,

with an inference value of 0.260, means there is a difference in turnover between the control and treatment groups after implementing the QRIS policy of 26%. As explained in the previous study, the negative impact of the COVID-19 pandemic on the business world, especially micro businesses, has caused their turnover and net profit to decline sharply (Ruata & Weku, 2023; Wahyuni & Giyartiningrum, 2022; Hernikawati, 2022; Palallo, 2021). However, judging from the magnitude of the decline, micro-businesses in the treatment group experienced a relatively smaller turnover and net profit decline than those in the control group. The difference in the net profit coefficient value for the treatment group before and after the implementation of the QRIS policy is 0.121, or there is a decrease in net profit of 12.1% after the implementation of the policy. Meanwhile, the decrease in net profit in the control group after implementing the QRIS policy is 0.394 or greater than the decrease in the treatment group. Likewise, with the decline in turnover, in the treatment group, there is a decline of 11.2%; meanwhile, in the control group, there is a decline of 35.3%.

On the one hand, the COVID-19 pandemic is a momentum in realizing national digital economic-financial integration by presenting a payment system that meets the demands of the digital era. A facilitative regulatory climate for digital economic and financial growth can be realized if there is a continuous evaluation process regarding developments in using QRIS as a payment medium. In addition, this can minimize various obstacles to support increased turnover and net profit received by merchants. The QRIS payment system, which is required to provide fast, safe, and cheap infrastructure, is not yet fully trusted by some micro-business actors. Internet networks that are not evenly distributed in all regions are one of the obstacles faced in realizing the first vision of Indonesia Payment Systems Blueprint 2025.

Based on Table 2, there are several reasons why micro-business actors have not used QRIS as a payment method for their business. Some respondents do not understand and have not received information about QRIS as a payment method. Lack of information related to products is the main challenge for campaigning this policy continuously and creatively. Several reasons why business actors are still hesitant to use QRIS payment media are the costs involved in using it, the long waiting time for funds to enter the account after the settlement process, and the nominal transaction limit, which is relatively small. These factors cause the use of QRIS to not be optimal in Medan City. Another reason is that some business actors are concerned about the tax burden imposed on their business if connected to QRIS. This concern is mixed with the condition of most respondents' businesses, which are experiencing a decline in sales. The accumulation of challenges described above leads to the weak response of business actors in using QRIS as a payment medium.

5. CONCLUSION, IMPLICATION, SUGGESTION, AND LIMITATIONS

The results of this study show that the QRIS policy has a positive impact on adding new customers. There is a significant difference between the addition of new consumers to the treatment group and the control group after implementing the QRIS policy. The QRIS policy in expanding business market share is strengthened by the character of micro-businesses using QRIS that is adaptive to changes in service facilities and flexibility in business strategies. Meanwhile, policy intervention does not significantly impact the net profit or turnover of micro-businesses in the treatment and control groups. The outbreak of the COVID-19 pandemic has caused the turnover and net profit of micro businesses to experience a sharp decline. Judging from the magnitude of the decline, however, micro-businesses in the control group experienced a relatively greater turnover and net profit decline than micro-businesses in the treatment group.

The implication of this study is the need for efforts to increase micro-entrepreneurs understanding of the importance of faster adaptation to advances in digital technology, one of which is in the form of adjustments to a more flexible payment system so that customers get a wider choice of payment schemes. On the other hand, payment system authorities also need to overcome various obstacles in use and provide more massive socialization of the products offered, both those that are already in effect and those that will be implemented in the future, to support micro-enterprises so that they can quickly move up in class. This study contributes to the literature on pricing strategy and business adaptation.

The emergence of several obstacles for some business actors in utilizing the QRIS payment system is an important input for future improvements. It is necessary to provide socialization of QRIS products with more massive support from Payment System Service Providers to realize wider-reaching financial inclusion more quickly. The number of fees incurred for its use, nominal transaction limits that hinder the volume achieved, and the long waiting time for funds to enter the account after the settlement process are important notes to be reconsidered so that merchants truly feel the demand for fast, cheap, safe payments. The

emergence of business actors' concerns about the tax burden imposed on them after being connected to QRIS illustrates the problem of the willingness and ability of business actors to pay taxes.

The information gap between the authorities and business actors can be minimized by strengthening the intensity of communication between the two parties. This strengthening aligns with support from the central and regional governments to readjust tax regulations that are more oriented towards making it easier for business actors to develop their businesses. It is necessary to protect and ensure the confidentiality of merchant data connected to QRIS without eliminating the merchant's tax obligations. So, it is expected that business actors will be increasingly interested and respond positively to the presence of QRIS as an intermediate step in switching to non-cash payments and conducive digital financial inclusion.

The limitation of this study is that sampling is carried out during the pandemic, so the samples obtained are limited. For future researchers, it is recommended to take a larger sample with a longer observation period so that the impact of the QRIS policy can be detected, especially in normal economic conditions.

REFERENCES

- Bank Indonesia, D. G. B. (2019). Peraturan Anggota Dewan Gubernur. *Peraturan anggota Dewan Gubernur Nomor 21/18 /PADG/2019 tentang implementasi standar nasional quick response code untuk pembayaran*, 1–30.
- Card, D., & Krueger, A. B. (1994). Minimum wages and employment: a case study of the fast-food industry in New Jersey and Pennsylvania. *The American Economic Review*, 84(4), 772–793. <http://www.jstor.org/stable/2118030>
- Carera, W. B., Gunawan, D. S., & Fauzi, P. (2022). Analisis perbedaan omset penjualan UMKM sebelum dan sesudah menggunakan QRIS di Purwokerto. *Jurnal Ekonomi, Bisnis, Dan Akuntansi (JEBA)*, 24(1), 48–57.
- Dinas Koperasi UKM, P. dan P. (2022). *Terdampak pandemi Covid-19, ribuan UMKM di Medan akan beralih ke security crowdfunding*. <https://diskoperindag.pemkomedan.go.id/berita/site/read29/.html>
- Hernikawati, D. (2022). The Covid-19 pandemic impact for small and medium enterprise (SME) in Palembang. *Majalah Ilmiah Semi Populer Komunikasi Massa*, 3(1), 9–17.
- Hery. (2016). *Financial ratio for busniess: analisis keuangan untuk menilai kondisi finansial dan kinerja perusahaan*. Grasindo.
- Hutagalung, R. A., Nainggolan, P., & Panjaitan, P. D. (2021). Analisis perbandingan keberhasilan UMKM sebelum dan saat menggunakan Quick Response Indonesian Standard (QRIS) di Kota Pematangsiantar. *EKUILNOMI: Jurnal Ekonomi Pembangunan*, 3(2), 94–103. <https://doi.org/https://doi.org/10.36985/ekuilnomi.v3i2.260>
- Jagtiani, J., & John, K. (2018). Fintech : the impact on consumers and regulatory responses. *Journal of Economics and Business*, 100, 1–6. <https://doi.org/10.1016/j.jeconbus.2018.11.002>
- Lee, I., & Jae, Y. (2018). Fintech : ecosystem, business models, investment decisions, and challenges. *Business Horizons*, 61(1), 35–46. <https://doi.org/10.1016/j.bushor.2017.09.003>
- Li, W., & Pang, W. (2023). Digital inclusive finance, financial mismatch and the innovation capacity of small and medium-sized enterprises: Evidence from Chinese listed companies. *Heliyon*, 9(2), 1–16. <https://doi.org/https://doi.org/10.1016/j.heliyon.2023.e13792>
- Maksudi, M. Y., Maksudi, A. M., Zabidi, I., Hendra, HR, I., & Suryono, D. W. (2021). Pengaruh penggunaan instagram terhadap omzet penjualan produk pakaian pada UMKM Inoy Daily Wear di Tasikmalaya. *Jurnal STEI Ekonomi (JEMI)*, 30(02), 94–101. <https://doi.org/https://doi.org/10.36406/jemi.v30i02.444>
- Mayanti, R. (2020). Faktor-Faktor yang mempengaruhi penerimaan user terhadap penerapan Quick Response Indonesia Standard sebagai teknologi pembayaran pada dompet digital. *Jurnal Ilmiah Ekonomi Bisnis*, 25(2), 123–135. <https://doi.org/10.35760/eb.2020.v25i2.2413>
- Muslichah, & Bahri, S. (2021). *Akuntansi dan manajemen: teori dan aplikasi*. Mitra Wacana Media.
- Narayan, S. W. (2020). Does fintech matter for Indonesia's economic growth? *Buletin Ekonomi Moneter Dan Perbankan*, 22(4), 437–456. <https://doi.org/10.21098/bemp.v22i4.1237>
- Narayan, S. W., & Sahminan, S. (2018). Has fintech influenced Indonesia's exchange rate and inflation? *buletin ekonomi moneter dan perbankan*, 21(2), 189–202. <https://doi.org/10.21098/bemp.v21i2.966>
- Palallo, F. (2021). Analisis dampak pandemi Covid-19 terhadap kinerja keuangan usaha mikro, kecil dan menengah (UMKM) di Kota Palopo. *Universitas Muhammadiyah Palopo*, 1–11.
- Peraturan Pemerintah Republik Indonesia Nomor 7. (2021). *Tentang kemudahan, perlindungan, dan pemberdayaan koperasi dan usaha mikro, kecil, dan menengah*.
- Philippon. (2016). The fintech opportunity. *Euphytica*, 18(2), 22280. <http://dx.doi.org/10.1016/j.jplph.2009.07.006%0Ahttp://dx.doi.org/10.1016/j.neps.2015.06.001%0Ahttps://www.abebooks.com/Trease-Evans-Pharmacognosy-13th-Edition-William/14174467122/bd>
- Rizkiyah, K., Nurmayanti, L., Macdhy, R. D. N., & Yusuf, A. (2021). Pengaruh digital payment terhadap perilaku konsumen pengguna platform digital payment OVO. *Jurnal Ilmiah Manajemen*, 16(1), 107–126.
- Ruata, H., & Weku, P. (2023). Analisis dampak Covid 19 terhadap penjualan usaha mikro, kecil, dan menengah (UMKM) (studi kasus pada forum UMKM Kota Manado). *Going Concern: Jurnal Riset Akuntansi*, 18(2), 130–139.

- Saputri, O. B. (2020). Preferensi konsumen dalam menggunakan Quick Response Code Indonesia Standard (QRIS) sebagai alat pembayaran digital. *Journals of Economics and Business Mulawarman*, 17(2), 237-247.
- Sari, A. P. (2019). Pengaruh remitansi terhadap perbedaan kesejahteraan rumah tangga di Indonesia dengan metode propensity score matching. *Jurnal Ekonomi Pembangunan*, 8(2), 98-112. <https://doi.org/10.23960/jep.v8i2.38>
- Setiawan, I. W. A., & Mahyuni, L. P. (2020). Qris di mata UMKM: eksplorasi persepsi dan intensi UMKM menggunakan QRIS. *E-Jurnal Ekonomi Dan Bisnis Universitas Udayana*, 9(10), 921-946. <https://doi.org/10.24843/eeb.2020.v09.i10.p01>
- Shao, J. B., Wang, Z., & Long, X. X. (2008). The driving factor of customer retention: empirical study on bank card. *2008 International Conference on Management Science and Engineering 15th Annual Conference Proceedings*, 558-564. <https://doi.org/doi:10.1109/ICMSE.2008.4668969>
- Sihaloho, J. E., Ramadani, A., & Rahmayanti, S. (2020). Implementasi sistem pembayaran Quick Response Indonesia Standard bagi perkembangan UMKM di Medan. *Jurnal Manajemen Bisnis*, 17(2), 287-297. <https://doi.org/https://doi.org/10.38043/jmb.v17i2.2384>
- Sujarweni, V. W. (2017). *Analisis laporan keuangan: teori, aplikasi, dan hasil penelitian*. Pustaka Baru Press.
- Susilo, D. (2023). Digital marketing communication model to persuade QRIS transaction in @tmrwindonesia Instagram account. *Sibatik Journal*, 2(11), 3425-3440.
- Syarifuddin, F., Hidayat, A., & Tarsidin, T. (2009). Dampak peningkatan pembayaran non-tunai terhadap perekonomian dan implikasinya terhadap pengendalian moneter di Indonesia. *Buletin Ekonomi Moneter Dan Perbankan*, 11(4), 369-402. <https://doi.org/10.21098/bemp.v11i4.346>
- Wahyudi, Sutoyo, Rizaldi, F., Dzakwan, D. I., & Akbar, F. (2022). Penerapan customer acquisition dalam pertumbuhan bisnis pada Dapoer Super Sambal Padang. *Jurnal Ilmiah Rekayasa Dan Manajemen Sistem Informasi*, 8(2), 109-115.
- Wahyuni, I. D., & Giyartiningrum, E. (2022). Analisis kinerja keuangan sebelum dan saat pandemi Covid-19 (studi kasus Bunda Laundry). *Journal Competency of Business*, 6(2), 1-16.
- Wardhani, R. A., Arkeman, Y., & Ermawati, W. J. (2023). The impact of quick response adoption of payment code on MSMEs' financial performance in Indonesia. *International Journal of Social Service and Research*, 03(03), 869-878. <https://doi.org/https://doi.org/10.46799/ijssr.v3i3.294>
- Waren, C. S., & Reeve, J. M. (2017). *Pengantar akuntansi 1 - adaptasi Indonesia* (4th ed.). Salemba Empat.