Digital Transformation of Small Medium Enterprises: A Descriptive Analysis of Quick Response Indonesia Standard Data

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Abstract: *The purpose of this study is to explain the digital transformation of Indonesian micro and medium enterprises (SMEs) through descriptive data analysis on the implementation of the Indonesian quick response standard (QRIS) through the end of 2021. The implementation of QRIS in Indonesia increases literacy and electronic financial inclusion among Indonesian SMEs, attempting to make it easier for the government to conduct better monitoring of SME transactions. The development of QRIS, which began in 2019, has proven to be capable of improving the documentation of digital financial inclusion of SMEs with 14.78 million merchants, the majority of whom are SME merchants, specifically micro business merchants (UMI), small business merchants (UKE), and medium business merchants (UME). Similarly, SMEs dominate in terms of volume and nominal transactions. This descriptive analysis will provide an overview of the evolution of SME digitization in Indonesia, which market players and regulators can use to develop policies and strategies for the future of SMEs.*

***Keywords: Digital Transformation; QRIS; Small Medium Enterprise***

INTRODUCTION

The COVID-19 pandemic that has spread the world is now in its third year and shows no signs of easing. This pandemic has had a negative impact on many business sectors, including Indonesia. SMEs are one of the pillars of the Indonesian economy that have proven to be the most resilient sector in surviving Indonesia's crises (Santia, 2020). The social limitations imposed during the pandemic have also encouraged all sectors, including SMEs, to undergo digital transformation. According to many experts, increasing the productivity and performance of SMEs presupposes the use of digital technology (Papadopoulos et al., 2020).

SMEs are a type of business that makes a significant enough contribution to economic growth. Small and medium-sized enterprises (SMEs) play an important role in increasing job opportunities and employment. The importance of SMEs in Gross Domestic Product formation will be felt. According to data from the Ministry of Cooperatives, the number of SMEs in Indonesia reached 64.2 million in the first quarter of 2021. These SMEs made up 61.07 percent of the total, or Rp 8,573.89 trillion. Furthermore, it can absorb 97 percent of the total workforce while increasing 60.4 percent of total investment (Kusdimanto et al., 2022).

A previous study found that payment innovation has an impact on the performance of SMEs. It was discovered that the role of Fintech as a force for financial inclusion and SME growth in Indonesia is to be able to create opportunities for SMEs in Indonesia, particularly lower-middle businesses, to gain financial strength and capital for business operations, investment, and development (expansion) opportunities through Fintech-based financial inclusion (Shofawati, 2019). However, SMEs encounter issues with their financial behavior and/or transactions,

resulting in a disruption in their performance (Raveendra et al., 2018). The next issue that arises in SMEs is unequal financial inclusion, even though we all know that the greater the increase in financial inclusion in SMEs, the greater their financial stability. As a result, it has an impact on growth and improves the performance of SMEs (Putri, 2019; Sanistasya et al., 2019; Septiani et al., 2020). On the other hand, the government intends to focus on financial inclusion because it has been indicated that banking financial inclusion has a significant influence on the long-term stability of the Indonesian economic system (Rusdianasari, 2018). Figure 1 illustrates the relationship model of payment system innovation and SME performance that we visualized derived from the previous research.
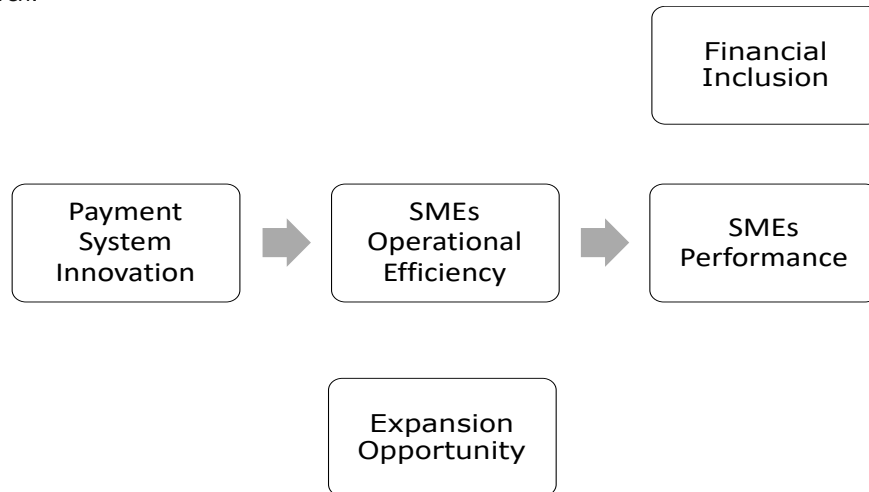
Figure 1. Relationship model of payment system innovation and SME performance (author's conceptual model)

Digitization in SMEs takes place not only for internal business processes, but also for relationships between SMEs and their customers and suppliers (Andriani & Fitria, 2020). Figure 2 shows one conceptual model of SMEs' digital transformation (Muditomo & Wahyudi, 2020), which is an adaptation of the previous digital transformation flow model (Verhoef et al., 2019). The Reasonable Digital Transformation Model for SME conceptual model (Muditomo & Wahyudi, 2020) states briefly and clearly that the strategic imperatives of sensible implementation for SMEs to digitally transform are to become a digital business, digitize their operations, and/or pursue digital partners.

The Reasonable Digital Transformation Model (R-DT model) is a simplified version of the flow model (Verhoef et al., 2019) designed to make it easier to apply in SMEs with varying levels of digital maturity and liquidity (Priyono et al., 2020). The internal driver, for example, has a relatively low urgency compared to the trigger for a pandemic condition (external driver), or the internal driver, in the form of operational digitization efforts, can have a higher urgency with efficiency considerations when compared to external drivers, in the form of changes in technology trend. The next stage of the process is to ensure that the Digital Transformation (DT) objectives have been established, complete with clear achievement measures, and that management has decided on a strategic imperative related to the outcome of the DT implementation, which is to change the company's business model to be fully digital.
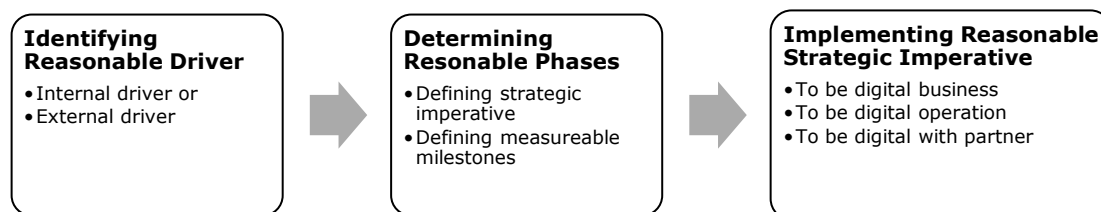
Figure 2. Reasonable Digital Transformation (R-DT) Model for SME (Muditomo & Wahyudi, 2020)

On August 17, 2019, Bank Indonesia introduced the Indonesian quick response standard (QRIS), which will be implemented nationally beginning January 1, 2020 (Bank Indonesia, 2019a). Quick Response Code Indonesian Standard, abbreviated as QRIS (read KRIS), is the use of a QR Code to unify various QR types from various Payment System Service Providers (PJSP). QRIS was created by the payment system industry in collaboration with Bank Indonesia to make the QR Code transaction process easier, faster, and more secure. QRIS must be

implemented by all Payment System Service Providers who will accept QR Code Payments. With QRIS, all payment applications used by the public from any Operator, both bank and non-bank, can be used in all shops, merchants, stalls, parking lots, tourist tickets, donations (merchants) with the QRIS logo, even if the QRIS provider at merchants is different from the application provider used by the buyer (Bank Indonesia, 2019b).

At this point, the authors encounter interesting questions, like: How does the implementation of QRIS represent the quantity indicators for the digital transformation of SMEs? Referring back to the R-DT Model (Muditomo & Wahyudi, 2020), SMEs in Indonesia can use QRIS to accelerate digital transformation by collaborating with PJSP as a strategic partner to go digital and digitize their operations. More research has been discovered in the field of use (Candra Sari & Hermawan Adinugraha, 2022; Mahyuni & Setiawan, 2021; Nada et al., 2021; Sihaloho et al., 2020; Silaen, Manurung, & Nainggolan, 2021; Silaen, Manurung, Nainggolan, et al., 2021; Yuningsih et al., 2021).

We reconstruct the following research framework using the R-DT Model in Figure 2 and the implementation of QRIS in Indonesia: (1) the transformation driver is an external driver; (2) the phase completed is the milestone of achieving QRIS deployment at merchants in Indonesia; and (3) the strategic imperative of the impact on SMEs is 'to be digital operations,' particularly for customer payment methods, and 'to be digital with partners,' in collaboration with PJSP acquirers. The answers to the research questions above will contribute knowledge to research on QRIS in relation to SMEs in Indonesia from a different perspective.

METHODOLOGY

This research employs a descriptive research design as part of a conclusive research design (Sumarwan et al., 2018). Descriptive research design is a research method that aims to describe the characteristics of a person, group, organization, or environment. A survey is a popular approach to this descriptive research design. Figure 3 depicts the overall research design classification chart.
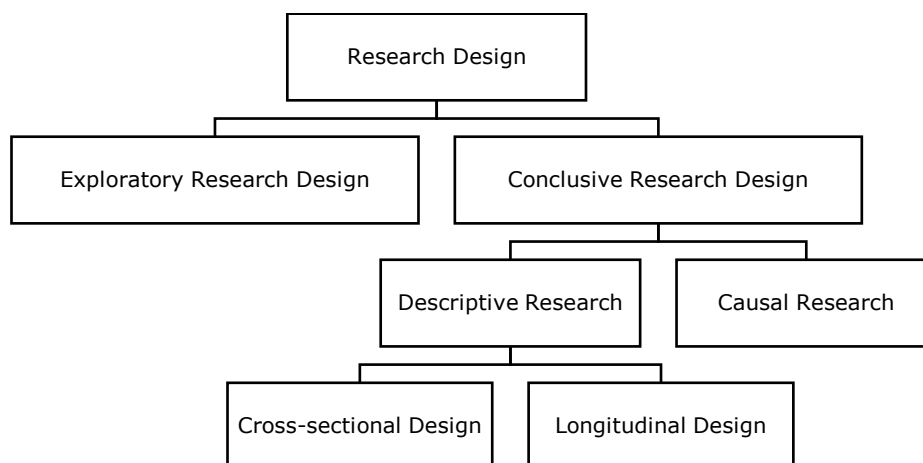
Figure 3. Research design classification (Sumarwan et al., 2018)

The distinction between qualitative and quantitative research is that quantitative research has one feature in common: whatever is being studied is converted into numbers or numeric forms. Descriptive research is a type of quantitative research study that entails survey research using a quantitative variables research tool. We already know that research data can be divided into two categories: primary data and secondary data. The benefit of using secondary data is that it is obtained quickly because researchers do not need to collect data directly, but the disadvantage is that the data received may not be in complies with what the researcher desires. There are two types of secondary data: qualitative data and quantitative data. Data from descriptive research is classified as quantitative data. Figure 4 depicts the entire classification of research data.

In this study, we use secondary quantitative descriptive observational data set of debit card transaction to evaluate the impact of a digital transformation program implemented by a small business in Indonesia. We use debit card transaction data to estimate the impact of a digital transformation program implemented by a small business in Indonesia. We hope to obtain information to systematically describe a phenomenon, situation, or population on debit card transactions using this method. The data used in this study is based on publicly available Bank Indonesia statistics. The data set includes the following items: the number of QRIS merchants, the QRIS merchant criteria, the QRIS transaction volume, and the QRIS transaction nominal for 2020-2021.
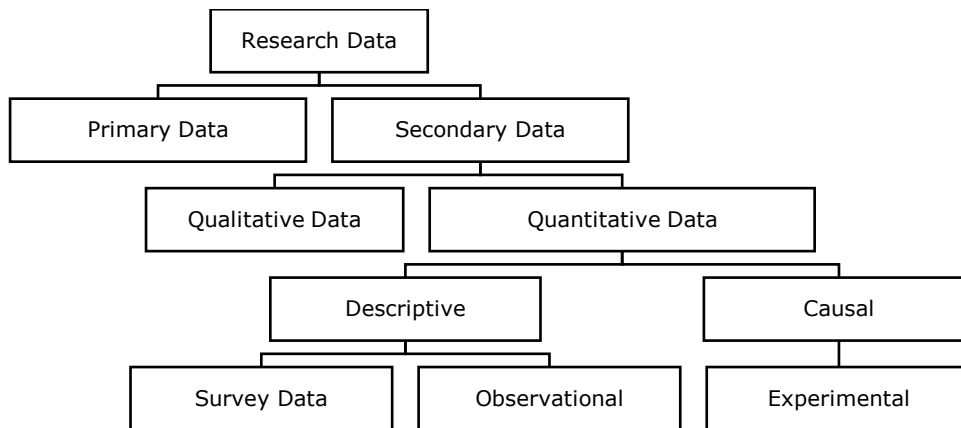
Figure 4. Research Data Classification (Sumarwan et al., 2018)

RESULTS

We begin this section by presenting data on QRIS implementation from 2020 to the end of 2021 that we obtained from the Bank Indonesia statistical site at the end of 2021 (Bank Indonesia, 2021a). And after that, we will discuss the logical interpretation of each data point and data graph based on the underlying economic intuition. Then, we perform a simple analysis of these data. We visually observe the movement of the data from month to month during a very short observation period of 12 months, from January 2020 to December 2021, among them in the 'results' section. We explain the phenomena that occur in the 'discussion' section employing our knowledge on economic intuition.

The number of QRIS merchants has increased rapidly since it was officially launched in 2019 and implemented in January 2020. This rapid expansion is supported by PJSP Bank and non-bank institutions (payment fintech). Potential SMEs that have previously only accepted cash payments are encouraged to accept QRIS as a form of payment from their customers. New merchant acquisition opportunities continue to be abundant, both in terms of potential retail merchants and merchants associated with Ministries and Institutions through programs such as the "Kebijakan Elektronifikasi Transaksi Pemda', "Gerakan Bangga Buatan Indonesia", and other programs that encourage the widespread use of QRIS throughout Indonesia.
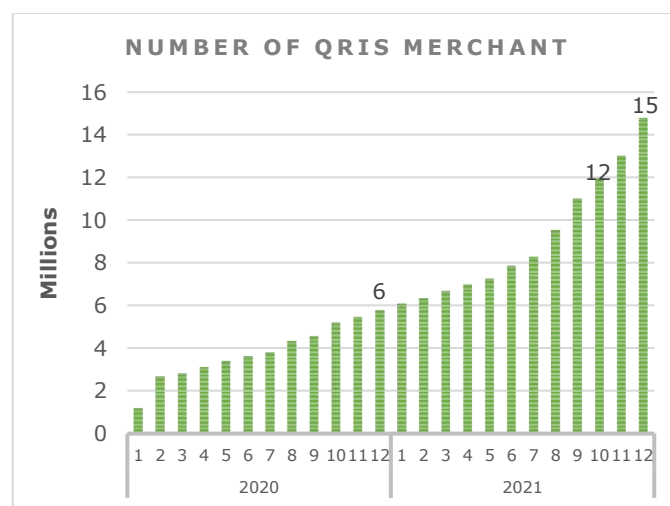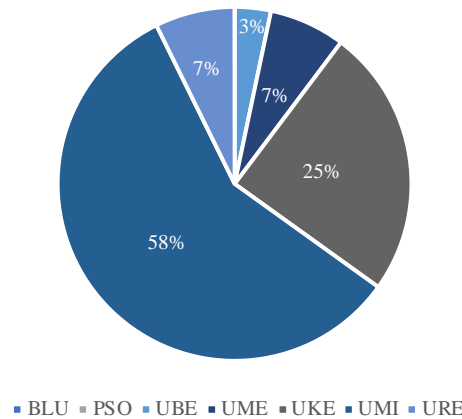

Figure 5. Number of QRIS Merchant (Bank Indonesia, 2021a)

Figure 5 shows that the number of QRIS merchants increased by 155.66 percent in 2021 to 14.78 million merchants, up from 5.78 million merchants at the end of 2020. Throughout 2021, the average monthly increase in the number of QRIS merchants was 8.21%. As we can see, the growth is more exponential than linear. The main driver for this was Bank Indonesia's role in encouraging the achievement of millions of QRIS merchants at the beginning of its implementation.

Bank Indonesia categorizes merchants based on their size and type of business. To determine the overall distribution of merchants in each category, we evaluate merchant categories based on the number of merchants in each category. We also identified several merchant categories based on Bank Indonesia categorization, which

can be identified as the SME group. Figure 6 shows the distribution of merchant criteria among the total number of merchants as shown in Figure 5 above: UMI (Micro Business), UKE (Small Business), UME (Medium Business), UBE (Large Business), BLU (Public Service Agency), PSO (Public Service Obligation), and URE (Donation/Social).


Figure 6. Distribution of QRIS Merchant per Criteria (Bank Indonesia, 2021a)

The dominance of SMEs (UME, UKE, and UMI) reaches 90 percent of all QRIS merchants in Indonesia. This demonstrates a high level of adoption (intention to use) by SMEs in accepting the PJSP partnerships. On the other hand, this demonstrates that PJSP's strategy for acquiring QRIS merchant partners prioritizes the SME segment over other segments.

The following analysis is for transaction volume and nominal QRIS transactions. The number and distribution of these merchants resulted in extraordinary growth in published QRIS transactions, with a volume increase of 201.90 percent (see Figure 7) from 124 million in Year 2020 to 375 million in Year 2021 and a nominal increase of 236.72 percent (see Figure 8) from Rp821 trillions in Year 2020 to Rp27,63 trillions in Year 2021. These findings show that the use of the QRIS standard for all server-based electronic money transactions, which ensures interconnection and interoperability, has proven to increase transaction volume and nominal value. We examine these QRIS transactions as whole and, ignoring the existence of 'on-us' and 'off-us' transactions. In a simple term, 'on-us' transactions are transactions made by customers at merchants who use the same acquirer and issuer of the payment instrument (acquirer is the same as the issuer). Meanwhile, a 'off-us' transaction is the opposite, thus a transaction made by a customer at a merchant with an acquirer other than the issuer of the payment instrument used (acquirer is not the same as the issuer).
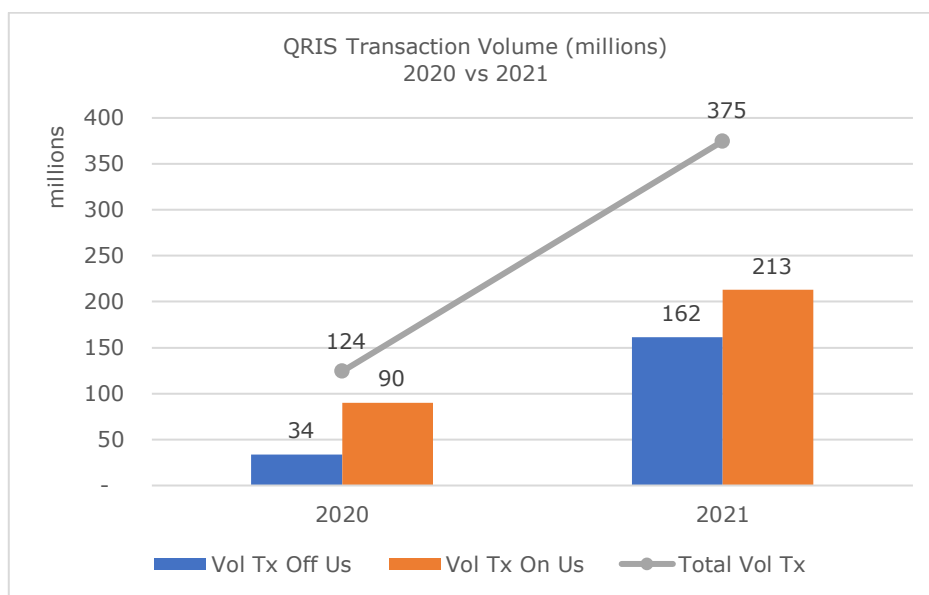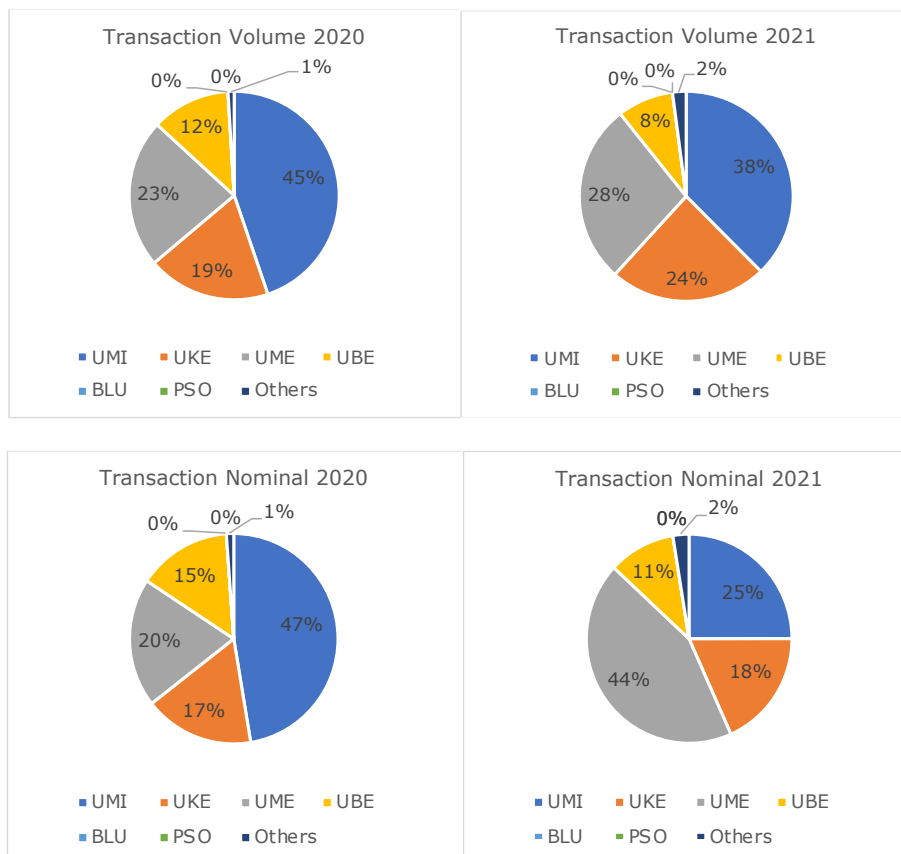

Figure 7. Transaction Volume of QRIS (Bank Indonesia, 2021a)
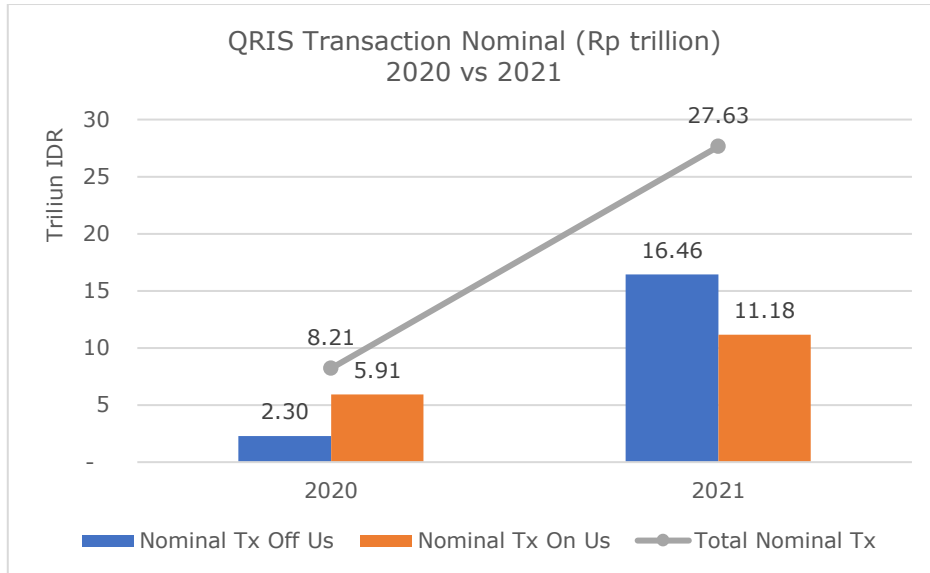
Figure 8. Transaction Nominal of QRIS (Bank Indonesia, 2021a)

The following stage of descriptive analysis is for data on the contribution of each merchant category to volume and nominal transactions in 2020 and 2021. We consistently categorize merchants inside the UME, UKE, and UMI categories as SME merchants. The descriptive analysis of the contribution data of each merchant category on the volume and nominal of transactions revealed several findings. First, SMEs continue to dominate, with SME transaction volume reaching 80% in 2020 and 90% in 2021; Second, the profile of volume and nominal transactions in 2021 also show that most transactions have shifted from micro enterprises (UMI) to medium business segments (UME), while large business segments (UBE) significantly increased in nominal terms but found to be declining in market share.

Figure 9 Transaction Volume and Nominal of QRIS (Bank Indonesia, 2021a)

DISCUSSION

In this section, we will find evidences from our research framework reconstruction that: (1) the transformation driver is an external driver; (2) the phase completed is the milestone of achieving QRIS deployment at merchants in Indonesia; and (3) the strategic imperative of the impact on SMEs is 'to be digital operations,' particularly for customer payment methods, and 'to be digital with partners,' in collaboration with PJSP acquirers.

First, we will look for evidence that the transformation of SMEs is the response to external driver. Based on Number of Merchant analysis result (Figure 5), it shows the significant role of the regulator, in this case Bank Indonesia, in encouraging the growth of the number of QRIS merchants by setting a target of 12 million merchants in 2021 (Bank Indonesia, 2021b), which the industry has demonstrated to achieve in October 2021. This strategy to increase the number of merchants who accept QRIS transactions clearly shows that Bank Indonesia understands the two-sided electronic payment market, which must serve both the customer side of QRIS payment instrument holders and merchants with a high level of acceptance. Furthermore, a deeper examination at the R-DT Model (Figure 2) confirms the findings of the initial identification that supports our research framework, which is that the external driver is the main driver for the transformation of SMEs this time. This result also confirms that the declaration of a target number of 15 million merchants by the end of 2021 clearly illustrates external encouragement, in this case from Bank Indonesia, for PJSPs and merchants to achieve the same digital transformation milestone, the number of QRIS merchants.

We find evidence of strategic imperatives indicating that SMEs must 'be digital operations,' particularly in terms of customer payment methods, and 'be digital with partners,' in collaboration with PJSP acquirers. This is evidenced by an increase in volume and nominal transactions, as shown in Figures 4, Figure 6, and Figure 7. Assuming we exclude the significant increase in merchant sales during the study period (business as usual), we can draw the conclusion from economic intuition that there has been a shift in SME customers' payment patterns from cash to non-cash/electronic.

Second, we will look for evidence that the stages that have been completed have resulted in the successful implementation of QRIS at merchants. The very high growth in the number of merchants (Figure 5) clearly shows that Bank Indonesia's campaign for Indonesia reached 12 million QRIS merchants by the end of 2021, indicating that the number of QRIS merchants is the most priority achievement milestone. This suggests that Bank Indonesia is pursuing a two-sided payment market model by prioritizing the supply side. Bank Indonesia is attempting to control the supply side by encouraging the industry to provide as many merchant partners as possible to persuade potential users of QRIS payment instruments that QRIS acceptance is very broad. Furthermore, the presence of these millions of merchants will be used to encourage an increase in the number of QRIS users (Pitoko, 2022). With a very large number of merchants and QRIS users, the opportunity to increase QRIS transactions at merchants, specifically SMEs as the dominant QRIS merchant, will be incredibly large.

Finally, we will look for evidence that SMEs' 'to be digital' considerations are 'to be digital operations' and 'to be digital with partners.' We formulate the economic intuition that the development of the QRIS instrument earned a positive response from the SME segment based on the results of data analysis on the contribution of each merchant category to the volume and nominal of transactions. This is consistent with previous research, which found that the SME segment welcomed the implementation of QRIS and saw it as having a positive impact on its business. Going digital with partners is not a decision made solely by SMEs without external consideration and support. The Bank Indonesia initiative, the speed by which PJSP conducts development, and industry agreements in implementing interconnection and interoperability operations each actually assist SMEs. The collaboration of entrepreneurs, service providers, infrastructure providers, industry, and regulators seem to be what enables the QRIS implementation to provide optimum benefit to Indonesian SMEs.

CONCLUSION

This study reveals how the availability of public data can allow researchers to be more creative in carrying out their research. The right research design and research data design will make it easier for researchers to take information that can support conclusions and leave available for future studies.

Based on the descriptive analysis presented above, it is possible to conclude that the implementation of QRIS has represented the quantity indicators for the digital transformation of SMEs. The digital transformation in question is related to SMEs' ability to accelerate digital transformation by partnering with PJSP as a strategic partner to go digital as well as digitize their operations, particularly in digitizing the management of payment transactions from their customers. Another non-financial benefit of implementing QRIS is the acceleration of financial inclusion and financial literacy among SMEs, as they shift from using financial institution products less to using financial institution products. The total number of QRIS SME merchants recorded until the end of 2021, 13.2 million, was not the end of this achievement. The number of SMEs that have not been recorded using QRIS as a payment instrument is estimated to be very large, given that the number of SMEs in Indonesia is expected to reach 65 million by the end of 2020. (Katadata, 2020; Kementrian Keuangan RI, 2021).

The successful implementation of QRIS proves the government's success in encouraging payment system innovation to become more cashless and electronic, encouraging the growth of SMEs, and increasing financial inclusion, particularly for SMEs. The existence of QRIS has the potential to improve the economy by making it

easier to carry out payment activities more effectively and efficiently (Kusdimanto et al., 2022; Ozili, 2018).QRIS is a transactional solution for SMEs and SME customers. This contributes to the values of financial inclusion by eliminating unnecessary non-price and price challenges in financial transactions. Electronic transactions, such as the use of QRIS, will improve SMEs' financial behavior. The better a SME's financial behavior, the better the SME's performance. And, in establishing financial behavior, good financial literacy is required, because if SMEs already have good financial management skills, their performance will improve.

The managerial implications of this study include providing a space for academics and researchers to examine the impact of QRIS implementation on the welfare of SMEs, providing input for the government and regulators to determine policy directions that can benefit SMEs and QRIS PJSP, and providing discourse for SMEs about the role of QRIS in freeing up more transaction opportunities.

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