Journal of Finance Integration and Business Independence
Bridging Finance and Business for Sustainable Growth
JoFIBI
Volume: 2 Issue 2 Year: 2026 Pages: 1 – 11
DOI: 10.64276/jofibi.v2i2.119
E-ISSN: 3090-2746
Yayasan Bina Bisnis Nusantar Medan
Creative Commons Attribution-NonCommercial 4.0 International License

# Digital Payment Use and MSME Performance: Evidence from QRIS and E-Wallets in Medan, Indonesia

**Riddick Loowi[1], Rafida Khairani[2], Debbi Chyntia Ovami[3]**
riddickloowi2005@gmail.com[1], rafidakhairani256@gmail.com[2], debbichyntia@gmail.com[3]
[1,2]PUI Center for Fintech Innovation and Sustainable Economics, Universitas Prima Indonesia, Indonesia
[3]Universitas Muslim Nusantara Al Washliyah, Medan, Indonesia

**Corresponding Email:** rafidakhairani256@gmail.com

## Abstract

This study aims to examine the relationships between QRIS use, e-wallet use, and the performance of micro, small, and medium enterprises (MSMEs) in Medan, Indonesia. A quantitative approach was employed using survey data collected through online questionnaires from 100 MSME operators selected through purposive sampling. Responses were measured using a five-point Likert scale and analyzed using multiple linear regression in SPSS. The results show that QRIS use had a positive but statistically nonsignificant association with MSME performance ($B = 0.156$, $t = 1.553$, $p = .124$). E-wallet use was positively and significantly associated with MSME performance ($B = 0.639$, $t = 5.966$, $p < .001$). The overall regression model was statistically significant ($F = 39.683$, $p < .001$), explaining 45.0% of the variation in MSME performance, with an adjusted $R^2$ of .439. The study concludes that e-wallet use was significantly associated with higher reported MSME performance after accounting for QRIS use, whereas QRIS use showed no significant independent association. These findings highlight the importance of evaluating digital payment services in relation to business outcomes, while recognizing that the measures reflect perceived payment benefits and self-reported performance.

**Keywords: QRIS, e-wallets, digital payments, MSME performance, Medan**

## Introduction

Digital payments have become an important component of business digitalization, offering micro, small, and medium enterprises (MSMEs) additional ways to receive payments and manage transaction information (Arifin, 2025)(Khairani, Octora, et al., 2025). For business operators, these services may support payment convenience, reduce transaction-related difficulties, and accommodate customers' payment preferences. However, the availability of digital payment facilities does not necessarily correspond to improvements in business performance (Harianto, Azman, et al., 2025). Understanding their relationship with turnover, business growth, cost efficiency, and profitability is therefore relevant to evaluating the benefits of financial technology for MSMEs (Normawati et al., 2024)(Khairani, Tantono, et al., 2025).

In Indonesia, the Quick Response Code Indonesian Standard (QRIS) and electronic wallets (e-wallets) are closely connected components of the digital payment ecosystem (Gunawan et al., 2023). Bank Indonesia introduced QRIS as a standardized QR code payment interface that accommodates transactions through electronic money applications, electronic wallets, and mobile banking (Harianto, Fali, et al., 2025). QRIS enables merchants to accept payments from compatible applications through a standardized code, while e-wallets provide application-based payment services (Khairani, Silaban, et al., 2025). Although they perform different functions, both can be involved in the same transaction (Hardiansyah et al., 2025). Their relationship with business performance should therefore be examined with attention to their interconnected roles (Kallmuenzer et al., 2025)(Khairani, Silaban, et al., 2026).

From a business perspective, digital payment services can offer benefits when their features meet operational needs (Nurbayan et al., 2025). The Technology Acceptance Model explains that perceived usefulness and perceived ease of use are important determinants of technology acceptance (Davis, 1989). This perspective helps explain why MSME operators may value payment services that are convenient, accessible, and efficient. Nevertheless, favorable perceptions of a payment service do not by themselves demonstrate improved business outcomes (Mujalli et al., 2025). Examining the relationship between these perceptions and reported performance can provide evidence of how operators experience digital payments in their businesses (Abdennebi, 2023).

JoFIBI licensed under a **Creative Commons Attribution-NonCommercial 4.0 International License**

Previous research has identified positive relationships between digital payments and MSME performance. (Rani & Desiyanti, 2024) found that digital payments were positively related to the performance of food and beverage MSMEs in Padang. (Amirullah & Syakur, 2025; Khairani, Silaban, et al., 2025) also reported a significant relationship between e-wallet use and MSME financial performance in Malang. For QRIS specifically, (Ramayanti et al., 2025) found a positive and significant relationship with MSME financial performance in Yogyakarta. These findings support the potential business relevance of digital payments, although differences in payment measures, business characteristics, and analytical models limit direct comparisons across studies.

Other studies suggest that these relationships are not uniform. (Khairani, Tantri, et al., 2025) examined QRIS and e-wallets simultaneously in Merawang and found that e-wallet use was significantly related to transaction effectiveness, whereas the partial relationship for QRIS was not significant. More recently, (Akbar et al., 2026) found that transaction efficiency mediated the relationship between QRIS adoption and MSME performance, while the direct relationship was not significant. In contrast, (Saputra et al., 2026) reported beneficial QRIS-related outcomes involving transaction efficiency, income growth, and financial management among MSMEs in Palu. These findings indicate the importance of considering the outcome measured and the explanatory structure of each study when assessing the business relevance of digital payments.

Building on this literature, the present study examines QRIS use and e-wallet use within a single regression model among MSMEs in Medan, Indonesia (Khairani, Munthe, et al., 2026). The study covers operators in trading, culinary businesses, services, and creative industries (Ginting et al., 2026). Its contribution is contextual evidence concerning whether each payment-related measure retains an association with reported business performance after accounting for the other (Bhastary et al., 2025). The performance measure covers perceived improvements in turnover, business development, cost efficiency, and profitability (Kindermann et al., 2024). The payment measures primarily reflect respondents' assessments of the benefits and convenience of using the services, rather than actual transaction frequency or value.

Accordingly, this study aims to examine the partial and joint relationships of QRIS use and e-wallet use with MSME performance in Medan. The findings are expected to inform discussions of financial technology and small business management by distinguishing the relationships associated with two interconnected components of digital payments. They may also provide practical considerations for MSME operators, payment service providers, and business support institutions when evaluating digital payment services in relation to business needs and outcomes.

## Theoretical Review

### Theoretical Foundation

This study draws on the Diffusion of Innovations theory, particularly the concept of relative advantage. (Sahin et al., 2006) explains that relative advantage concerns whether an innovation is perceived as better than the practice it replaces. In the MSME context, QRIS and e-wallets may offer advantages through payment convenience, faster transactions, and easier access to transaction information (Katijah et al., 2026). These perceived advantages provide a theoretical basis for examining their relationships with business performance (Khairumi et al., 2025).

The Technology Acceptance Model provides a supporting perspective. (Davis, 1989; Ma & Liu, 2011; Venkatesh et al., 2003) identifies perceived usefulness and perceived ease of use as important beliefs underlying technology acceptance. These concepts help explain operators' favorable assessments of payment services that support everyday business activities (Venkatesh & Davis, 2000). In this study, both theoretical perspectives guide the interpretation of perceived payment benefits and their associations with reported MSME performance. The study does not test either theoretical framework in full (Ayuni et al., 2026).

### QRIS Use and MSME Performance

QRIS is Indonesia's standardized QR code payment interface, which accommodates payments through compatible electronic money applications, e-wallets, and mobile banking services (Nurbayan

et al., 2025). Its potential advantages include easier payment acceptance, faster transaction processing, and more accessible transaction records (Nurhidayah et al., 2025). MSME performance in this study refers to self-reported financial and operational outcomes, including turnover, business development, cost efficiency, and profitability (Purnama Sari et al., 2025).

From the relative advantage perspective, operators who perceive greater benefits from QRIS may also report better business outcomes. (Utami, 2025) found a positive and significant relationship between QRIS adoption and MSME financial performance in Yogyakarta. (Saputra et al., 2026) also reported beneficial QRIS-related outcomes involving transaction efficiency, income growth, and financial management among MSMEs in Palu. However, (Akbar et al., 2026) found a nonsignificant direct relationship with business performance when transaction efficiency was included as a mediator. These findings indicate that the observed relationship can vary according to the outcome and model examined. Based on the expected benefits of QRIS, the following hypothesis is proposed:
$H_1$: QRIS use is positively associated with MSME performance in Medan.

### E-Wallet Use and MSME Performance

E-wallets provide application-based digital payment services that may offer flexibility, accessibility, and transaction convenience. They differ from QRIS in function: an e-wallet provides access to payment services, whereas QRIS provides a standardized QR payment interface (Tambunan et al., 2025). Consequently, an e-wallet can be used to complete a QRIS transaction, and the two may operate together within the same payment process (Nurhidayah et al., 2025).

Perceived usefulness and ease of use provide a basis for understanding why operators may value e-wallet services in their business activities (Davis, 1989; Venkatesh & Davis, 2000). Convenient payment options may facilitate transactions and support customer service, creating an expected positive relationship with reported business performance. (Aflagaly & Kusumowati, 2025) reported a significant relationship between e-wallet use and MSME financial performance in Malang. (Indah; et al., 2025) also found a positive and significant partial relationship between e-wallet use and transaction effectiveness in Merawang. Although transaction effectiveness differs from overall business performance, these findings support examining the business relevance of e-wallet services. Therefore, the following hypothesis is proposed:
$H_2$: E-wallet use is positively associated with MSME performance in Medan.

### Joint Relationship of QRIS and E-Wallet Use with MSME Performance

QRIS and e-wallets are interconnected components of digital payments. Including both variables in a single regression model allows their joint explanatory contribution to be assessed while estimating the association of each variable with performance after accounting for the other. (Rani & Desiyanti, 2024) reported a positive relationship between digital payments and MSME performance. (Indah; et al., 2025) also found that a model including QRIS and e-wallets was jointly significant in explaining transaction effectiveness.

These findings provide a basis for examining whether the two payment-related measures jointly explain variation in MSME performance in Medan. Joint model significance does not establish an interaction between the services or require both individual coefficients to be significant. Accordingly, the following hypothesis is proposed:
$H_3$: QRIS use and e-wallet use are jointly associated with MSME performance in Medan.

## Methodology

This study employed a quantitative associative approach using a cross-sectional survey to examine the relationships between QRIS use, e-wallet use, and MSME performance in Medan, North Sumatra, Indonesia. The research project was conducted from November 2025 to July 2026. Primary data were collected through an online questionnaire. The target population comprised MSMEs operating in Medan that had experience using QRIS and e-wallets. Respondents were selected through purposive sampling based on three criteria:

actively operating an MSME in Medan, having previously used both QRIS and e-wallets, and being willing to complete the questionnaire. The final sample consisted of 100 MSME operators from trading, culinary businesses, services, and creative industries. Because the study employed nonprobability sampling, the sample was not assumed to be statistically representative of all MSMEs in Medan. The questionnaire contained 24 statements, comprising eight items for each variable. Responses were measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The eight item scores were summed to obtain each variable's total score, yielding a theoretical range of 8–40.

QRIS use ($X_1$) was measured through respondents' perceptions of payment efficiency, security, ease of use, and transaction speed. The items addressed transaction recording, payment safety, payment errors, ease of payment acceptance, and service speed . E-wallet use ($X_2$) was measured through perceived flexibility, accessibility, transaction costs, and processing speed. Some accessibility items captured operators' assessments of customers' ease of accessing and using e-wallet applications. Both payment-related measures therefore primarily reflected perceived benefits of service use rather than actual transaction frequency or value. MSME performance (Y) was measured through self-reported outcomes concerning turnover, transaction activity, business development, customer growth, operating costs, expenditure control, record-related efficiency, and profitability. Several statements explicitly linked improvements to digital payment use. Accordingly, the measure represented perceived business performance rather than outcomes independently verified through financial statements.

Data were analyzed using SPSS. Descriptive statistics summarized respondents' business sectors and the distribution of variable scores. Instrument screening employed Pearson correlations between individual items and their respective variable totals. Item-total correlations were evaluated against a critical value of 0.197 for 100 respondents at the .05 significance level. Internal consistency was assessed using Cronbach's alpha, with values above 0.70 considered acceptable. These procedures provided evidence of item relationships and internal consistency, rather than a comprehensive assessment of construct validity. Regression diagnostics were conducted before hypothesis testing. Residual normality was assessed using the Kolmogorov–Smirnov test with Lilliefors correction. Multicollinearity was examined using tolerance and variance inflation factors, with tolerance above 0.10 and variance inflation factors below 10 used as screening criteria. Heteroskedasticity was assessed using the Glejser procedure, which regresses absolute residuals on the independent variables (Glejser, 1969). A significance level of .05 was applied to the diagnostic tests.

Multiple linear regression was used to examine the association of each payment-related variable with MSME performance while accounting for the other predictor. The model was specified as follows:

$$Y = \alpha + B_1 X_1 + B_2 X_2 + \varepsilon$$

In this equation, Y represents MSME performance, X1 represents QRIS use, X2 represents e-wallet use, $\alpha$ is the intercept, B1 and B2 are unstandardized regression coefficients, and $\varepsilon$ is the error term. Individual regression coefficients were evaluated using two-sided t-tests at the .05 significance level. The overall F-test assessed whether the two predictors jointly explained variation in MSME performance. $R^2$ and adjusted $R^2$ were used to summarize the model's explanatory power. Overall model significance was distinguished from the significance of individual coefficients and did not imply an interaction between QRIS and e-wallet use. Given the cross-sectional design and self-reported measures, the findings were interpreted as associations rather than causal effects.

# Results and Discussions

## Respondent Characteristics and Descriptive Statistic

The study involved 100 MSME operators in Medan. Culinary businesses accounted for 33% of respondents, followed by trading businesses (30%), services (22%), and creative industries (15%). Descriptive statistics for the three study variables are presented in Table 1.

**Table 1. Descriptive Statistics**

| Variable | N | Minimun | Maximum | Mean | Standard Deviation |
|---|---|---|---|---|---|
| QRIS | 100 | 16 | 40 | 35.06 | 5.617 |
| E-wallet use | 100 | 16 | 40 | 35.12 | 5.282 |
| MSME performance | 100 | 16 | 40 | 33.29 | 5.924 |

Source: Primary data processed using SPSS (2026).

The mean scores for QRIS use and e-wallet use were similar, while the mean score for MSME performance was lower. Each variable comprised eight items, with a theoretical total score ranging from 8 to 40.

## Instrument Validity and Reliability

Instrument screening examined item-total correlations and internal consistency. Table 2 summarizes the results for each variable.

**Table 2. Item-Total Correlations and Reliability**

| Variable | Number of Items | Item-Total Correlation Range | Cronbach's Alpha |
|---|---|---|---|
| QRIS use | 8 | 0.625–0.891 | 0.926 |
| E-wallet use | 8 | 0.677–0.845 | 0.911 |
| MSME performance | 8 | 0.770–0.899 | 0.927 |

Source: Primary data processed using SPSS (2026).

All item-total correlations exceeded the critical value of 0.197, meeting the item-screening criterion specified in the methodology. Cronbach's alpha values exceeded 0.70 for all variables, indicating satisfactory internal consistency. These findings supported the use of the composite scores in the regression analysis.

## Regression Diagnostics

Residual normality, multicollinearity, and heteroskedasticity were assessed before interpreting the regression results. The diagnostic results are summarized in Table 3.

**Table 3. Regression Diagnostic Results**

| Diagnostic | Variable | Result |
|---|---|---|
| Kolmogorov–Smirnov test with Lilliefors correction | Regression residuals | D = 0.085; p = .070 |
| Multicollinearity | QRIS use | Tolerance = 0.622; VIF = 1.607 |
| Multicollinearity | E-wallet use | Tolerance = 0.622; VIF = 1.607 |
| Glejser test | QRIS use | p = .675 |
| Glejser test | E-wallet use | p = .700 |

Source: Primary data processed using SPSS (2026).

The residual normality test was not significant at the .05 level, indicating no statistically significant departure from normality under this test. Both predictors had tolerance values above 0.10 and VIF values below 10, indicating no severe multicollinearity. The Glejser tests were also nonsignificant for both predictors, providing no evidence of heteroskedasticity under the specified procedure.

## Multiple Regression and Hypothesis Testing

Multiple linear regression examined the relationship between each payment-related variable and MSME performance while accounting for the other predictor. Table 4 presents the individual coefficient estimates and hypothesis decisions.

**Table 4. Regression Coefficients and Hypothesis Testing**

| Hypothesis | Relationship | B | Standard Error | t | p | Decision |
|---|---|---|---|---|---|---|
| H1 | QRIS use → MSME performance | 0.156 | 0.101 | 1.553 | .124 | Not supported |
| H2 | E-wallet use → MSME performance | 0.639 | 0.107 | 5.966 | < .001 | Supported |

Source: Primary data processed using SPSS (2026).
Note: B denotes an unstandardized regression coefficient. Dependent variable: MSME performance.

The estimated regression equation was: $Y = 5.380 + 0.156X1 + 0.639X2$

QRIS use had a positive but statistically nonsignificant association with MSME performance after accounting for e-wallet use. Therefore, H1 was not supported. E-wallet use had a positive and statistically significant association with MSME performance after accounting for QRIS use, supporting H2.

### Overall Model and Explanatory Power

The overall F-test assessed the joint explanatory contribution of QRIS use and e-wallet use. Table 5 presents the model summary.

**Table 5. Overall Model Assessment**

| Statistic | Value |
|---|---|
| R | 0.671 |
| $R^2$ | 0.450 |
| Adjusted $R^2$ | 0.439 |
| F | 39.683 |
| Degrees of freedom | 2, 97 |
| Model significance | $p < .001$ |
| $H_3$ decision | Supported |

Source: Primary data processed using SPSS (2026).

The overall regression model was statistically significant, supporting H3. QRIS use and e-wallet use jointly explained 45.0% of the variation in reported MSME performance. The adjusted $R^2$ was 0.439, while 55.0% of the variation remained unexplained by the model. Overall model significance indicates that at least one predictor contributed to explaining performance; it does not imply that both individual coefficients were significant.

## Discussions

### QRIS Use and MSME Performance

The findings indicate that QRIS use did not show a statistically significant association with MSME performance after accounting for e-wallet use. This result suggests that favorable perceptions of QRIS benefits were insufficient to explain additional variation in reported performance within the specified model. It does not establish that QRIS offers no business benefits or that its use should be discontinued. From the Diffusion of Innovations perspective, perceived relative advantage helps explain why operators may value a payment innovation (Nasib et al., 2024). However, recognizing advantages such as convenience and speed does not necessarily correspond to higher turnover or profitability. The Technology Acceptance Model similarly explains beliefs underlying technology acceptance rather than guaranteeing improved financial outcomes (Davis, 1989; Ma & Liu, 2011). The present finding therefore distinguishes perceived payment benefits from the broader business outcomes assessed in this study (Djohan et al., 2025).

This result differs from (Tirtayasa et al., 2025), who reported a positive relationship between QRIS adoption and MSME financial performance in Yogyakarta. (Saputra et al., 2026) also reported beneficial QRIS-related outcomes involving transaction efficiency, income growth, and financial management in Palu. Differences in measurement, business settings, and model specification may contribute to these contrasting findings. In particular, the present study assessed QRIS while simultaneously accounting for e-wallet use. The finding is consistent with (Indah; et al., 2025), who reported a nonsignificant partial relationship between QRIS and transaction effectiveness in Merawang. (Akbar et al., 2026) also found a nonsignificant direct relationship between QRIS adoption and performance when transaction efficiency was included as a mediator. Their study identifies an operational mechanism that could be examined in future research. However, the present analysis did not test mediation and cannot establish transaction efficiency as the explanation for its QRIS result.

## E-Wallet Use and MSME Performance

E-wallet use was positively associated with MSME performance after accounting for QRIS use. Operators who reported more favorable assessments of e-wallet flexibility, accessibility, affordability, and processing speed also tended to report better business outcomes (Singh et al., 2024). This finding supports the proposed relationship while remaining limited to the perceptions captured by the questionnaire. The result is compatible with the perceived usefulness and ease-of-use perspective of the Technology Acceptance Model (Venkatesh & Davis, 2000). Payment services perceived as convenient and useful may fit everyday business activities and support customer transactions (Hou et al., 2024). The relative advantage perspective also provides a basis for understanding why operators may value these services (Azman et al., 2026). Nevertheless, the study does not demonstrate that these perceptions caused improvements in business performance.

The finding agrees with (Aflagaly & Kusumowati, 2025), who reported a significant relationship between e-wallet use and MSME financial performance in Malang. It is also consistent with (Indah; et al., 2025), who found a positive relationship between e-wallet use and transaction effectiveness. The present study extends this contextual evidence to MSMEs in Medan using a performance measure that includes financial and operational outcomes. A possible explanation is that operators perceive e-wallet applications as convenient for meeting payment needs. However, customer preferences, promotional incentives, and actual transaction activity were not directly measured. These factors should therefore be treated as potential explanations for future investigation. The finding also does not establish that e-wallets are superior to QRIS, because the services can participate in the same transaction and their coefficients were not formally compared.

## Joint Relationship of QRIS and E-Wallet Use with MSME Performance

The overall model indicates that the payment-related measures jointly contributed to explaining variation in reported MSME performance. This finding is consistent with the broader positive relationship between digital payments and business performance reported by (Rani & Desiyanti, 2024)(Hasibuan, 2025)(Razaq et al., 2024). It also aligns with the jointly significant model reported by (Indah; et al., 2025), although their study examined transaction effectiveness rather than the broader performance outcome used here. The joint result should be distinguished from the individual findings. Overall model significance does not mean that both predictors independently contributed significant explanatory information. Nor does it establish a complementary or synergistic relationship between QRIS and e-wallets, because no interaction term was tested. The contribution of this study lies in examining the conditional relationships of two interconnected payment components within the same model among MSMEs in Medan (Sindy et al., 2026). The findings suggest that assessments of digital payment benefits should be evaluated alongside business outcomes rather than assumed to translate uniformly into improved performance.

## Practical Implications and Study Limitations

For MSME operators, the findings encourage evaluating payment services according to business requirements and customer transaction needs. Operators may consider payment convenience,

service reliability, transaction costs, and the usefulness of transaction records when managing their payment options. Payment providers and business support institutions can complement assistance with basic financial management training, including transaction reconciliation and cash-flow monitoring. This recommendation is consistent with (Akbar et al., 2026), who emphasize using QRIS transaction information for bookkeeping and financial monitoring. These practices are recommendations rather than mechanisms established by the present analysis. Several limitations qualify the findings. The purposive online sample limits generalizability and may underrepresent operators with less internet access, consistent with concerns about coverage and selection bias in web surveys (Bethlehem, 2010). The cross-sectional design also limits causal interpretation (Lubis et al., 2023). The payment measures primarily reflect perceived benefits rather than transaction frequency or value. Some e-wallet items assess customers' experiences indirectly through business operators, while several performance items explicitly attribute improvements to digital payments (Nasib et al., 2023). These measurement features warrant caution because collecting predictor and outcome assessments from the same respondents may introduce common-method bias (Podsakoff et al., 2003). Such bias is a potential limitation rather than a problem demonstrated by the present analysis.

Future research should distinguish actual payment activity, perceived service benefits, and independently measured business performance. Combining questionnaire responses with transaction records or financial statements could reduce reliance on a single measurement source, consistent with methodological recommendations for addressing common-method bias (Podsakoff et al., 2003). Longitudinal observations could help examine temporal ordering, while additional analysis could investigate operational mechanisms and relevant business characteristics.

## Conclusions

This study examined the relationships between QRIS use, e-wallet use, and MSME performance in Medan, Indonesia. E-wallet use was positively and significantly associated with reported MSME performance after accounting for QRIS use. QRIS use showed a positive but statistically nonsignificant association after accounting for e-wallet use. The overall regression model was significant, indicating that the two payment-related measures jointly contributed to explaining variation in reported performance.

These findings provide contextual evidence that perceptions of interconnected digital payment services can have different conditional relationships with business outcomes. The nonsignificant QRIS result does not establish that the service offers no benefits, while the significant e-wallet result does not demonstrate its superiority over QRIS. MSME operators should evaluate payment options according to business requirements and customer transaction needs, supported by appropriate financial management practices.

The conclusions remain limited by the purposive sample, cross-sectional design, and reliance on perceived payment benefits and self-reported performance. Future research should use more distinct measures, transaction records, and longitudinal observations to clarify how digital payment services relate to MSME business outcomes.

## References

Abdennebi, H. Ben. (2023). M-Banking Adoption From The Developing Countries Perspective: A Mediated Model. *Digital Business*, *3*(2), 100065. Https://Doi.Org/Https://Doi.Org/10.1016/J.Digbus.2023.100065

Aflagaly, D., & Kusumowati, D. (2025). *Pengaruh E-Wallet Dan Digital Marketing Terhadap Kinerja Keuangan Umkm*. *7*(1), 36–43.

Akbar, J. S., Wisdawati, R. A., & Irdam, F. A. (2026). The Mediating Role Of Transaction Efficiency Between Qris Adoption And Msme Performance In. *Business, Entrepreneurship, And Management Journal*, *05*(01), 275–288.

Amirullah, N., & Syakur, R. M. (2025). *The Influence Of Qris And E-Wallet Adoption On Transaction Efficiency And Profitability Of Msmes In Makassar City*. *7*(2), 178–184.

Arifin, A. Z. (2025). *Fintech Adoption For Msmes Sustainability*. *3*(1), 516–526.

Ayuni, T. W., Khairani, R., Tambunan, D., Sajaya, M., & Tanady, D. (2026). A Performance Model For Msmes Based On Access To Financing And Its Impact On Community Welfare In Deli Serdang Regency. *Journal Of Business Integration And Competitive*, *2*(2), 47–59. Https://Doi.Org/10.64276/Jobic.V2i2.83

Azman, N. S., Hassim, A. A., & Al-Amrani, S. N. (2026). Consumer And Commercial Practices In International Business From An Economic Perspective. *Journal Of Business Integration And Competitive*, *2*(2), 1–15. Https://Doi.Org/10.64276/Jobic.V2i2.74

Bethlehem, J. (2010). Selection Bias In Web Surveys. *International Statistical Review*, *78*(2), 161–188. Https://Doi.Org/10.1111/J.1751-5823.2010.00112.X

Bhastary, M. D., Astuti, L., Silvana, E., Yuanda, F., Rico, R., & Antonio, S. (2025). Analisis Strategi Pemasaran Pada Toko Sembako Zhafa Di Kota Batam. *Applied Multidisciplinary Science –*, *1*(2), 61–77. Https://Doi.Org/10.64276/Ams.V1i2.56

Davis, F. D. (1989). Perceived Usefulness, Perceived Ease Of Use, And User Acceptance Of Information Technology. *Mis Quarterly: Management Information Systems*, *13*(3), 319–339. Https://Doi.Org/10.2307/249008

Djohan, D., Budiman, I., Nasib, Razaq, M. R., & Fathoni, M. (2025). Fintech , Digital Branding , And Customer Engagement To Enhance Gayo Arabica Coffee Smes ' Performance. *Jurnal Ilmiah Manajemen Kesatuan*, *13*(5), 3349–3360. Https://Doi.Org/10.37641/Jimkes.V13i5.3540

Ginting, W. A., Pangemanan, S. A., & Nasution, S. A. (2026). Optimizing Msme-Based Financial Information Through Qris Synergy And Hr Competence. *Journal Of Finance Integration And Business Independence*, *2*(1), 27–38. Https://Doi.Org/10.64276/Jofibi.V2i1.88

Gunawan, A., Fatikasari, A. F., & Putri, S. A. (2023). The Effect Of Using Cashless (Qris) On Daily Payment Transactions Using The Technology Acceptance Model. *Procedia Computer Science*, *227*, 548–556. Https://Doi.Org/10.1016/J.Procs.2023.10.557

Hardiansyah, H., Amelia, R., Harianto, A., & Syahlina, M. (2025). Digital Transformation And Its Impact On Production Improvement : A Case Study At Pt Gajah Mada Plastik. *Journal Of Business Integration And Competitive*, *1*(2), 108–115. Https://Doi.Org/Https://Doi.Org/10.64276/Jobic.V1i2.21

Harianto, A., Azman, N. S., Fadila, Z., & Ayuni, T. W. (2025). Enhancing Financial Decision-Making In Smes : The Role Of Accounting Systems And Human Resource Competence In North Medan Impact Of Accounting System Implementation On Financial Decision-Making. *Journal Of Business Integration And Competitive*, *2*(1), 1–7. Https://Doi.Org/10.64276/Jobic.V2i1.25

Harianto, A., Fali, I. M., Rivai, A., Ayuni, T. W., & Khairani, R. (2025). Behavioral And Knowledge-Based Determinants Of Tax Compliance : A Study On Smes In North Medan , Indonesia. *Journal Of Finance Integration And Business Independence*, *1*(2), 1–7. Https://Doi.Org/10.64276/Jofibi.V1i2.36

Hasibuan, L. H. (2025). Strategi Promosi Dan Dampaknya Terhadap Keputusan Pembelian Konsumen : Studi Empiris Pada Pro Barbershop Medan. *Applied Multidisciplinary Science*, *1*(2), 99–110. Https://Doi.Org/10.64276/Ams.V1i2.59

Hou, A., Djohan, D., & Hastuty, W. (2024). The Influence Of Business Networks And Perception Of Product Quality On The Competitive Advantage Of Sme Products In Langkat. *Journal Of Finance Integration And Business Independence*, *1*(1), 1–8. Https://Doi.Org/Https://Doi.Org/10.64276/Jofibi.V1i1.7

Indah;, Novianti, A., Ulhusna, D., Ananda, A., & Bahri, A. (2025). *Jurnal Riset Ekonomi Dan Bisnis*. *18*(2), 198–206.

Kallmuenzer, A., Mikhaylov, A., Chelaru, M., & Czakon, W. (2025). In Small And Medium - Sized Enterprises. *Review Of Managerial Science*, 2011–2038. Https://Doi.Org/10.1007/S11846-024-00744-2

Katijah, S., Amelia, R., & Gani, A. (2026). Do Facebook Testimonials Increase Consumer Trust ? A Study Of Khaira Rumah Jahit. *Applied Multidisciplinary Science*, *1*(3), 64–74. Https://Doi.Org/10.64276/Ams.V1i3.84

Khairani, R., Munthe, H., Chaniago, S., & Handayani, C. (2026). When Digital Finance Is Not Enough : Digital Capability And Msme Business Resilience. *Journal Of Finance Integration And*

*Business Independence*, *2*(1), 54–63. Https://Doi.Org/10.64276/Jofibi.V2i1.90

Khairani, R., Octora, T., Syah, D., & Ovami, D. C. (2025). How Digital Financial Literacy Shapes Sustainable Economic Performance : Evidence From Rural Msme. *Applied Multidisciplinary Science*, *1*(2), 50–60. Https://Doi.Org/10.64276/Ams.V1i2.55

Khairani, R., Silaban, P., & Edward, Y. R. (2025). Digital Financial Literacy And Inclusion As Determinants Of Economic Sustainability Among Rural Msmes. *Proceeding Of The International Conference On Management, Entrepreneurship, And Business*, *2*(2), 463–469.

Khairani, R., Silaban, P., & Edward, Y. R. (2026). Digital Financial Literacy And Inclusion For Sustainable Economic Performance: The Mediating Role Of Technology Adoption. *International Journal Of Advanced And Applied Sciences*, *13*(5), 133–144. Https://Doi.Org/Https://Doi.Org/10.21833/Ijaas.2026.05.013

Khairani, R., Tantono, E. A., Anderson, R., Munthe, H., & Purba, P. Y. (2025). Unlocking The Potential Of Financial Inclusion, E-Commerce, And Fintech To Boost Sme Performance. *Jurnal Ilmiah Manajemen Kesatuan*, *13*(5), 3565–3576. Https://Doi.Org/10.37641/Jimkes.V13i5.3786

Khairani, R., Tantri, O., & Putri, S. (2025). The Contribution Of E-Commerce And Financial Management To Enhancing Msme Performance In Indonesia. *Journal Of Business Integration And Competitive*, *2*(1), 50–62. Https://Doi.Org/10.64276/Jobic.V2i1.30

Khairumi, D., Amelia, R., Martin, Siboro, L. B., & Bhastary, M. D. (2025). Strengthening Sales Through Brand Image And Product Quality : An Empirical Study At Ud . Umega Roti Kacang. *Journal Of Business Integration And Competitive*, *1*(2), 55–69.

Kindermann, B., Vera, C., Schmidt, H., Fengel, F., & Strese, S. (2024). Expanding The Boundaries Of Digital Orientation Research : Scale Development And Validation. *Journal Of Business Research*, *185*(July), 114895. Https://Doi.Org/10.1016/J.Jbusres.2024.114895

Lubis, Z., Junaidi, Effendi, I., Nasib, & Fadli, A. (2023). The Model For Determining The Success Of The Partnership Program In Improving The Performance Of Smes Fostered Partners Pt. Perkebunan Nusantara Iii. *Quality - Access To Success*, *24*(192), 35–43. Https://Doi.Org/10.47750/Qas/24.192.05

Ma, Q., & Liu, L. (2011). The Technology Acceptance Model. *Advanced Topics In End User Computing, Volume 4*, *January 2005*. Https://Doi.Org/10.4018/9781591404743.Ch006.Ch000

Mujalli, A., Jibran, M., Wani, G., Almgrashi, A., & Khormi, T. (2025). Journal Of Open Innovation : Technology , Market , And Complexity Investigating The Factors Affecting The Adoption Of Cloud Accounting In Saudi Arabia ' S Small And Medium-Sized Enterprises ( Smes ). *Journal Of Open Innovation: Technology, Market, And Complexity*, *10*(2), 100314. Https://Doi.Org/10.1016/J.Joitmc.2024.100314

Nasib, Harianto, E. N. R. K. A. F. A., Albert, M. R. R., Martin, D. T., Satrianny, I. P., Hou, M. D. B. D. D. R. A. A., & Tamba, Z. R. D. D. P. A. I. F. U. (2024). *Mengenal Bisnis 5.0*. Pt. Pena Persada Kerta Utama.

Nasib, Pranata, S. P., Tampubolon, A., Novirsari, E., Amelia, R., Pasaribu, D. S. O., Theodora, E. M., Hou, A., Ginting, N. M. B., Rivai, A., Anggusti, M., Pasaribu, D. D., & Banuari, N. (2023). *Bisnis Dasar Dan Etika Dalam Berbisnis*. Mtu Press.

Normawati, R. A., Santoso, E. E., & Latifah, N. (2024). Digital Financial Literacy As An Antecedent To Financial Inclusion And Msme Performance. *Sentralisasi*, *14*(1), 45–70. Https://Doi.Org/10.33506/Sl.V14i1.3761

Nurbayan, K., Amelia, R., Nazah, K., Fathoni, M., & Hernawati, M. (2025). Unlocking Buyer Intent : How The Marketing Mix Shapes Purchasing Decisions At Ummah Cahaya Restaurant. *Journal Of Business Integration And Competitive*, *1*(2), 18–30. Https://Doi.Org/Https://Doi.Org/10.64276/Jobic.V1i2.14

Nurhidayah, A., Amelia, R., Andi, Y., Kosasih, H., & Chaniago, S. (2025). Innovative Marketing Strategies In Culinary Msmes : A Case Study Of Warkop Agam Medan. *Journal Of Business Integration And Competitive*, *1*(2), 11–17. Https://Doi.Org/Https://Doi.Org/10.64276/Jobic.V1i2.13

Podsakoff, P. M., Mackenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common Method Biases In Behavioral Research: A Critical Review Of The Literature And Recommended Remedies.

*Journal Of Applied Psychology*, *88*(5), 879–903. Https://Doi.Org/10.1037/0021-9010.88.5.879

Purnama Sari, Ratih Amelia, Jessica Andre, Tina Linda, & Ahmad Fadli. (2025). A Critical Analysis Of Marketing Strategies In Enhancing The Competitive Advantage Of Cafe Pondok Rezeki Deli Tua. *Journal Of Business Integration Competitive*, *1*(2), 70–83. Https://Doi.Org/10.64276/Jobic.V1i2.18

Ramayanti, R., Azhar, Z., & Nik Azman, N. H. (2025). Factors Influencing Intentions To Use Qris: A Two-Staged Pls-Sem And Ann Approach. *Telematics And Informatics Reports*, *17*(July 2024), 100185. Https://Doi.Org/10.1016/J.Teler.2024.100185

Rani, G. M., & Desiyanti, R. (2024). Pengaruh Literasi Keuangan, Inklusi Keuangan Dan Digital Payment Terhadap Kinerja Umkm Makanan & Minuman Di Kota Padang. *Ekomabis: Jurnal Ekonomi Manajemen Bisnis*, *5*(02), 161–174. Https://Doi.Org/10.37366/Ekomabis.V5i02.1403

Razaq, M. R., Robin, Harianto, A., Fathoni, M., & Nasib. (2024). Analysis Of Factors Affecting The Risk Of Business Failure Of Food Sector Smes In Binjai City. *Primanomics : Jurnal Ekonomi & Bisnis*, *22*(3), 1–14. Https://Doi.Org/Https://Doi.Org/10.31253/Pe.V22i3.3222

Sabrina, L., Inayah, N., & Syahbudi, M. (2026). Qris Dan Fenomena Cashless Society : Efisiensi Pembayaran Digital Terhadap Perspektif Gen Z. *Owner: Riset & Jurnal Akuntansi*, *10*, 509–526.

Sahin, I., Rogers, F., Rogers, F., & Rogers, F. (2006). Detailed Review Of Rogers ' Diffusion Of Innovations Theory And Educational Technology-Related Studies Based On Rogers '. *The Turkish Online Journal Of Educational Technology*, *5*(2), 14–23.

Santoso, B., & Meera, A. K. M. (2017). Strategy Of Financial Inclusion Development In Indonesia. *Share: Jurnal Ekonomi Dan Keuangan Islam*, *6*(1), 53. Https://Doi.Org/10.22373/Share.V6i1.1520

Saputra, M. R., Kadang, J., & Risendy, R. (2026). The Impact Of Qris On Transaction Efficiency , Income Growth , And Financial Management In Palu Msmes. *Manajemen Dan Bisnis*, *25*(1), 214–223.

Sindy, Winnie, Purba, E. M. B., Khairani, R., & Nasib. (2026). Qris, P2p Lending, And Msme Sustainability: The Mediating Role Of Capital Structure. *International Journal Of Accounting, Management, Economics And Social Sciences*, *4*(2), 687–700. Https://Doi.Org/Https://Doi.Org/10.61990/Ijamesc.V4i2.755 E-Issn

Singh, P., Dave, T., & Joshi, A. B. (2024). Moderating Role Of Digital Consumer Protection In Impacting The Intention To Use Digital Financial Services. *International Review Of Management And Marketing*, *14*(5), 222–234. Https://Doi.Org/10.32479/Irmm.16842

Tambunan, D., Harefa, M. H., & Wibowo, M. C. (2025). Driving Repurchase Intention In E-Commerce : The Synergistic Role Of Promotional Innovation And User Experience Among Lazada Consumers. *Journal Of Business Integration And Competitive*, *2*(1), 31–39. Https://Doi.Org/10.64276/Jobic.V2i1.28

Tirtayasa, S., Khair, H., & Tusakdiah, H. (2025). The Influence Of Brand Awareness On Purchase Decision Mediated By Purchase Interest On Cosmetic Products Online In Medan City. *Journal Of Business Integration And Competitive*, *1*(2), 125–140. Https://Doi.Org/Https://Doi.Org/10.64276/Jobic.V1i2.23

Utami, N. (2025). Adopsi Pembayaran Digital Melalui Qris Dan Dampaknya Di Daerah Istimewa Yogyakarta. *Jurnal Transaksi*, *17*(1), 1–13.

Venkatesh, V., & Davis, F. D. (2000). Theoretical Extension Of The Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science*, *46*(2), 186–204. Https://Doi.Org/10.1287/Mnsc.46.2.186.11926

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User Acceptance Of Information Technology: Toward A Unified View. *Mis Quarterly: Management Information Systems*, *27*(3), 425–478. Https://Doi.Org/10.2307/30036540

Yosefa, B. S., Lestari, E., & Hidayat, I. (2026). Jurnal Riset Mahasiswa Ekonomi ( Ritmik ) Pengaruh Literasi Keuangan Dan E-Wallet Terhadap Perilaku Konsumtif Pada Mahasiswa. *Jurnal Riset Mahasiswa Ekonomi (Ritmik)*, *8*(1), 51–58.