

## THE IMPACT OF E-WALLETS ON DIGITAL FINANCE IN INDONESIA: EVIDENCE FROM GOOGLE TRENDS 2020-2024

Rini Larasati Irawan<sup>1</sup>, Tri Lestari<sup>2</sup>, Elmira Siska<sup>3</sup>, Meri Tamara<sup>4</sup>, Siti Balqisz Martitza<sup>5</sup>

<sup>1,2,3,4,5</sup>Management, Universitas Bina Sarana Informatika, Indonesia

E-mail: [rini.lwn@bsi.ac.id](mailto:rini.lwn@bsi.ac.id); [trilestari.tle@bsi.ac.id](mailto:trilestari.tle@bsi.ac.id); [elmira.ems@bsi.ac.id](mailto:elmira.ems@bsi.ac.id); [mery.tamara412@gmail.com](mailto:mery.tamara412@gmail.com); [balqisz180704@gmail.com](mailto:balqisz180704@gmail.com)

### ABSTRACT

This study examines the influence of e-wallets on the transformation of digital finance in Indonesia by leveraging Google Trends data from 2020 to 2024. Public interest in e-wallets serves as the independent variable, while the transformation of digital finance is proxied by public interest in QRIS (Quick Response Code Indonesian Standard) using the Interest Over Time (IOT) feature. Employing a quantitative explanatory approach, weekly data comprising 262 observations were analysed through Ordinary Least Squares (OLS) simple linear regression. The findings reveal that e-wallets exert a positive and significant effect on QRIS, with a regression coefficient of 0.212 and a significance level of 0.001 ( $<0.05$ ). However, the  $R^2$  value is only 0.042, indicating that e-wallets account for merely 4.2% of the variation in QRIS while other factors outside the model drive the remaining 95.8%. This study offers methodological novelty by using Google Trends behavioural big data as an alternative indicator of public attention, providing a real-time perspective beyond conventional transaction reports or surveys. The results imply that while e-wallets function as a catalyst, broader determinants such as online shopping behaviour, the number of QRIS merchants, financial literacy, and regulatory support play a more dominant role in advancing Indonesia's digital finance transformation, and they suggest that regulators can design more effective QRIS promotion strategies by leveraging the popularity of e-wallets and that industry players can enhance integration and incentives to accelerate adoption.

**Key words:** Digital Finance Transformation; QRIS; e-Wallet; Google Trends; Regression

### INTRODUCTION

The digital financial transformation in Indonesia has emerged as one of the government's strategic priorities in advancing national financial inclusion. Bank Indonesia introduced the Quick Response Code Indonesian Standard (QRIS) as the monetary authority in 2019, to consolidate multiple payment codes into a single national standard (Herlina et al., 2025; Yuniarti & Ernawati, 2023). Designed under the principle of *CEMUMUAH*—an acronym for *Cepat, Mudah, Murah, Aman, Handal* (Fast, Easy, Cheap, Safe, Reliable)—QRIS facilitates more efficient non-cash transactions. Its implementation marks a milestone in simplifying consumer payments and enabling micro, small, and medium enterprises (MSMEs) to connect with the broader digital financial ecosystem. Since its launch, QRIS adoption has accelerated significantly, with millions of merchants across Indonesia now integrated into the system (Lubis, 2025; Murti et al., 2024; Zaky & Harahap, 2025).

Parallel to this development, the rise of e-wallets has been equally transformative. Digital payment platforms such as GoPay, OVO, Dana, and ShopeePay have become integral to everyday financial transactions, particularly among Millennials and Generation Z. E-wallets offer users convenience through easy top-ups, attractive promotional features, and integration with various digital services, including online transportation, e-commerce, and bill payments. According to data from the Indonesian Internet Service Providers Association (APJII), more than 70% of internet users in Indonesia have utilized e-wallet services for financial transactions. This indicates that e-wallets function as digital payment tools and as drivers of cultural shifts toward a more digital lifestyle (Kusumawardhani & Purnaningrum, 2021; Muhammad Basri & Muarif Leo, 2023).

The relationship between e-wallet adoption and QRIS integration is deeply interconnected, as most digital wallets in Indonesia are now compatible with the QRIS framework. This interoperability allows users to transact with various merchants using a single QR code, thereby expanding the reach of the digital payment ecosystem and generating *network externalities*—where increased e-wallet adoption accelerates QRIS diffusion among consumers and businesses alike. Consequently, e-wallets catalyze Indonesia's digital financial transformation (Alicia & Dewi, 2024; Herlina et al., 2025; Syawal et al., 2021; Yuniarti & Ernawati, 2023).

Despite extensive institutional reports from Bank Indonesia detailing the number of merchants and transaction values, public attention toward QRIS remains underexplored. While statistical data highlight adoption growth, they fail to capture the dynamics of public awareness and interest formation. In the digital era, these dynamics can be observed through online search behavior. Hence, Google Trends offers a valuable alternative data source, providing real-time insights into public search patterns for keywords such as “e-wallet” and “QRIS” (Kharis et al., 2024)

Google Trends presents data as *Interest Over Time (IOT)*, reflecting the relative volume of searches. This study's searches for “e-wallet” represent public interest in digital payment instruments, while “QRIS” is a proxy for national digital financial transformation. This approach introduces a novel analytical perspective, diverging from previous studies primarily relied on transaction records or conventional surveys. Focusing on digital

behavioral data, this research positions public attention as critical in explaining Indonesia's ongoing financial digitalization.

Furthermore, this study carries practical significance. Understanding how public interest in e-wallets influences QRIS adoption can help policymakers design more effective promotional strategies, enable financial technology companies to optimize product integration, and allow scholars to enrich existing literature with a behavioral big data perspective. Therefore, this research contributes to theoretical development and the practical advancement of Indonesia's digital financial ecosystem.

Based on the preceding discussion, the research problem is formulated as follows:

*Does public interest in e-wallets influence the digital financial transformation represented by QRIS in Indonesia from 2020 to 2024?*

## **METHOD**

This study adopts a quantitative explanatory research design, utilizing secondary data from Google Trends covering the period from January 2020 to December 2024, with 262 weekly observations. The independent variable (X) represents *public interest in e-wallets*, measured through the Google Trends search index. In contrast, the dependent variable (Y) represents *digital financial transformation*, proxied by public interest in QRIS (Quick Response Code Indonesian Standard) using the *Interest Over Time (IOT)* feature.

This methodological approach aligns with Hanggoro et al. (2025), who examined the impact of e-wallet adoption on digital financial literacy among residents of Depok City and identified a significant contribution of e-wallet usage to enhancing digital financial awareness—thereby supporting its use as the independent variable in this study. Similarly, Badrawani (2021) evaluated digital payment policies and found that perceptions of Bank Indonesia's regulatory policies and pandemic-related risks influenced the intention to use QRIS, highlighting the importance of regulatory variables beyond mere public interest in e-wallets. Furthermore, Hidayanti and Ariani (2025) demonstrated that students' comprehension and awareness levels significantly affect their acceptance of QRIS as a digital payment tool. Complementary findings from Saputri (Saputri, 2020) and Syawal et al. (Syawal et al., 2021) indicate that perceived ease of use and system effectiveness are strong determinants of QRIS adoption in society. In addition, a systematic literature review by Hidayanti and Ariani (Hidayanti & Ariani, 2025) emphasized security, trust, and user perception as essential determinants of QRIS adoption.

These studies substantiate the methodological rationale for employing Google Trends as a data source to measure public interest in e-wallets and QRIS. This approach is consistent with the explanatory quantitative framework. Recent literature affirms the critical roles of behavioral factors and external influences in driving Indonesia's digital financial transformation (Muhammad Basri & Muarif Leo, 2023).

## **RESULTS AND DISCUSSION**

The simple linear regression analysis results demonstrate that the e-wallet variable exerts a positive and statistically significant effect on digital financial transformation, as represented by public interest in QRIS. The regression coefficient ( $\beta = 0.212$ ,  $p = 0.001 < 0.05$ ) indicates that increases follow increases in public interest toward e-wallets on Google Trends in public searches for QRIS. Practically, every one-point increase in the e-wallet search index corresponds to a 0.212-point increase in the QRIS search index. This finding confirms that the popularity of e-wallets serves as an initial catalyst in strengthening public awareness of the national digital payment standard.

However, the coefficient of determination ( $R^2 = 0.042$ ) suggests that e-wallets explain only 4.2% of the variation in QRIS-related searches. In comparison, the remaining 95.8% is influenced by other factors not included in the model. These may include the growth of online shopping behavior, the expansion of QRIS-registered merchants supported by Bank Indonesia, digital literacy levels, and government policies promoting a cashless society. This aligns with the findings of Lutvi Yanti et al. (Yanti et al., 2025), who reported that financial literacy and QRIS usage intensity significantly affect payment transactions among Generation Z, as well as Kusumayani (Kusumayani et al., 2023), who identified perceived ease of use and perceived usefulness as key determinants of QRIS adoption.

### **The Influence of E-Wallets on QRIS Adoption**

Although the relationship between e-wallets and QRIS is statistically significant, e-wallets cannot be considered the dominant factor in explaining Indonesia's digital financial transformation. This outcome supports the theory of network externalities, which posits that the value of a networked system increases as the number of users and merchants grows. The popularity of e-wallets familiarizes the public with digital transaction ecosystems; however, the acceleration of QRIS adoption still depends on broader external factors. Hanggoro (Hanggoro et al., 2025) found that e-wallet adoption positively contributes to public digital financial literacy, while Sundaris (2025) demonstrated that e-wallets and e-commerce channels jointly promote MSME digital transformation. These findings reinforce that e-wallets facilitate public readiness to adopt QRIS, yet sustained adoption requires systemic ecosystem support.

### **Theoretical and Methodological Implications**

The findings also underscore the value of using digital behavioral data, such as Google Trends, as an alternative indicator of public attention. Whereas prior research typically relied on transactional data or conventional surveys, the Interest Over Time (IOT) approach offers insight into how public interest develops and fluctuates over time.

This is consistent with Koswara (2025), who used Google Trends to map competitive dynamics among e-wallet platforms (GoPay, OVO, and DANA), demonstrating that search volume reflects market attractiveness and inter-platform competition. Consequently, the present study provides empirical evidence of the relationship between e-wallet interest and QRIS adoption. It contributes to the growing literature on using behavioral big data in digital finance research (Asep Koswara, 2025).

**Tabel 1. Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.205	0.042	0.038	±15.47	0.423

**Tabel 2. ANOVA**

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	2734.6	1	2734.6	11.41	.001
Residual	62306.5	260	239.6		
Total	65041.1	261			

**Tabel 3. Coefficients**

Model	B	Std. Error	Beta	t	Sig.	95% CI Lower	95% CI Upper
Constant	7.600	1.529	—	4.972	.000	4.590	10.610
e-wallet	0.212	0.063	.205	3.378	.001	0.088	0.336

## CONCLUSION

E-wallets positively and significantly impact Indonesia's digital financial transformation (QRIS), as indicated by a coefficient of  $\beta = 0.212$  and a significance level of  $p = 0.001$ . However, the  $R^2$  value of 0.042 suggests that other factors—such as online shopping behavior, digital literacy, government policy, and the number of QRIS merchants—play more dominant roles. This study contributes methodologically by introducing Google Trends (Interest Over Time) as a behavioral proxy for public engagement with digital payment systems. Based on these findings, regulators are advised to strengthen QRIS promotional strategies by leveraging the popularity of e-wallets. At the same time, industry players should encourage adoption through incentives like cashback, discounts, and educational campaigns integrated into e-wallet platforms. Academics are encouraged to expand future research by incorporating variables such as online shopping intensity, digital literacy, and merchant growth to develop more comprehensive models, and the public is urged to actively use QRIS through e-wallets to foster a stronger and more inclusive digital transaction culture in Indonesia.

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