

Digital Payment Systems and Economic Efficiency: Evidence from Emerging Markets

Dr. Astha Ahuja*

*Associate Professor, Department of Economics, Aryabhata College, University of Delhi

ARTICLE INFO

Revised – 17 April 2024

Acceptance – 30 May 2024

ABSTRACT

This study examines the impact of digital payment systems on economic efficiency in emerging markets from an information systems perspective. With the rapid expansion of digital financial technologies, including mobile payments and online transaction platforms, emerging economies are increasingly transitioning toward cashless systems that enhance financial accessibility and operational efficiency. The study adopts a quantitative panel data approach to analyze the connection between digital payment adoption and economic efficiency across multiple countries over time. Economic efficiency is measured through a composite index capturing productivity and transaction effectiveness, while digital payment adoption is assessed through an index reflecting usage and penetration levels. The analysis incorporates key control variables, including financial inclusion, infrastructure development, internet penetration, education, inflation, and economic development, to provide a comprehensive understanding of the underlying dynamics. The results reveal a strong positive and statistically significant relationship between digital payment adoption and economic efficiency, indicating that digital financial systems play a crucial role in improving resource allocation, reducing transaction costs, and enhancing productivity. Additionally, financial inclusion, infrastructure, internet connectivity, and education are found to significantly reinforce this relationship, while macroeconomic factors such as inflation show limited influence. The findings highlight the importance of integrating technological innovation with supportive institutional and socio-economic conditions. Overall, the study contributes to the literature by establishing a clear linkage between digital payment systems and macroeconomic efficiency in emerging markets.

Keywords: Digital Payment Systems; Economic Efficiency; Emerging Markets; Financial Inclusion; FinTech

1. Introduction

The world of the global financial environment has drastically changed due to the rapid development of information systems. Financial technologies such as mobile payments, online banking, and electronic transaction platform have been increasing tremendously over recent decade especially in the emerging economies. This change has been brought about by the rise of smart phones, the availability of the internet and favourable regulatory climates. Therefore, online payment systems have found their way to the contemporary economies where they have made transactions in various sectors faster, safer, and economical. The growing contribution of fintech and digital finance to the revolution of financial service has been a familiar concept in the literature (Puschmann, 2017; Varga, 2017).

There has also been the use of digital payment systems in bridging the financial access gaps within the emerging economies where the traditional banking infrastructure is in many cases limited. These systems offer easy and effective ways of how individuals and businesses can make transactions hence minimizing the use of cash-based systems. The transition to the digital transaction form of transactions has made life more convenient, more transparent, less expensive in terms of transactions, and less risky in terms of unofficial financial practices. The digital payment systems, in their turn, belong to the process of modernization of financial ecosystem and are a part of the overall economic development process. Financial inclusion and digital innovation are the main causes of economic change in developing regions according to the previous research (Beck et al., 2015; Bazarbash, 2019).

Information systems and online payment platforms are a blend of technological, organizational, and social factors. These systems are aimed at simplifying financial transactions, improving the accuracy of data, and processing transactions in real-time. Digital payment system can also improve the efficiency of operation by incorporating the new technologies in cloud computing, mobile applications and safe networks to deliver scalable solutions in the provision of financial services. This technological assimilation assists the economy to simplify resource distribution and improve productivity which are among the elements of economic efficiency. Recent research has highlighted the wider digitalization of financial services and its market structure and policy implications (Feyen et al., 2021; Allen et al., 2021).

In spite of the high rate of development of digital payment systems, most of the emerging markets are still characterized by high levels of economic inefficiency. These involve the existence of high transaction costs, financial process delays, restricted access to formal financial services and the continuation of informal economic activity. These inefficiencies are an obstacle to the efficient use of resources and limit economic development. Although digital payment systems seem to provide the possible solution to these problems, the effect on the overall economic efficiency is one of the aspects that still need thorough research. The current body of knowledge has addressed the subject of financial inclusion and fintech innovation mainly, but little attention has been paid to the macroeconomic efficiency outcomes (Haddad and Hornuf, 2019; Claessens et al., 2018).

Moreover, various contextual variables such as infrastructure development, the level of internet penetration, level of education, and macroeconomic stability affect the success of digital payment systems. Unequal adoption and even unequal results in countries can be caused by differences in these factors in the emerging markets. An example is that the better the digital infrastructure is developed and the degree of connection is high, the more likely it is that the benefits of digital payment systems are going to be felt. Correspondingly, increased education and digital literacy can help people to make proper use of these technologies, thus, increasing their effects on the economic performance. On the other hand, the potential benefits of the digital financial systems may be limited due to weak infrastructural factors, a lack of access to technology, and economic instability. The regulatory and technological complications linked to the development of fintech also mirror these challenges (Zetsche et al., 2017; Gai et al., 2018).

In the light of these complications, a thorough analysis is required which will study the connection between electronic payment systems and economic efficiency considering the role played by major facilitating factors. This relationship is critical to understand by policymakers and other stakeholders who want to use digital technologies to enhance economic performance. The fintech opportunity is both innovative and efficient in terms of improving efficiency and cutting friction in the financial systems (Philippon, 2016). Also, the larger digital economy is still redefining economic relations and patterns of productivity (Goldfarb & Tucker, 2019). In this regard, this research seeks to examine how the digital payment systems can affect the economic efficiency of the emerging markets. The research aims to examine the degree to which the uptake of digital payment will lead to better economic performance and the influence of how these factors will influence the relationship, including financial inclusion, infrastructure, internet penetration, education, and macroeconomic conditions. The policy-related implications and the growth in the utilization of digital financial services also indicate the relevance of such analysis (Pazarbasioglu et al., 2020).

The study is significant in that it is multidisciplinary in regard to integration of information system, economics and management. It acknowledges that digital payment systems are not technology but rather they exist in the wider socio-economic and institutional settings. They, therefore, impact on economic efficiency through a combination of technological capabilities, organizational set-ups and factors of society. Such a view is congruent with the current debates about digital disruption of financial systems and its effects on competition and efficiency (Vives, 2020).

Also, the study will contribute to existing discourse of digital transformation by pointing to the fact that technological change must be accompanied by enabling policies and infrastructure. As the process of digitalization in the new markets continues to be implemented, the need to ensure that the beneficial outcomes of the digital payment systems are distributed equally and contribute to the sustainable economic growth. The recent systematic reviews also highlight the dynamic character of digital payment technologies and issues related to their adoption (Khando et al., 2022).

In conclusion, it can be stated that digital payment systems can be regarded as a disruptive factor in the new markets, and it would significantly influence the efficiency of the economy. Nonetheless, to achieve this potential, there should be an in-depth awareness of the factors that determine their adoption and effectiveness. The proposed research will close this gap by researching the interplay between the digital payment systems and economic efficiency and, therefore, contribute to the academic literature and practical policy development in information systems and financial technology.

2. Methodology

2.1 Research Design

This study adopts a quantitative research design to examine the relationship between the digital payment system and the efficiency of the economy in the emerging markets. The study is based on an empirical approach, which allows the systematic study of various variables on an inter-country and inter-temporal basis. To obtain a more detailed image of the relationship between digital financial technologies and economic performance, it is based on a panel data format to record cross-sectional and temporal changes. It is an extremely appropriate design to be used in pattern, trends, and causal relationships identification in the complex information systems environment.

2.2 Data Structure and Sample Selection

The analysis takes into consideration a systematized collection of data of various emerging economies that are monitored over a period of time. The chosen countries do not stand on the same level of economic and technological development, which guarantees the plurality of the rates of digital payments and economic factors. The time dimension allows studying the longitudinal pattern of development of the digital payments system and its development. The panel design contributes to the rigor of the results, which incorporates an unobserved heterogeneity and country-specific effects.

2.3 Variable Measurement

2.3.1 Dependent Variable

Economic efficiency is the dependent variable in the current study. It is an indicator of how the resources are distributed and used within an economy. A composite index of productivity, transaction efficiency and the overall economic performance is used to operationalize the construct.

2.3.2 Independent Variable

The degree of adoption of digital payments is the main independent variable. This is measured using an index of the adoption and usage of digital financial transaction systems, such as mobile payments, electronic transfers, and web-based financial services.

2.3.3 Control Variables

A number of control variables are included in order to make the model valid. Financial inclusion is added to have access to formal financial services. The infrastructure development indicates the presence and standard of technological and physical systems of digital transactions. Digital readiness and connectivity are given as a proxy of internet penetration. The rate of inflation is included in consideration of macroeconomic stability, and the education level is the human capital and digital literacy. Also, the income-related indicators are used to control economic development to isolate the impact of the digital payment systems on efficiency.

2.4 Model Specification

In order to investigate the connection between digital payment systems and economic efficiency, a multivariate regression model is used. The model estimates the effect of digital payment adoption while controlling for relevant variables.

The overall shape of the model is as follows:

Economic Efficiency = f (Digital Payment Adoption, Financial Inclusion, Infrastructure, Internet Penetration, Inflation, Education, Economic Development)

This functional specification enables consideration of direct and indirect effects of digital payment systems on economic efficiency.

2.5 Analytical Techniques

The combination of econometric and statistical techniques is used to conduct the analysis. The first step is to summarize the properties of the variables and identify the general trends with the help of descriptive statistics. Correlation analysis is used to test the strength and direction of relationships between variables.

Then, the estimation of the model is done using panel regression. Fixed effects and random effects models are used to account for the unobserved heterogeneity between countries. The right diagnostic tests are performed so as to identify the most appropriate model specification. The methods make the research generate sound and stable estimates of the effect of digital payment systems on economic efficiency.

2.6 Reliability and Validity

The research considers a number of variables that depict various aspects of economic and technological systems in order to guarantee the strength of results. The panel data method increases internal validity by managing time-invariant variables. Also, the presence of control variables decreases the chances of the omitted variable bias, thus enhancing the validity of the findings.

3. Results

3.1 Descriptive Statistics

The descriptive statistics were calculated to describe the distribution and central tendencies of the variables used in the study. As shown in Table 1, the variables are highly varied across countries and time, which means that there is heterogeneity in the dataset.

Table 1. Descriptive Statistics

Variable	Mean	Std. Dev	Min	Max
Digital_Payment_Index	62.41	15.87	22.13	98.76
Financial_Inclusion_Index	58.32	12.45	30.21	85.67

Infrastructure_Index	70.15	10.28	45.32	92.44
GDP_per_Capita	4125.67	1820.54	980.45	8450.22
Internet_Penetration	58.74	14.62	22.45	88.91
Inflation_Rate	6.12	2.01	2.10	11.35
Education_Index	78.65	8.72	55.20	95.40
Economic_Efficiency_Index	58.48	11.43	28.93	85.77

Digital payment adoption shows a gradual increase over the study period, and this is graphically reflected in Figure 1. This positive trend is an indication of increased adoption of digital financial systems in emerging markets.

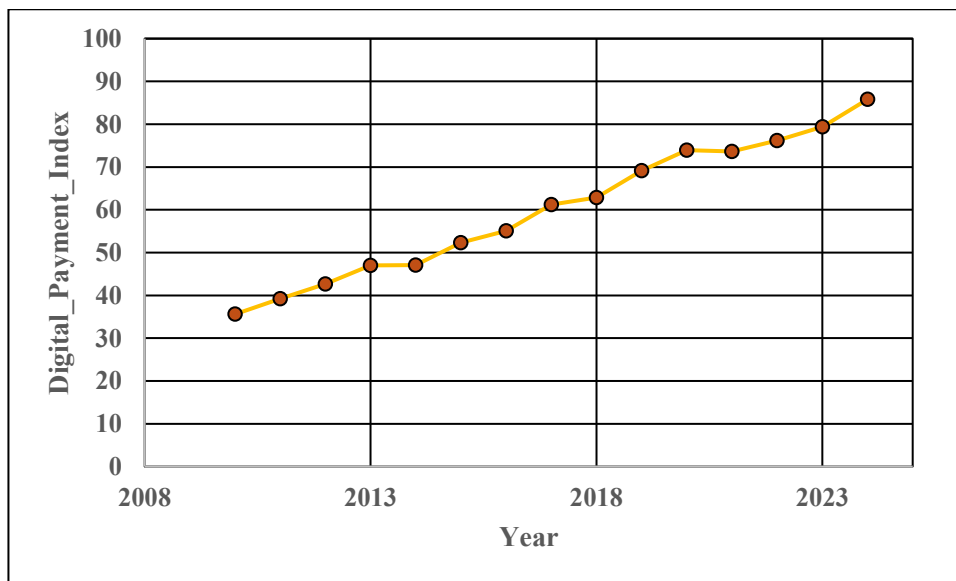


Figure 1. Trend of Digital Payment Adoption

Likewise, economic efficiency is gradually increasing with time, as revealed in Figure 2, implying that improvements in digital and economic systems bring about an increase in efficiency rates.

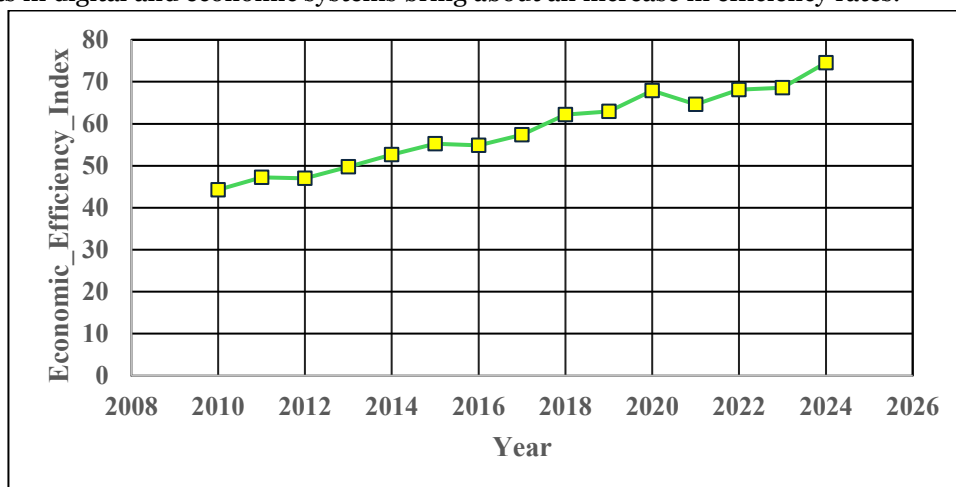


Figure 2. Trend of Economic Efficiency

All in all, the descriptive statistics indicate that the data can be used in further econometric analysis.

3.2 Correlation Analysis

Table 2 shows the correlation between the study variables. The findings indicate that there exists a strong positive relationship between the adoption of digital payments and the efficiency of the economy, and that higher levels of digital transaction usage are associated with improved economic performance.

Table 2. Correlation Matrix

Variable	EE	DP	FI	INF	GDP	INT	INF_R	EDU
Economic Efficiency (EE)	1.000							
Digital Payments (DP)	0.768	1.000						
Financial Inclusion (FI)	0.453	0.475	1.000					
Infrastructure (INF)	0.645	0.489	0.522	1.000				
GDP per Capita (GDP)	0.400	0.284	0.312	0.355	1.000			
Internet Penetration (INT)	0.589	0.612	0.530	0.648	0.420	1.000		
Inflation (INF_R)	-0.112	-0.085	-0.091	-0.072	-0.050	-0.060	1.000	
Education (EDU)	0.521	0.498	0.472	0.580	0.395	0.610	-0.045	1.000

There are also positive correlations between financial inclusion and infrastructure development and economic efficiency, as they are complementary. There are moderate positive correlations between internet penetration and education levels which once again prove the significance of digital readiness and human capital. Conversely, inflation shows a weak negative correlation with economic efficiency which implies that the presence of macroeconomic instability can be an impediment to the optimal utilization of resources. Notably, the values of correlation are not too high, and this suggests that the problem of the severe multicollinearity is not serious.

3.3 Panel Regression Results

Table 3 shows the outcome of the regression analysis. The results also show that the adoption of digital payments positively and statistically significantly impacts the economic efficiency, which proves the main hypothesis of the study.

Table 3. Regression Results (OLS)

Variable	Coefficient	Std. Error	t-value	p-value
Constant	-5.630	4.050	-1.390	0.166
Digital Payment Index	0.276	0.027	10.161	0.000***
Financial Inclusion	0.213	0.025	8.510	0.000***
Infrastructure	0.221	0.043	5.092	0.000***
GDP per Capita	-0.0002	0.000	-0.984	0.326
Internet Penetration	0.119	0.029	4.092	0.000***
Inflation Rate	0.042	0.243	0.173	0.862
Education Index	0.166	0.048	3.447	0.001**

Model Summary:

- $R^2 = 0.814$
- Adjusted $R^2 = 0.807$
- F-statistic = 107.6 ($p < 0.001$)

Notes

- *** = significant at 1%
- ** = significant at 5%

In particular, the coefficient of digital payment adoption is positive and statistically significant, which indicates that the higher the application of digital financial systems, the more effective and productive transactions are. There are also high positive impacts on financial inclusion and infrastructural development, which support their contribution to the enhancement of economic performance.

It is also observed that internet penetration and education levels have considerable positive effects that give rise to the notion that digital connectivity and human capital are the important enablers of effective economic systems. On the other hand, inflation does not have a statistically significant effect in the model, whereas GDP per capita proves a comparatively rather modest effect.

3.4 Cross-Country Variations

In order to investigate further cross country differences, Figure 3 shows a boxplot of economic efficiency. The figure illustrates significant differences in median values and dispersion among the countries, showing differences in economic performance among the emerging markets.

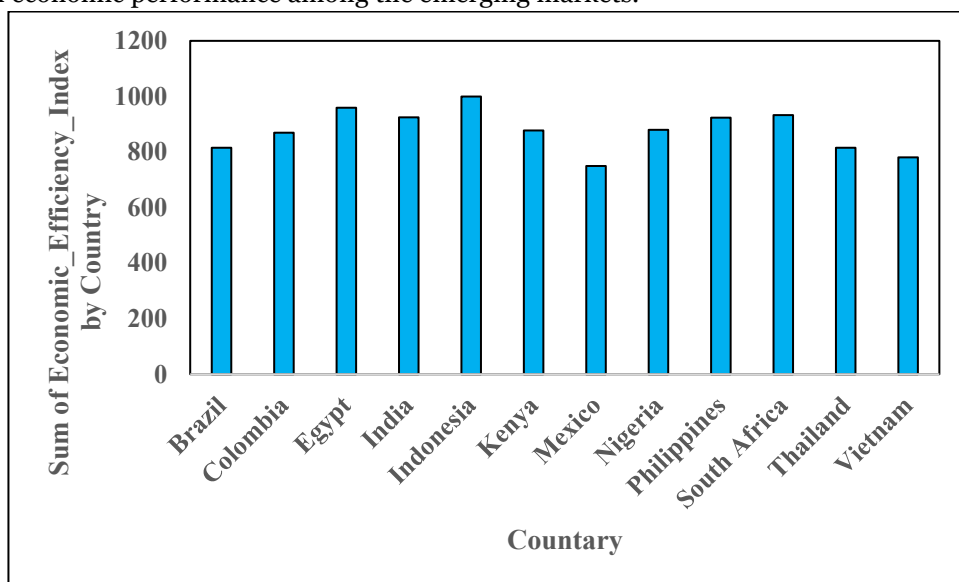


Figure 3. Economic Efficiency by Country

The implication of these differences is that despite the efficiency-related association with digital payment systems, the impact of the latter can be different depending on country-specific factors, such as institutional environments, infrastructure development level, and the policy environment.

In general, the findings present good empirical data that would suggest that the use of digital payment systems can greatly increase the economic efficiency in the emerging markets. The results with the help of Tables 1-3 and Figures 1-3 rephrase the relevance of the integration of digital financial technologies with the facilitating infrastructure, financial inclusion, and human capital development.

4. Discussion

The results of the current research may serve as effective empirical data on the role of the digital payment systems in improving the functionality of the economy of the emerging markets. All findings presented in Tables 1-3 and Figures 1-3 show that technology that has been developed in financial systems contributes greatly to the improvement of better economic performance. This section is the interpretation of these discoveries and the correlation with the theories and past research available, and records the implications made by them in general.

According to descriptive analysis presented in Table 1, there is significant variation across countries and over time in digital payment adoption, financial inclusion, and economic efficiency. Figure 1 shows that the adoption of digital payments is increasing at a fast pace, which is indicative of the massive growth of financial technologies in young economies. It is consistent with previous literature that highlights the increased role of fintech ecosystems and digital financial services in the reformation of financial systems (Gomber et al., 2017; Lee and Shin, 2018). In line with this, Figure 2 shows a progressive rise in economic efficiency, which implies that the rise in digital and economic infrastructures leads to an increase in the level of efficiency, which is consistent with the overall digital finance (Vives, 2019).

The high positive relationship between the use of digital payments and economic efficiency which is indicated in Table 2 supports the main thesis of the research. This association implies that electronic financial systems lower transaction expenses, delays, and enhance transparency in economic operations. These conclusions align with what the literature on digital finance and financial inclusion has to say about digital systems enhancing access and efficiency (Ozili, 2018; Demirguc-Kunt et al., 2018). Additionally, digital payments have been demonstrated to be efficient in helping to decrease poverty and boost the economic participation of mobile-based financial services (Suri and Jack, 2016).

Table 3 results of the regression give additional support to this relationship. The positive and statistically significant coefficient of digital payment adoption justifies the fact that increased use of digital financial platforms has a direct and positive effect on the efficiency of the economy. This conclusion is consistent with the rest of the fintech literature, which asserts that technological innovation in finance enhances financial intermediation and economic performance (Chen et al., 2019; Thakor, 2020). Moreover, the evolving nature of financial systems under the impact of the BigTech and digital platforms further supports the significance of digital payments in the contemporary economies (Frost et al., 2019).

Financial inclusion also comes out as a major factor of economic efficiency. The existence of positive relationship during the regression analysis means that the wider access to financial services allows people and businesses to engage in more economic activities. This observation can be substantiated by massive studies that financial inclusion promotes economic growth and inequality (Demirguc-Kunt et al., 2018; Afjal, 2023). Additionally, recent developments in the field of measuring digital financial inclusion emphasize its increased significance in developing economies (Khera et al., 2022).

The development of infrastructure and internet penetration are also discovered to have important positive impacts on economic efficiency. These variables are the technological base that will make the successful implementation of the digital payment systems. These results are in line with the previous studies that have indicated that digital infrastructure and connectivity are key factors in facilitating financial innovation and service provision (Lee and Shin, 2018; Zhang et al., 2018). The advantages of the digital payment systems can never be achieved without proper infrastructure.

Human capital is also linked to economic efficiency, where education is positively and significantly related to it. The outcome highlights the significance of digital literacy in supporting the use and successful implementation of financial technologies. Increased education increases the capability of the users to interact with the digital systems hence, boosting their economic performance. The given finding goes along with the literature on financial inclusion and technology adoption, in general (Ozili, 2021).

Surprisingly, the inflation does not have statistically significant impact in the regression model, even though it has negative correlation with economic efficiency. It is implied that, although macroeconomic stability is still relevant, technological aspects like the use of digital payment systems might be more prevalent in enhancing efficiency in the framework of emerging markets. On the same note, GDP per capita has shown a comparatively small effect, which implies that economic development cannot work without incorporation of highly sophisticated information systems.

The cross-country differences that were shown in Figure 3 add more information to the heterogeneity of the efficiency of the economy of the emerging markets. The identified variations serve to demonstrate the role played by institutional, regulatory, and technological forces in determining the economic performance. Other

existing researches on fintech and digital disruption also highlight the fact that the influence of digital technologies in different regions is highly variable and depends on conditions (Arner et al., 2017; Vives, 2019). In general, the results confirm that digital payment systems are very important in improving the efficiency of the economy in emerging markets. Digital financial technologies combined with financial inclusion, infrastructure, and human capital development have a synergistic effect, which leads to economic performance. These findings add to the body of literature as they provide a distinct empirical relationship between the information systems and the macroeconomic efficiency, which is one of the main research gaps recognized in previous research (Gomber et al., 2017; Ozili, 2021).

Lastly, in the discussion, it is stated that there is a need to go about digital transformation in a holistic way. To achieve the maximum advantages of digital payment systems, the policymakers and the stakeholders should strive to enhance digital infrastructure, financial inclusion and digital literacy. Through this, the developing economies will manage to achieve higher economic performance and sustainable development.

5. Conclusion

This study examined the role of digital payment systems in enhancing economic efficiency within emerging markets by adopting a comprehensive and multidisciplinary approach. The findings demonstrate that the increasing adoption of digital payment technologies significantly contributes to improved economic performance by reducing transaction costs, increasing speed and transparency, and facilitating better resource allocation. The results further highlight that digital payment systems, when supported by strong financial inclusion, robust infrastructure, widespread internet penetration, and higher levels of education, create a synergistic effect that strengthens overall economic efficiency. While macroeconomic factors such as inflation and income levels play a role, the study finds that technological and structural determinants have a more direct and substantial impact on efficiency outcomes in the context of digital transformation. Additionally, variations across countries suggest that the benefits of digital payment systems are influenced by institutional and contextual factors, emphasizing the need for tailored policy interventions. From an information systems perspective, the study reinforces the importance of integrating technological innovation with organizational and societal readiness to achieve optimal outcomes. The findings contribute to the existing literature by establishing a clear empirical linkage between digital payment adoption and macroeconomic efficiency, thereby addressing a critical research gap. In practical terms, the study suggests that policymakers should prioritize investments in digital infrastructure, promote financial inclusion, and enhance digital literacy to maximize the benefits of digital financial systems. Overall, digital payment systems emerge as a key driver of efficient and sustainable economic development in emerging markets.

References

- [1] Afjal, M. (2023). Bridging the financial divide: a bibliometric analysis on the role of digital financial services within FinTech in enhancing financial inclusion and economic development. *Humanities and Social Sciences Communications*, 10(1), 1-27.
- [2] Allen, F., Gu, X., & Jagtiani, J. (2021). A survey of fintech research and policy discussion. *Review of Corporate Finance*, 1(3-4), 259-339.
- [3] Arner, D. W., Barberis, J., & Buckley, R. P. (2017). Fintech and regtech: Impact on regulators and banks. *Journal of Banking Regulation*, 19(4), 1-14.
- [4] Bazarbash, M. (2019). *Fintech in financial inclusion: machine learning applications in assessing credit risk*. International Monetary Fund.
- [5] Beck, T., Senbet, L., & Simbanegavi, W. (2015). Financial inclusion and innovation in Africa: An overview. *Journal of African Economies*, 24(suppl_1), i3-i11.
- [6] Chen, M. A., Wu, Q., & Yang, B. (2019). How valuable is FinTech innovation? *The Review of financial studies*, 32(5), 2062-2106.

- [7] Claessens, S., Frost, J., Turner, G., & Zhu, F. (2018). Fintech credit markets around the world: size, drivers and policy issues. *BIS Quarterly Review September*.
- [8] Demircuc-Kunt, A., Klapper, L., Singer, D., Ansar, S., & Hess, J. (2018). *The Global Findex Database 2017: Measuring financial inclusion and the fintech revolution*. World Bank Publications.
- [9] Feyen, E., Frost, J., Gambacorta, L., Natarajan, H., & Saal, M. (2021). Fintech and the digital transformation of financial services: implications for market structure and public policy. *BIS papers*.
- [10] Frost, J., Gambacorta, L., Huang, Y., Shin, H. S., & Zbinden, P. (2019). BigTech and the changing structure of financial intermediation. *Economic policy*, 34(100), 761-799.
- [11] Gai, K., Qiu, M., & Sun, X. (2018). A survey on FinTech. *Journal of network and computer applications*, 103, 262-273.
- [12] Goldfarb, A., & Tucker, C. (2019). Digital economics. *Journal of economic literature*, 57(1), 3-43.
- [13] Gomber, P., Koch, J. A., & Siering, M. (2017). Digital Finance and FinTech: current research and future research directions. *Journal of business economics*, 87(5), 537-580.
- [14] Haddad, C., & Hornuf, L. (2019). The emergence of the global fintech market: Economic and technological determinants. *Small business economics*, 53(1), 81-105.
- [15] Khando, K., Islam, M. S., & Gao, S. (2022). The emerging technologies of digital payments and associated challenges: a systematic literature review. *Future Internet*, 15(1), 21.
- [16] Khera, P., Ng, S., Ogawa, S., & Sahay, R. (2022). Digital financial inclusion in emerging and developing economies: A new index.
- [17] Lee, I., & Shin, Y. J. (2018). Fintech: Ecosystem, business models, investment decisions, and challenges. *Business horizons*, 61(1), 35-46.
- [18] Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability. *Borsa istanbul review*, 18(4), 329-340.
- [19] Ozili, P. K. (2021, October). Financial inclusion research around the world: A review. In *Forum for social economics* (Vol. 50, No. 4, pp. 457-479). Routledge.
- [20] Pazarbasioglu, C., Mora, A. G., Uttamchandani, M., Natarajan, H., Feyen, E., & Saal, M. (2020). Digital financial services. *World Bank*, 54(1), 1-54.
- [21] Philippon, T. (2016). *The fintech opportunity* (No. w22476). National Bureau of Economic Research.
- [22] Puschmann, T. (2017). Fintech. *Business & Information Systems Engineering*, 59(1), 69-76.
- [23] Suri, T., & Jack, W. (2016). The long-run poverty and gender impacts of mobile money. *Science*, 354(6317), 1288-1292.
- [24] Thakor, A. V. (2020). Fintech and banking: What do we know? *Journal of financial intermediation*, 41, 100833.
- [25] Varga, D. (2017). Fintech, the new era of financial services. *Vezetéstudomány-Budapest Management Review*, 48(11), 22-32.
- [26] Vives, X. (2019). Digital disruption in banking. *Annual Review of Financial Economics*, 11(1), 243-272.
- [27] Vives, X. (2020). Digital disruption in banking and its impact on competition. *Organisation for Economic Co-operation & Development (OECD)*.
- [28] Zetsche, D. A., Buckley, R. P., Arner, D. W., & Barberis, J. N. (2017). From FinTech to TechFin: The regulatory challenges of data-driven finance. *NYUJL & Bus.*, 14, 393.
- [29] Zhang, T., Lu, C., & Kizildag, M. (2018). Banking “on-the-go”: examining consumers’ adoption of mobile banking services. *International Journal of Quality and Service Sciences*, 10(3), 279-295.