

**MODERN PAYMENT SYSTEM- A COMPARATIVE STUDY OF G 20 COUNTRIES**

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**Abstract:**

Modern payment systems have become increasingly integral to the global economy, transforming the way individuals and businesses conduct financial transactions. This study provides an overview of the digital payment systems in the G20 nations, a diverse group of major economies. The study explores the evolution, adoption, and regulatory framework of digital payment systems in these countries and highlights key trends and challenges. The G20, comprised of 19 individual nations and the European Union, plays a pivotal role in shaping the global financial landscape. Each G20 nation has witnessed a remarkable shift toward digital payments, driven by technological advancements and changing consumer preferences. The proliferation of smartphones, the internet, and fintech innovations have facilitated the widespread adoption of digital payment methods.

**Keywords:** Modern payment, G20 countries, Digital Economy, Challenges, methods

**Introduction:**

Every nation makes concerted efforts to grow its economy. Many government officials and administrators feel it is essential to have a thorough understanding of the challenges and process of economic development before they can craft effective policies for their country. It's no secret that practically every country's primary economic indicators have shifted frequently over the years in response to shifting objectives among policymakers and administrations. An economy consists of the various groups and establishments that aid in, or take part in, a society's means of producing and distributing products and services. The economic system of a country reflects the way in which its resources are managed and dispersed. They also decide what can be bartered or bargained for a certain good or service and how much that good or service is worth. The market system is where producers and consumers interact, making up a significant part of the economic system. The point of an economy is to provide people with the things they need and want. The availability and utilisation of natural resources, in addition to economic and non-economic factors, constantly have a role in shaping economic development. Capital formation and accumulation, the capital-output ratio across all industries, agricultural surplus, increased international trade, strengthened financial markets, the availability of capital, etc. are among the most important economic factors affecting a country's development process. A country's financial system is crucial to its economic growth. The public should be afforded as much financial ease as possible by the financial system because money is a vital component of development. Because it allows money to move easily across different parts of the economy, the financial sector is crucial to growth.

Digital payments are facilitated by the infrastructure, networking, and technology advancements of the banking sector. The banking industry is of paramount importance to the economic and financial system of every country. Its role is expanding beyond the conventional functions of deposit acceptance and loan provision. The digital banking infrastructure and networking are enabling the creation and upkeep of a streamlined and economical payment system to fulfil the needs of businesses, government agencies/departments, and the general public. It also offers widespread access to and delivery of numerous financial services to the public. In order to fulfil the growing demands and expectations of the public, banks are obligated to expand their services through the implementation of technologies.

A Digital Economy is characterised by a higher prevalence of digital currency transactions and a lower reliance on cash transactions. E-financial is an online system that enables various financial operations, such as fund transfers, loan and EMI payments, and cash deposits and withdrawals, using Internet technology. It eliminates the need to physically visit a bank and allows these transactions to be conducted anytime and anywhere. One must acknowledge the ongoing transformations occurring in

the financial industry. In the early 1980s, banks that relied on manual systems for collecting and retrieving bank data did not anticipate the need to embrace alternative technological methods for their banking operations. It is now mandatory for every bank branch to utilise electronic banking, without any exceptions. In order to enhance their proficiency in creating cutting-edge products and delivering high-quality and effective service to consumers, banks and financial institutions must embrace technological advancements.

#### **About G 20:**

The Group of Twenty (G20) is the foremost platform for global economic collaboration. It has a significant impact on the formation and reinforcement of global structures and systems for managing major international economic matters. The establishment of the G20 took place in 1999 in response to the Asian financial crisis, with the primary objective of providing a platform for Finance Ministers and Central Bank Governors to engage in discussions pertaining to global economic and financial matters. The G20 is composed of 19 countries, including Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Türkiye, United Kingdom, and United States, as well as the European Union. The G20 comprises nations that collectively account for around 85% of the worldwide Gross Domestic Product (GDP), over 75% of the global trade, and roughly two-thirds of the global population. The G20 serves as the primary platform for worldwide economic collaboration and significantly influences the development and reinforcement of global structures and governance pertaining to major international economic matters. The G20 lacks a fixed secretariat or personnel. However, the G20 Presidency is rotated on a yearly basis among its members and is chosen from a distinct regional grouping of nations. Consequently, the 19 member countries are distributed among five groups, with each group consisting of a maximum of four countries. Groups are mostly organised based on regional affiliation, meaning that countries from the same region are typically grouped together. Only Group 1 (consisting of Australia, Canada, Saudi Arabia, and the United States) and Group 2 (comprising India, Russia, South Africa, and Türkiye) deviate from this pattern. Group 3 comprises Argentina, Brazil, and Mexico; Group 4 comprises France, Germany, Italy, and the United Kingdom; while Group 5 comprises China, Indonesia, Japan, and the Republic of Korea. The European Union, as the 20th member, does not belong to any of these regional groups. Every year, a different country from a distinct group takes on the responsibility of the G20 Presidency. Each country in a group has an equal entitlement to assume the Presidency when it is their group's turn. India, representing Group 2, currently has the Presidency of the G20 from December 1, 2022, until November 30, 2023. During its G20 Presidency, the central government plans to showcase its 'Digital India' project and digital public goods to the international community. The objective is to offer an engaging encounter to around 1,000 international participants using UPI wallet technology, emphasising the ease of conducting transactions through this domestic approach.

"Foreign delegates or participants will receive a sum of Rs 500-1,000 in their UPI wallets as an incentive for conducting UPI transactions," stated a government official to news agency ANI. The government has allocated approximately Rs 10 lakhs for this purpose. The Unified Payments Interface (UPI) is a mobile-centric instant payment system in India that enables users to make round-the-clock payments using a Virtual Payment Address (VPA).

UPI has experienced substantial popularity in India for retail digital payments and continues to witness swift adoption. The Indian government and central bank have been instrumental in internationalising India's digital payment infrastructure, ensuring that the advantages of UPI reach beyond the borders of India. India has formed partnerships with countries such as Sri Lanka, France, UAE, and Singapore in the field of fintech and payment solutions. In April of this year, the Reserve Bank of India implemented UPI-based payment systems for inbound travellers from G20 countries.<sup>1</sup>

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<sup>1</sup><https://www.indiatoday.in/india/story/g20-summit-delegates-get-hands-on-upi-wallets-experience-2432245-2023-09-07>

### **Importance of the study:**

Digital payment systems play a crucial role in the economies of G20 nations, which represent a substantial portion of the global economy. Understanding these systems can help assess their impact on economic growth, financial inclusion, and overall economic stability. Digital payment systems can extend financial services to underserved populations, promoting financial inclusion. A study of these systems can reveal how effective they are in bringing unbanked or under banked individuals and businesses into the formal financial sector. The development and adoption of digital payment systems are closely tied to technological advancements. Studying these systems can shed light on the technological trends and innovations within G20 nations, helping identify opportunities for further development. As G20 nations are significant players in the global financial system, studying their digital payment systems can promote international collaboration and knowledge sharing in this field, potentially leading to the development of global standards and best practices.

### **Objectives of the study:**

- To provide an in-depth analysis of the digital payment systems in G20 nations
- To identify the key factors influencing the growth and development of digital payment systems in these nations.
- To compare the digital payment landscapes among G20 nations

### **Methodology:**

The research is based on secondary data and insights. The secondary data have been collected from books, journals, research papers, news papers, magazine, G-20 government's reports, central banks, financial institutions, and internet. Narrative tools have been used for comparative analysis to assess the digital payment systems in G20 countries.

### **Factors Influencing the Adoption and Growth of Digital Payment Systems:**

Within the G20 group of nations, a diverse set of factors influence the adoption and growth of digital payment systems.

#### **Economic Factors:**

A crucial determinant of digital payment adoption is the income level within a nation. High-income countries within the G20, such as the United States and Germany, tend to have more advanced digital payment infrastructures and higher adoption rates. The level of economic development also plays a significant role. Emerging economies, like India and Brazil, have seen rapid digital payment adoption due to the need for financial inclusion and a growing middle class.

#### **Regulatory Environment:**

Government policies and regulations can either foster or hinder the growth of digital payment systems. Countries like China have embraced digital payment innovations, often with regulatory support, while others have been more cautious. Stringent data protection and cybersecurity regulations can either instill trust or create barriers for consumers to adopt digital payments.

#### **Technological Infrastructure:**

High levels of internet penetration are essential for the success of digital payment systems. Countries with better internet infrastructure tend to have higher adoption rates. The availability of smartphones and mobile devices is a significant factor, as mobile apps play a vital role in digital payment adoption.

#### **Cultural and Social Factors:**

Cultural norms and consumer preferences also impact digital payment adoption. In countries like Japan, cash is still widely preferred for cultural reasons, whereas in China, mobile payments have become a social norm. The level of trust in digital payment systems and awareness of their benefits can vary widely. Educational initiatives and marketing campaigns can influence these factors.

#### **Competition and Market Dynamics:**

The presence of strong local and international players can influence digital payment adoption. Markets with fierce competition often see faster innovation and better services. Collaboration between banks, fintech firms, and e-commerce companies can accelerate the growth of digital payment systems.

### **Financial Inclusion:**

Efforts to include under banked and unbanked populations can drive digital payment growth. Initiatives like India's Jan Dhan Yojana have been instrumental in expanding digital financial services to rural areas. The ease of conducting cross-border transactions through digital payment systems is vital in an increasingly globalized world.

### **Demographics**

Younger generations tend to adopt digital payment systems more readily than older ones. However, older demographics can also adapt with time. Urban areas may experience quicker adoption due to better infrastructure and access to digital services.

### **Digital Payment Systems in G20 Nations:**

#### **China: Leading the Way**

China stands out as a global leader in digital payment systems. Mobile payment platforms like Alipay and WeChat Pay have become an integral part of everyday life, with transactions conducted for everything from groceries to rent payments. The Chinese government has played a significant role in fostering this trend, with regulatory support and investments in fintech innovation.

#### **India: The Push for Financial Inclusion**

India has seen a rapid rise in digital payments following the demonetization drive in 2016. The Unified Payments Interface (UPI) system has gained widespread popularity, facilitating quick and secure transactions. India's digital payment ecosystem is driven by a push for financial inclusion, with a focus on reaching the unbanked and underbanked population.

#### **United States: A Shift towards Cards and Mobile Apps**

In the United States, the adoption of digital payment systems has been driven by the convenience and security offered by credit cards and mobile apps like Apple Pay, Google Pay, and PayPal. Despite this, cash and checks still play a significant role in everyday transactions for many Americans.

#### **European Union: Diverse Landscape:**

The European Union comprises a diverse landscape of digital payment adoption. Countries like Sweden have embraced cashless payments, with mobile payment apps like Swish gaining popularity. In contrast, some European nations still rely heavily on cash for transactions, reflecting a more conservative approach.

#### **Japan: Strong Preference for Cash**

Japan's strong preference for cash has made it a unique case among G20 countries. While digital payment systems are available, cultural factors and security concerns have slowed down their adoption. Cash remains the dominant mode of payment.

#### **Brazil: Growing Fintech Ecosystem**

Brazil's digital payment landscape is characterized by a growing fintech ecosystem. Mobile apps and digital wallets are increasingly popular, and the government has introduced policies to promote the transition to digital payments. However, challenges like high banking fees persist.

#### **South Africa: Advancing Mobile Money**

South Africa has made strides in advancing mobile money services like M-Pesa and mobile banking apps. These systems have facilitated financial inclusion, especially in rural areas, and have reduced the reliance on cash transactions.

#### **Australia: Contactless Payments Dominance**

Australia has witnessed a significant shift towards contactless payments, with tap-and-go cards and mobile wallets becoming the norm. Government support for fintech innovation and the use of QR codes for payments have accelerated this trend.

#### **Russia: Encouraging Digital Transformation**

Russia has seen a growing interest in digital payment systems, with a focus on reducing the use of cash. The government has initiated efforts to encourage digital transformation in the financial sector, leading to increased adoption of electronic payment methods.

#### **South Korea - T-Money and Cashbee**

South Korea has embraced digital payments through the widespread use of T-Money and Cashbee, which are contactless payment cards that work across various public transportation systems and retail

outlets. The convenience and interoperability of these cards have made them an essential part of daily life in South Korea.

### **Mexico: A Growing Ecosystem**

Mexico is experiencing a growing digital payment ecosystem, with various fintech startups offering mobile wallets and electronic payment options. Despite challenges like financial inclusion, the country is steadily moving towards cashless transactions.

### **Germany - SEPA Direct Debit**

Germany is a notable G20 country with a strong tradition of cash payments. However, it is gradually transitioning to digital payments, with SEPA Direct Debit becoming a popular choice for online and in-store transactions.

### **Canada:**

Canada has seen growing adoption of mobile payment solutions like Apple Pay and Google Pay, as well as the Interact e-Transfer service, which enables individuals to send money securely to others via email or text messages.

### **France - Apple Pay and Google Pay**

In France, Apple Pay and Google Pay have gained prominence as mobile payment solutions. These platforms have become widely accepted by retailers, making it easier for French consumers to embrace digital payments.

### **The United States**

The United States has seen a significant shift towards digital payments, with the adoption of services like PayPal, Venmo, and mobile wallets such as Apple Pay and Google Pay. The Automated Clearing House (ACH) system is the backbone of electronic fund transfers in the country. Despite the presence of these platforms, the U.S. still relies heavily on credit and debit card payments for most transactions.

### **Indonesia**

The five initiatives are further elaborated into Bank Indonesia's strategic programs which will be implemented gradually over a period of 2019 to 2025. The five initiatives are:

1: Developing Open Banking. This initiative will be achieved through an open API standardization set up. The scope of standardization will include data, technical aspects of API, security, and governance including contractual standards. This step enables the disclosure of financial information and interlinks between banks and fintech.

2: Strengthening the Configuration of Retail Payment Systems. This initiative will be achieved through the development of infrastructure that supports the availability of payment services in real time, seamless, 24 hours and 7 days (24/7) availability coupled with high level end-to-end security and efficiency. The provision of easy, comfortable, mobile, and affordable payment services for everyone becomes the final objectives of this step. Key deliverables for this initiative include the development of BI-FAST, Integrated Payment Interface, GPN and QRIS.

3: Strengthening Financial Market Infrastructures. This initiative will be achieved through modernizing the infrastructure and strengthening the regulatory framework for financial market infrastructure. Through this initiative, Indonesia's financial market infrastructure is expected to be able to operate according to standard best practices and provide support for optimal policy makings. Key deliverables for this initiative consist of modernization of BI-RTGS, BI-SSSS, and BI-ETP, as well as strengthening the regulatory framework of CCP and TR including its infrastructure developments.

4: Developing Public Infrastructure for Data. This initiative will be implemented through the provision of public infrastructure for data management. Data openness, transparency, and market discipline, are expected to be accomplished through this initiative. Key deliverables in this initiative include the establishment of Data Hub, an integrated reporting system, and Payment ID.

5: Strengthening the Regulatory, Licensing, and Supervisory. This initiative will be achieved through strengthening the framework of payment systems regulatory and supervisory framework as well as promoting an integrated licensing regime. Digital payment in Indonesia began in the early 2000s and is divided into retail and wholesale. Currently, more than 85% of transactions are processed through SKNBI (retail payment method) because Indonesia's micro and small businesses account for 99% of all businesses and contribute 60% of Indonesia's GDP.

**Saudi Arabia:**

The Kingdom of Saudi Arabia has made significant progress in its transition to a society less dependent on cash, supported by regulatory measures by SAMA and Saudi Payments' proactive initiatives. Saudi Arabia's payments industry is poised for transformation as it undergoes dynamic innovation and continued disruption of its traditional value chain and service propositions. Better card infrastructure, rising e-commerce transactions, NFC-based payments, mobile wallets, clearly demonstrate the increasing relevance and popularity of digital payments. Adoption of Digital Payments is also helping the Social-economic development in the Kingdom.

Italy

**Impact on the Global Financial Ecosystem:**

The adoption of digital payment systems within the G20 nations has several significant implications for the global financial ecosystem:

**Financial Inclusion:**

Digital payment systems have the potential to enhance financial inclusion by providing access to banking services for underserved populations.

**Improved Security:** Many digital payment systems prioritize security, employing advanced encryption and authentication methods to protect user data.

**Cross-Border Transactions:** The development of digital currencies and real-time payment systems within G20 nations can facilitate faster and more cost-effective cross-border transactions.

**Reduced Cash Usage:** As digital payments become more prevalent, the use of cash decreases, potentially reducing the costs associated with printing and circulating physical currency.

**Innovation and Competition:** The growth of digital payment systems fosters innovation and competition within the financial sector, leading to better services and improved customer experiences.

**Comparativestudy examines the digital payment landscape in G20 nations:**

Each G20 nation has witnessed a remarkable shift toward digital payments, driven by technological advancements and changing consumer preferences. The proliferation of smartphones, the internet, and fintech innovations have facilitated the widespread adoption of digital payment methods.

**Variety of Payment Methods:** G20 nations exhibit a diverse range of digital payment methods, including mobile wallets, contactless cards, peer-to-peer payment apps, and QR code-based systems. The prevalence of these methods varies from country to country, reflecting local preferences and infrastructure.

**Government Initiatives:** Many G20 nations have initiated government-led efforts to promote digital payments, aiming to reduce cash usage and improve financial inclusion. These initiatives include subsidies, incentives, and regulatory changes to create a favorable ecosystem for digital transactions.

**Financial Inclusion:** Digital payment systems have played a significant role in improving financial inclusion, especially in developing G20 nations. Mobile banking and payment apps have provided access to financial services for unbanked and under banked populations.

**Regulatory Framework:** The regulatory framework for digital payments varies widely among G20 nations. Some countries have embraced innovation-friendly regulations, while others prioritize security and consumer protection. Harmonizing these regulations across borders is a challenge in the context of international payments.

**Challenges and Security Concerns:** Despite the benefits, G20 nations face challenges related to digital payment systems, including cyber security threats, data privacy issues, and the digital divide. Striking a balance between convenience and security is a persistent challenge.

**Conclusion:**

The adoption of digital payment systems in G20 countries varies significantly, driven by a combination of technological infrastructure, cultural factors, government support, and economic conditions. While some nations, like China and India, have rapidly embraced digital payments, others, like Japan and certain European countries, have been more hesitant. Understanding these differences is essential for the continued growth and development of digital payment systems globally. As technology continues

to evolve and governments work to create conducive environments, the digital payment landscape in G20 nations will likely continue to transform in the coming years.

Digital payment systems in G20 nations are reshaping the global financial landscape. With innovations such as digital currencies, real-time payment platforms, and mobile wallets, these countries are at the forefront of a financial revolution that offers convenience, security, and accessibility. As digital payments continue to gain traction, they will have a lasting impact on the way we conduct financial transactions on a global scale.

This comparative study underscores the dynamic landscape of digital payment systems in G20 nations. The transition to digital payments offers numerous advantages, such as increased efficiency, financial inclusion, and economic growth. However, it also presents challenges that necessitate careful consideration and cooperation among nations. This study serves as a foundation for further research and policy discussions on the future of digital payments in the global economy.

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