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Article

Relationship of Payment Statistics and Sector-Wise Gross Value Added in the Indian Economy: A Regression Analysis Approach

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Abstract: This study explores the correlation between payment statistics and sector-wise Gross Value Added (GVA) in the Indian economy from 2011 to 2022, assessing the importance of payment and settlement systems. Through regression analysis, the impact of payment statistics on GVA across diverse sectors is assessed. The results indicate that, during the specified period, payment statistics exhibit a significant influence on sector-wise GVA. These findings underscore the pivotal role of payment and settlement systems in the Indian financial landscape.

Keywords: Gross Value Added; Indian economy; Payment and Settlement Systems; Regression analysis

JEL Classification: G21; C12; C43

Introduction

In today's global economy, the functioning of payment and settlement systems (PSS) is of paramount importance. These systems facilitate secure and efficient transactions, enabling the flow of funds between individuals, businesses, and financial institutions. Policymakers worldwide recognize the significance of PSS and have focused on promoting their safety, efficiency, and accessibility. The Committee on Payment and Settlement Systems (CPSS), now part of the Bank for International Settlements (BIS), has played a leading role in these efforts. The CPSS's publication of the "Red Book" in 1990 established principles for PSS design and operation, and it continues to monitor and analyze PSS developments.

One crucial area of concern for PSS is their safety and soundness. To ensure resilience against risks like credit, liquidity, and operational challenges, many countries have established regulatory frameworks for PSS oversight. These frameworks typically include requirements for risk management, business continuity planning, and legal and operational structures. International standards and guidelines, such as the Principles for Financial Market Infrastructures (PFMI) issued by the CPSS and IOSCO, promote consistency and provide a common framework for PSS oversight across jurisdictions. Efficiency is another critical aspect of PSS. It encompasses transaction speed, cost-effectiveness, and customer usability. Technological advancements like blockchain and distributed ledger technology offer opportunities for PSS to enhance efficiency and foster innovation. However, they also introduce new challenges and risks, such as interoperability and cyber threats.

Accessibility is a key consideration, especially for underserved populations and small businesses. While initiatives like mobile money and digital identity systems have sought to improve

financial inclusion and expand PSS access, significant gaps remain, particularly in low-income countries and rural areas.

India has witnessed a rapid digitalization in payments in recent years. This has been driven by a number of factors, including the demonetization of high-value currency notes in 2016, the government's push for digital payments, and the rise of smartphones and internet penetration. The shift to digital payments has had a significant impact on the Indian economy. It has made transactions more convenient and efficient, and has reduced the costs associated with cash handling. It has also helped to bring more people into the formal financial system. One of the key questions that arises in this context is whether the increase in digital payments has led to an increase in economic activity.

This study aims to examine the relationship between payment statistics and sector-wise gross value added (GVA) in the Indian economy over an 11-year period from 2011 to 2022. The findings of this study will provide insights into the impact of payment statistics on the economic performance of different sectors in India. It will contribute to a better understanding of how payment systems influence sector-wise GVA and can potentially guide policymakers, industry stakeholders, and regulators in enhancing the efficiency and effectiveness of payment and settlement systems to promote economic growth. The next sections will discuss the brief history of payments, Indian payment systems, regression analysis between payment stats and GVA of various economic sectors.

Background

The evolution of payment and settlement systems can be traced back to ancient civilizations, where various forms of exchange were utilized. One of the earliest systems was barter, where goods and services were exchanged directly. However, this method had limitations due to the need for a mutual desire for the exchanged items and the absence of a standardized value measure. The introduction of currency brought about significant advancements in payment systems. In the 7th century BC, Lydia (now Turkey) introduced the first coinage made of electrum, a natural gold and silver alloy. Coins became a standardized unit of value, facilitating transactions due to their portability and ease of counting.

During the Middle Ages, bills of exchange emerged as popular payment instruments. These documents represented promises to pay specific amounts in the future and were widely used by merchants to settle transactions and finance trade. Subsequently, banks began issuing their own notes, backed by gold and silver reserves, which gained acceptance as a means of payment. The advent of telegraphy in the 19th century revolutionized payment systems by enabling faster communication and more efficient settlement. Telegraphic transfers, involving the transfer of funds between banks via telegraph, became prominent payment instruments.

The 20th century witnessed further evolution with the introduction of electronic payment systems. The BankAmericard, launched in 1958, was the first electronic payment system, allowing customers to make credit-based purchases. The rise of the internet in the 1990s led to the emergence of online payment systems like PayPal, providing secure transactions without revealing credit card details. In recent years, blockchain technology and cryptocurrencies have garnered significant attention. Blockchain has the potential to revolutionize payment systems, enabling fast, secure, and cost-effective transactions. Cryptocurrencies, such as Bitcoin, offer an alternative to traditional currencies and are increasingly utilized for payments.

Indian Financial System & PSS

The Indian financial system has a rich historical background, evolving from ancient barter systems to modern digital payment platforms. In the past, the financial system relied on direct exchanges of goods and the introduction of coins. The medieval period saw the advent of paper money through the hundi system, enabling long-distance transactions. European colonial powers introduced modern banking practices, leading to the establishment of the Bank of Bengal and the introduction of paper currency.

Post-independence, the Indian financial system experienced rapid growth and transformation. The Reserve Bank of India was established as the central regulatory authority, and nationalization of

banks promoted financial inclusion. The introduction of electronic fund transfer systems, such as RTGS and NEFT, revolutionized the payment landscape. In recent years, technological advancements have further shaped the Indian financial system. Digital payment platforms like Paytm and PhonePe have gained popularity, offering convenient and secure transactions.

Overall, the Indian financial system has evolved over time, embracing technological innovations to provide efficient and accessible payment solutions for its diverse population. The government's demonetization drive in 2016 aimed to reduce cash transactions and promote digital payments. The adoption of block chain technology in the financial sector has the potential to revolutionize the payment and settlement system further. The Indian financial system has come a long way, from the barter system to modern digital payment platforms. Today, the Indian financial system is well-regulated, inclusive, and technologically advanced, offering a wide range of financial services to individuals and businesses alike.



Source: Corporate Finance Institute

Figure 1. Overview Major Participants in Financial Sector.

Review of Literature

Coibion, Gorodnichenko, Weber (2020) brought to light a crucial revelation. In the throes of the pandemic, U.S. households utilized only 40% of their stimulus payments due to constrained spending opportunities. They held out hope for a brighter future, suggesting that as the pandemic recedes, forthcoming stimulus payments could prove more effective. To achieve this, they recommended a broader array of policies aimed at stimulating aggregate demand [1].

Carstens (2019) guided our attention to the challenges posed by central bank digital currencies (CBDCs). He emphasized that the discourse surrounding CBDCs heralds fundamental transformations in the monetary system. Of notable concern was the apparent absence of a clear societal demand for CBDCs, and the considerable implications for the operational and financial stability of the entire system [2].

Zandi, Singh, Irving (2013) offered a revelation of economic significance. They found that electronic payments, particularly those involving cards, catalyze economic growth by enhancing transaction efficiency, expanding consumer access to credit, and instilling confidence in the payment system. Their research unveiled a positive correlation between the penetration and usage of card payments and economic growth, and as a result, they championed policies that encourage the adoption of electronic payment methods [3].

Noviana, Darma (2020) embarked on a journey into the realm of digital marketing strategies in Indonesia, with a focus on the effectiveness of content marketing and social media promotion during the COVID-19 pandemic. Notably, they crowned mobile banking as the preferred payment method in the "New Normal Era"[4].

Hasan, De Renzis, Schmiedel (2012) emphasized the pivotal role of electronic retail payments in fostering economic growth, with a special nod to the positive impact of card payments. Their support for policies aimed at promoting electronic retail payment instruments underscored the importance of these choices in propelling economic progress [5].

Moreno-Brid (1998) presented an insightful analytical model that laid bare the constraints on Mexico's economic growth. The primary impediment was the nation's inability to generate sufficient foreign exchange. Within this context, Moreno-Brid discussed strategies and challenges to promote economic growth and alleviate the balance-of-payments constraint [6].

Nakaso (2017) offered a historical perspective on the evolution of central bank payment and settlement systems. He underscored their adaptability in the face of economic and technological shifts, notably the transition from outdated paper-based systems to efficient digital counterparts and the widespread adoption of real-time gross settlement (RTGS) systems [7].

Banerjee and Sinha (2023) delved into the impact of digital currencies on financial inclusion in India, with a specific focus on Central Bank Digital Currencies (CBDCs). They proposed that digital currencies could have a positive influence on various economic and financial aspects. However, they also acknowledged the need for further research to fully understand their potential [8].

Ali and Salameh (2023) conducted an investigation into the payment and settlement system in Saudi Arabia. They uncovered a concerning trend: traditional payment methods were on the decline, while online payment methods like Mada and E-payment were on the rise. They also pointed out critical issues related to security, traceability, and privacy within the system, advocating for substantial improvements [9].

Cipriani, Goldberg, La Spada (2023) explored the use of financial sanctions in the realm of international relations, with a particular focus on their impact on the international payment system and SWIFT. Notably, they highlighted the emergence of alternative systems in certain countries aiming to bypass Western-based infrastructures, underscoring the interplay between payments and global diplomacy [10].

Žičkienė, Melnikienė, Morkūnas, Volkov (2022) embarked on an impact assessment of direct payments (DPs) within the context of agricultural resilience in the European Union. Their findings revealed a complex reality: DPs had a positive impact on economic resilience, but simultaneously exerted adverse effects on farm efficiency and other factors. In response, they recommended policy adjustments to enhance overall economic resilience [11].

Polasik, Huterska, Iftikhar, Mikula (2020) ventured into the world of the PayTech sector in Europe, examining the impact of the Payment Services Directive 2 (PSD2). Their exploration uncovered significant growth in the sector, driven by market potential, regulatory support, and evolving consumer payment habits [12].

The ECB Occasional Paper Series (2019) provided a comprehensive examination of the implications of crypto-assets for financial stability, monetary policy, and payment and market infrastructures. Importantly, they emphasized that, at the time of their analysis, the risks posed by crypto-assets to the EU financial system were deemed limited and manageable. Nevertheless, they stressed the importance of continuous monitoring and readiness for adverse scenarios [13].

Hock-Han Tee and Hway-Boon Ong (2016) focused on the adoption of cashless payment methods and highlighted the role of technology, including RFID and NFC, in propelling the development of cashless payments. They underscored the enduring impact of embracing cashless payment methods on economic growth [14].

Charles M. Kahn and William Roberds (2009) observed the intricate economics of payments. They emphasized that payment is a fundamental economic decision and called for a comprehensive understanding of payment economics among policymakers and economists. This understanding,

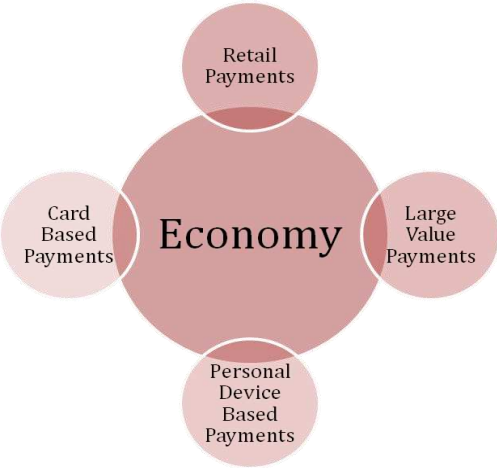
they argued, is essential for making informed decisions regarding payment systems and their far-reaching impact on economic activities [15].

Research Methodology

Payment and settlement systems, along with their impact on the economy, are critical components to understand in order to maintain the stability and growth of the financial system. The study will utilize a quantitative research design, analyzing secondary data from sources such as the Reserve Bank of India (Central Bank of India) and other reliable sources. Payment system indicators and sector-wise GVA data will be collected for the specified period, and regression analysis will be conducted to examine the relationship between payment statistics and sector-wise GVA.

The research will assess the role of payment and settlement systems in facilitating economic transactions within different sectors. It will explore how payment statistics, including electronic transactions, paper-based payments, and other relevant indicators, contribute to the overall GVA of sectors such as manufacturing, agriculture, services. The work of Hock-Han Tee and Hway-Boon Ong (2016) is referred for classifying all the payments into four major groups of Large Value payments (LVP), Retail Payments (RP), Mobile based (CPDD) and Card based payments (ATP), and for application of regression [14]. The Public Administration, Defence, and Other Services sector is typically excluded from payments and sector-wise GVA analysis because its activities are government-driven, non-profit oriented, have different data sources, and require specialized analysis. Focusing on market-based sectors provides a clearer economic picture. By focusing specifically on the analysis between sector-wise GVA and payment statistics, this study narrows down the research objective to provide a comprehensive understanding of the relationship between these variables in the Indian context.

Despite the popular macro-economic indicators like Gross Domestic Product (GDP), and National Income (NI) which provide valuable insights comprehensively. This work is more relied on sector wise GVA, where the reflection of intrinsic play of payments can be more clearly seen. A government or an economist could use GVA sector-wise to identify which sectors are lagging behind and need support. This information could then be used to develop policies to promote growth in those sectors. Monitoring and interpreting these indicators are vital for maintaining a stable and resilient financial ecosystem and facilitating informed decision-making and policy formulation. All the payment indicators by central bank which are grouped into four main classifications are presented below. The equation for multiple regression analysis is presented for every hypothesis under consideration [15].



Source: Author’s compilation

Figure 2. Impact of Major Payment (Independent Variables) Classification on Economy (Dependent Variable).

Payments Systems Indicators/Variables- Independent Variables

1. RTGS – Gross Settlements
 - A. CCIL operated systems
 - a. Government Securities
 - i. Outright
 - ii. Repo
 - iii. Tri-Parte Repo
 - b. CBLO
 - c. FOREX Clearing
2. Paper Clearing
 - A. Cheque Truncation System
 - B. Non-MICR Clearing
 - C. MICR Clearing
 - a. RBI Centres
 - b. Other Centres
3. Retail Electronic Clearing
 - A. ECS Credit
 - B. ECS Debit
 - C. IMPS
 - D. NEFT
 - E. NACH
4. Cards
 - A. Credit cards (ATM & POS)
 - B. Debit cards (ATM & POS)
5. Prepaid Payment Instruments
 - A. M-Wallets
 - B. PPI Cards
 - C. Paper Vouchers

Macro-Economic Indicators – Dependent Variables

Sector wise GVA

- A. Agriculture and Allied (AAP)
- B. Mining & Quarrying (MQP)
- C. Manufacturing (MCP)
- D. Electricity, Gas and Water Supply (EGP)
- E. Construction (CTP)
- F. Trade, Hotels, Transportation & Communication (THCP)
- G. Finance, Insurance, Real Estate & Business Services (FSP)
- H. Community, Social & Personal Services (CSPP)

A. Agriculture and Allied (AAP):

H0a1: Scalability of Payment & Settlements have no significant impact on Agriculture and Allied

H1a1: Scalability of Payment & Settlements have significant impact on overall Agriculture and Allied

$$AAP_t = \alpha_0 + \alpha_1 LVP_t + \alpha_2 RP_t + \alpha_3 CPDD_t + \alpha_4 ATP_t \quad (1)$$

B. Mining & Quarrying (MQP)

H0a2: Scalability of Payment & Settlements have no significant impact on Mining & Quarrying

H1a2: Scalability of Payment & Settlements have significant impact on overall Mining & Quarrying

$$MQP_t = \alpha_0 + \alpha_1 LVP_t + \alpha_2 RP_t + \alpha_3 CPDD_t + \alpha_4 ATP_t \quad (2)$$

C. Manufacturing (MCP)

H0a3: Scalability of Payment & Settlements have no significant impact on overall Manufacturing

H1a3: Scalability of Payment & Settlements have significant impact on overall Manufacturing

$$MCP_t = \alpha_0 + \alpha_1 LVP_t + \alpha_2 RP_t + \alpha_3 CPDD_t + \alpha_4 ATP_t \quad (3)$$

D. Electricity, Gas and Water Supply (EGP)

H0a4: Scalability of Payment & Settlements have no significant impact on Electricity, Gas and Water Supply

H1a4: Scalability of Payment & Settlements have significant impact on Electricity, Gas and Water Supply

$$EGP_t = \alpha_0 + \alpha_1 LVP_t + \alpha_2 RP_t + \alpha_3 CPDD_t + \alpha_4 ATP_t \quad (4)$$

E. Construction (CTP)

H0a5: Scalability of Payment & Settlements have no significant impact on Construction

H1a5: Scalability of Payment & Settlements have significant impact on Construction

$$CTP_t = \alpha_0 + \alpha_1 LVP_t + \alpha_2 RP_t + \alpha_3 CPDD_t + \alpha_4 ATP_t \quad (5)$$

F. Trade, Hotels, Transportation & Communication (THCP)

H0a6: Scalability of Payment & Settlements have no significant impact on Trade, Hotels, Transportation & Communication

H1a6: Scalability of Payment & Settlements have significant impact on Trade, Hotels, Transportation & Communication

$$THCP_t = \alpha_0 + \alpha_1 LVP_t + \alpha_2 RP_t + \alpha_3 CPDD_t + \alpha_4 ATP_t \quad (6)$$

G. Finance, Insurance, Real Estate & Business Services (FSP)

H0a7: Scalability of Payment & Settlements have no significant impact on Finance, Insurance, Real Estate & Business Services

H1a7: Scalability of Payment & Settlements have significant impact on Finance, Insurance, Real Estate & Business Services

$$FSP_t = \alpha_0 + \alpha_1 LVP_t + \alpha_2 RP_t + \alpha_3 CPDD_t + \alpha_4 ATP_t \quad (7)$$

Results & Discussion

In the period from 2011 to 2022, the analysis of sector-wise Gross Value Added (GVA) influenced by payment statistics becomes the focus of this study. Table 1, which presents the Payment & Settlement Statistics of India, offers information of classified and grouped various payment and settlement indicators. These indicators include cash, electronic transactions, and digital payments. These statistics play a crucial role in evaluating the efficiency and reliability of financial transactions within the economy. Table 2 offers descriptive statistics of Independent Variables, namely LVP, RP, CPDD, and ATP. This table presents descriptive measures such as the mean, standard error, median, standard deviation, sum, and count for each independent variable. These statistics provide an overview of the distribution and characteristics of the independent variables used in the analysis.

Moving to Table 3, titled "Sector Wise GVA (Rupees in Crore) of India", it provides sector-specific GVA data. This table encompasses key sectors such as agriculture, forestry and fishing (AAP), mining and quarrying (MQP), manufacturing (MCP), electricity, gas, water supply, and other utility services (EGP), construction (CTP), trade, hotels, transport, communication, and services

related to broadcasting (THCP), and financial, real estate, and professional services (FSP). Similarly, Table 4 provides descriptive statistics of dependent variables. Aftermath, Table 5 presents the results of the regression analysis conducted in the study. The table showcases the p-values, multiple correlation coefficient (r) and adjusted R-square values for the assessing linear relationship between the independent variables (LVP, RP, CPDD, ATP) and the dependent variables (AAP, MQP, MCP, EGP, CTP, THCP, FSP).

It's important to note that the p-values, traditionally used to assess statistical significance, are not applicable in this context due to the reliable dataset compiled by Reserve Bank of India (Central bank of India), representing the entire population for the given period. This means that we do not need to rely on p-values to draw conclusions about the relationships between payments and GVA.

The findings show consistent and practical impact across all sectors. Sectors such as Agriculture, Manufacturing, Electricity, and Financial Services are strongly influenced by the types of payments, while THCP and Construction sectors are moderately impacted. In contrast, Mining exhibits relatively weaker relationships. The model provides a good fit for most sectors, especially Agriculture and Financial Services.

Table 1. Payment & Settlement Statistics of India.

Year	RTGS (LVP)		Retail Payments (RP)		Personal Digital Device- Mobile & Internet Banking(CPDD)		Cards (ATP)	
	Volume (Lakh)	Value (Rupees Crore)	Volume (Lakh)	Value (Rupees Crore)	Volume (Lakh)	Value (Rupees Crore)	Volume (Lakh)	Value (Rupees Crore)
2011-12	550.5	107979058	5124.4	2057560	255.6	1820	57315.9	1551078
2012-13	685.18519	102635005	6940.69293	3188113.994	533.04294	5990.066661	61744.7976	1867065.276
2013-14	811.08932	90496804.3	11083.22515	4785628.682	947.08822	22418.19735	72191.3173	2215958.051
2014-15	927.82076	92933288.68	16874.41241	6536551.235	1719.21586	103530.3032	84239.8655	2541527.446
2015-16	983.41828	103555163.7	31415.2753	9140813.872	3894.9127	404090.5736	100386.735	2939765.29
2016-17	1078.56417	125365207.6	42049.56329	13225012.03	9768.4768	1310475.905	120558.652	3021400.196
2017-18	1244.57063	146743199.4	54672.91968	19201797.73	18722.62526	1473854.49	133586.197	3821463.753
2018-19	1366.29671	171552060.5	71132.64947	25875581.37	62003.18957	2958406.898	160462.563	4512210.138
2019-20	1506.78218	154906074.2	211855.1479	32043528.47	138736.0206	5781434.963	130147.877	4264324.476
2020-21	1591.92001	105599848.5	442180.2576	41485747.19	258033.6974	9201212.453	60905.8074	2889825.553
2021-22	10746.15	1201765709.88	893328.54	157540334.58	494613.87	21263233.85	981539.71	29624618.18

Source: Author's compilation from Central Banks's (Reserve Bank of India) Statistics.

Table 2. Descriptive Statistics of Independent Variables.

Descriptive Statistics Independent Variables	LVP	RP	CPDD	ATP
Mean	218502856.3	28643697.23866042	5185386294.214	
Standard Error	98656107.6313456486	511950803.0922440223	631	
Median	10797905813225012.031310475.905	2939765.29		
Standard Deviation	327205292.344630116.756470081.8958093306.188			
Sum	2403531420315080669.2	42526467.759249236.36		
Count	11	11	11	11

Table 3. Sector Wise GVA (Rupees in Crore) of India.

Year	Agriculture, Forestry and Fishing (AAP)	Mining &Quarrying (MQP)	Manufacturing (MCP)	Electricity, Gas, Water Supply & Other Utility (EGP)	Construction (CTP)	Trade, Hotels, Transport, Communication and Services Related to Broadcasting (THCP)	Financial, Real Estate and Professional Services (FSP)
2011-12	1501946	261035	1409985	186668	777334	1413117	1530879
2012-13	1524289	262609	1486874	191635	780050	1551143	1680031
2013-14	1609198	263106	1560709	199601	800771	1652062	1867407

2014-15	1605714	288685	1683937	214047	835229	1807690	2073714
2015-16	1616146	317973	1903850	224158	865335	1992823	2294785
2016-17	1726004	349248	2054764	246497	916445	2146379	2492967
2017-18	1840023	329612	2209428	272650	964306	2368419	2537190
2018-19	1878598	326817	2328992	294147	1026789	2538757	2714222
2019-20	1982303	321766	2261294	300675	1038680	2689726	2897393
2020-21	2048032	294024	2247740	289771	962835	2147679	2961910
2021-22	2109697	327984	2470822	311598	1073595	2385605	3087360

Source: Author’s compilation from Central Banks’ (Reserve Bank of India) Statistics.

Table 4. Descriptive Statistics of Dependent Variables

Descriptive Statistics Dependent Variables	Agriculture, Forestry and Fishing (AAP)	Mining & Quarrying (MQP)	Manufacturing (MCP)	Electricity, Gas, Water Supply & Other Utility (EGP)	Construction (CTP)	Trade, Hotels, Transport, Communication and Services Related to Broadcasting (THCP)	Financial, Real Estate and Professional Services (FSP)
Mean	1767450	303896.2727	1965308.636	248313.3636	912851.7273	2063036.364	2376168.909
Standard Error	65022.67745	9475.113848	113085.3562	14239.785	32565.76663	126272.8316	160410.6502
Median	1726004	317973	2054764	246497	916445	2146379	2492967
Std. Dev.	215655.824	31425.39748	375061.6957	47228.02393	108008.4289	418799.6035	532021.939
Sum	19441950	3342859	21618395	2731447	10041369	22693400	26137858
Count	11	11	11	11	11	11	11

Source: Author’s compilation using Data Analysis tool of Microsoft Excel.

Table 5. Regression Analysis: P- Values, correlation coefficient (r) and Adjusted R square values.

	AAP	MQP	MCP	EGP	CTP	THCP	FSP
P-Value	a**	a**	a**	a**	a**	a**	a**
Multi r	0.98	0.79	0.96	0.95	0.93	0.89	0.97
Adjusted R ²	0.94	0.37	0.93	0.86	0.78	0.65	0.90

a** implies the value is <0.001, highly significant. Source: Author’s compilation using Data Analysis tool of Microsoft Excel.

Conclusions

The study's findings signify the role that payments play in driving economic growth. An increase in payments translates to heightened demand for goods and services, subsequently stimulating production and employment. Agriculture, manufacturing, and financial, real estate, and professional services are highly dependent on efficient payment methods, including digital and card-based payments. Informal nature in other sectors might be a cause for lesser response to scalability of payments. The construction sector can benefit from diversifying payment methods, and utility services can enhance GVA through streamlined, digital payment processes. The trade, hotels, transport, communication, and services sector emphasizes the importance of payments. In the financial, real estate, and professional services sector, continuous innovation in payment technologies remains critical for growth.

To optimize GVA, sectors should consider enhancing payment methods and exploring digital, card-based, and other innovative payment solutions. However, it's important to recognize that while payments play a vital role, other sector-specific factors also contribute to GVA. Therefore, a holistic approach that includes streamlining payment processes and addressing broader industry dynamics is essential for sustained growth and competitiveness across these sectors. Additionally, sectors like mining and quarrying, which show less direct dependence on payments, should focus on investigating and understanding the unique determinants of GVA to formulate effective strategies for growth. Initiatives should be put in place to lower transaction costs, working collaboratively with the financial sector to minimize fees associated with transactions, such as ATM usage and bank transfers. Promoting financial inclusion is another imperative step, ensuring that individuals have

easier access to banking services, thereby granting them access to the formal financial system and simplifying payment processes. Investments in digital infrastructure, including mobile broadband networks and digital payment platforms, should be prioritized to facilitate digital transactions for both individuals and businesses. In addition to these measures, governments and policymakers might consider providing incentives for businesses to adopt digital payment methods, possibly through tax breaks or subsidies, thus promoting the wider acceptance of digital payments.

To this end, several key measures are suggested to facilitate payments and bolster economic growth. Payments are undeniably a fundamental driver of economic growth, necessitating the attention of governments and policymakers. Strategies aimed at promoting payments should be a focal point, encompassing efforts to reduce transaction costs, enhance financial inclusion, and invest in digital infrastructure.

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