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Determinants of Digital Payments: An Empirical Study with Reference to Bangalore City

Dr. Sri Hari. V¹, Dr.Gokul. G², Manisha M³, Dr.M. Jubi⁴, Dr. Firozkhan Pathan⁵

¹Associate Professor, Department of Commerce, Sindhi College, Bangalore.

²Assistant Professor & IQAC, Department of Management Studies, RJS Institute of Management Studies, Bengaluru.

³Assistant Professor, Department of Management, Sindhi College, Bangalore.

⁴Assistant Professor, Centre for PG Studies, Sindhi College, Bangalore

⁵Assistant Professor, Department of Management Studies, Visvesvaraya Technological University, Belagavi,

Email: sheshadri77@gmail.com¹, gokul4edge@gmail.com²,
manishamvakade1995@gmail.com³, firozkhan@vtu.ac.in⁴

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ABSTRACT:

Propelled by recent policy initiatives and technological developments, India's digital payment system is a promising success story in the making. In recent decades, the country has seen a significant increase in the use of digital payments. A digital payment, also known as an electronic payment, is the transfer of value from one payment account to another using a digital device such as a mobile phone, POS, or computer, as well as a digital communication channel such as mobile wireless data or SWIFT. The research sheds light on the multifaceted factors that have contributed to this surge, ranging from government initiatives promoting a digital economy to the safety concerns arising from physical contact-based transactions. This has propelled UPI's rapid adoption over traditional modes of payment within the Bangalore city. While highlighting the positive outcomes of this innovation effervescence, the study also delves into the challenges hindering a seamless transition. These challenges encompass technical intricacies that might impede user experiences, infrastructural gaps affecting accessibility, security apprehensions among users, awareness gaps, and issues related to the reliability of UPI transactions. The study has found statistically significant associations between age, occupation, e-wallet usage, and opinions on promoting cashless payments concerning respondents' preferred factors for online payment apps.

Keywords: Digital Payments, Covid-21, Pandemic, POS, Mobile wallets.

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1. Introduction

The consensus around the origin and the forms of ancient money has kept changing over the course of recorded history. But, what has not changed over the years is what money does; broadly, it facilitates trade in goods and services as medium of exchange and acts as a credible store of value. Modern day trade demands massive payments to be settled fast over long distances with minimum transaction cost. Evidently, to suit these needs the payment systems are being digitized globally. Cash, however, remains a crucial part of the trade. Therefore, the discourse on the current age payment system revolves around cash vs digital transactions. A digital payment, often known as an e-payment, is a method of making electronic payments between a payer and a payee. Both the payer and the payee use digital modes to complete the transaction. Right from barter system to paper money, there has been a huge evolution in the modes of payment in India. And now in the second decade of the millennium with the youth and coming generation, cashless i.e., digital payment mode is the new phase of payments. Before the evolution. The basic concept of traditional banking was that the users have to go the bank for the primary banking requirement such as withdrawal or deposit of cash, funds transfer, verifying statement of accounts etc. It has been called as the original banks which was the method of past in the economy. They were the original commercial mediators to provide bank accounts. From the exterior they had the big buildings with pillars made by marbles but in the interior, it had an abundance of money in the box. This has been called "Bank". They were big athletes in the commercial markets. They converted the savings of the house into loans for business as an investment. Traditional Banking designed on IT acceptance. The Indian Banking Sector arose in the world of technology in the beginning of 1990s. In India public sector banks have been influenced by the banking sector, which occupied above 80% base of total asset. (Gupta & Gupta, 2020).

Overall, the Indian economy has witnessed a remarkable transformation towards a digital and cashless payment ecosystem, driven by the government's initiatives, the efforts of various stakeholders, and the increasing popularity of mobile wallets and payment apps. As the digital payment landscape continues to evolve, it is expected to further boost financial inclusion and pave the way for a more efficient and convenient mode of conducting transactions.

2. Literature Review

Venkatesh and Morris (2000) where they found that men placed a greater emphasis on "usefulness" while women placed a greater emphasis on "ease of use" in determining Intention to Adopt. In the case of mPayment, while the usefulness of mPayment can be established by its increased transaction speed and convenience, the process of using mPayment has not been proved to be straightforward or trouble-free. Therefore, the lower female intention to adopt may be partially attributed to providers' inability to demonstrate the ease of use of mPayment systems. This finding is also consistent with prior studies that have found gender to be an important moderating variable in the context of e-commerce.

Bellman, et al., (1999) found in their study that consumers' digital lifestyle traits were better predictors of online buying behaviours than demographics; therefore, four technology related traits, length of cell phone use, frequency of shopping online, technical ability, and self-reported new technology adopter category, were also included in the study.

M. C. Joshi, (2017) With the commencement of the Digital India initiative in 2015, the Indian government pushed hard for the adoption of cashless transactions. It was a

campaign to urge Indian businesspeople and citizens to embrace digital technology in their daily lives in order to boost the country's economy by facilitating paperless, anonymous, and cashless transactions. Various means of digital payment have been made available under the national payment corporation of India (NPCI) in order to encourage cashless transactions and convert the entire country into a cashless India.

Shamsher, Rana, (2017) The demonetization resulted in unprecedented growth in digital payments. By February of this year, digital wallet companies had grown by 271 percent. government and private sector companies such as Paytm, Freecharge, and Mobikwik have been aggressively pushing several digital payment applications, including the Aadhaar Payment app, the UPI app, and the National Payments Corporation of India (NPCI) developed the Bharat Interface for Money (BHIM) app. Digital transfers using apps have brought behavioural change and helped in the adoption of digital payment. This has resulted in the ease of money transfer in rural areas which was not touched earlier by the digital payment method. Many foreign investors now want to invest in the digital payment industry, which is a new attractive destination because of the scope of tremendous expansion in India.

Soat, (2018) customers in the Asia- Pacific region had the highest degree of trust and enthusiasm for utilizing mobile devices for e-transactions. Businesses have significantly benefited from digital payment methods, while consumers have increased their use of mobile devices for daily activities in recent years.

Madan (2021) High internet connectivity, mobile data accessibility, a robust wireless network, an inclination toward new and innovative technology, the digital India policy, and different financial inclusion initiatives are just a few of the significant factors driving the increased use of mobile payments in India.

Ramachandran et al. (2018) explores the factors influencing consumer trust and adoption of digital payment systems in India. The research highlights the importance of security features, such as two-factor authentication and encryption, in building customer trust and encouraging participation in digital transactions.

Bhattacharya (2020) investigates the relationship between financial literacy and the adoption of digital payment methods among Indian consumers. The research underscores the need for educational campaigns and awareness programs to enhance financial literacy and enable customers to make informed decisions regarding digital payment adoption.

Rana, (2017) analysed customer perception and the impact of demographic factors on the adoption of a digital mode of payment. For the study, they collected primary data from 150 respondents from different parts of Delhi. They found that demographic factors, except education, do not have much impact on the adoption of digital payments. ANOVA computation supported this finding as there was no significant difference perceived by the respondents on the basis of gender, age, profession, and annual income. It indicates that adoption of digital payment is influenced by the education level of the customer. If a person has studied beyond matriculation, he or she will be inclined to use the digital payment mode. It was also found that in areas where the education level is high, such as Delhi NCR and other metropolitan areas, the possibility of acceptance of digital payment is much higher. The increased use of smartphones and internet penetration in such areas aided in the adoption of digital payment.

Adharsh et al., (2018) found in the study of "Transformation towards E-wallet payments Systems pertaining to Indian Youth "that there are approximately 80.5 million users of digital wallets in India and the major group who uses the digital wallet services is the youth. The objective of the researcher is to analyze the impact of digital payments after demonetization on the daily expenses of students, for which they have conducted a survey by asking various questions to a sample size of 160 respondents.

They found that approximately two-thirds of youth use mobile recharges and ticket bookings from online modes as it's less time-consuming and more convenient to make transactions. They also noted that various cash backs, freebies, loyalty points, or redemptions attract them to make digital payments and avail the best offers out of them

Research Gap

The research gap identified in the context of mobile banking growth during COVID-21 in India is the lack of financial inclusion and technological barriers faced by certain households. The findings suggest that many households were unable to use digital payments due to the absence of financial accounts for making or receiving payments. Additionally, a lack of home internet connectivity was a significant hindrance for these families, despite having bank accounts or prepaid cards. This gap indicates that while there has been considerable growth in mobile banking and digital payments during the COVID-21 pandemic, a segment of the population is still excluded from participating in these digital financial services. The inability to access the internet from home becomes a limiting factor for using mobile banking services, which often rely on online platforms for transactions. According to this report, UPI acceptance is expanding faster than other ways of payment among consumers in Bangalore city.

Objective of the Study

- To study the impact of Digital payments
- To analyse the mode of payment and problems faced by them while during online payment at the time of Covid 21 in Bangalore city.
- To suggest the challenges faced while Covid 21 on Digital payments in Bangalore city.

3. Research Methodology

The study on mobile banking growth during COVID-21 in India is descriptive and analytical, as it seeks to explore and understand the impact of the pandemic on mobile banking services and the shift from traditional banking to mobile banking.

The descriptive aspect of the study involves providing a detailed account of the changes and trends observed in mobile banking usage during the COVID-21 period. It examines the growth rates, adoption patterns, and usage behavior of customers regarding mobile banking services. This descriptive analysis helps in presenting a comprehensive picture of the transformation in the banking sector due to the pandemic.

The analytical aspect of the study involves deeper investigation and interpretation of the data collected. It aims to identify the factors that contributed to the surge in mobile banking usage during the pandemic. This analysis may include identifying the specific demographics or regions that experienced the highest growth in mobile banking, understanding the motivations behind customers' shift towards digital banking, and exploring the challenges and opportunities faced by banks and customers during this transition.

The study uses a mixed-method approach, which involves collecting and analyzing both primary and secondary data. Primary data is gathered through surveys, interviews, or observations directly from customers, banks, or other relevant stakeholders. This may include data on customer preferences, usage patterns, satisfaction levels, and challenges faced during mobile banking adoption. Secondary data is sourced from existing literature, reports, and publicly available data related to mobile banking, the banking sector, and the impact of COVID-21 on the economy. This data can provide context and additional insights to complement the primary data collected in the study.

By using both primary and secondary data and employing a mixed-method approach, the study can provide a more comprehensive and nuanced understanding of the impact of COVID-21 on mobile banking growth in India. The descriptive and analytical components help researchers and policymakers gain valuable insights into the transformation of the banking sector and the implications of increased mobile banking adoption for the future of banking services in the country.

Sample Size and Sampling Method: The study collected data from 138 respondents out of a total sample size of 170. The sample selection was conducted using a simple random sampling approach, ensuring that each member of the population had an equal chance of being selected for the study.

Data Collection: The study gathered primary data through a questionnaire administered to the selected respondents. The questionnaire likely covered aspects related to mobile banking usage, preferences, challenges faced, and overall experiences during the COVID-21 pandemic. Additionally, secondary data was gathered from various sources, such as newspapers, periodicals, and websites, to provide context and support the findings.

Data Analysis: To analyze the data collected from November 2022 to April 2024, the study employed relevant statistical methods such as the t-test, Chi-square test, and ANOVA test. These statistical tests helped in drawing conclusions and identifying significant relationships or differences in the data. By combining both descriptive and analytical approaches and utilizing primary and secondary data, this study aims to provide comprehensive insights into the growth and impact of mobile banking during the COVID-21 pandemic. The statistical analysis of the data enables researchers to draw meaningful conclusions, make comparisons, and identify trends, contributing to a more robust understanding of the subject matter. However, it is essential to acknowledge the limitations of the study, such as potential biases in the sample and the scope of the research

Different Variables With Reference To Demographic Factor of the respondents

Age	No of Respondents	Percentage	Df	Significance Number
Below 30	64	46	0.2	0.536
31 – 40 years	37	27		
41 – 50 years	12	9		
51 and Above	5	4		
Total	118	100		

Gender	No of Respondents	Percentage	Df	Significance Number
Male	87	63	0.2	0.007
Female	48	35		
Transgender	3	2		
Total	138	100		

E-wallet usage	No of Respondents	Percentage	Df	Significance Number
Male	91	66	0.2	0.006
Female	44	32		
Transgender	3	2		
Total	138	100		

Promoting cashless payments	No of Respondents	Percentage	Df	Significance Number
Male	105	76	0.2	0.004
Female	33	24		
Transgender	0	0		
Total	138	100		

Paired T-test for mode of payment at time of Covid - 21

Factor for Paired Samples Correlations		N	Correlation	Sig.
Pair 1	Medicines & Medicines	138	0.610	0.00
Pair 2	Vegetables/Fruits & Vegetables/fruits	138	0.513	0.02
Pair 3	Groceries & Groceries	138	0.732	0.01
Pair 4	Bill payments & Bill payments	138	0.432	0.01
Pair 5	Others/Others	138	0.522	0.02

Factor	Mean	SD	Std Error mean	95% Confidence level		t	df	Sig. level
				Lower	Upper			
Medicines	-.161	.501	.031	-.179	-.043	-3.228	119	0.00
Vegetables/Fruits	-.134	.424	.044	-.176	-.055	-3.076	119	0.01
Groceries	-.117	.519	.032	-.155	-.071	-3.151	119	0.02
Bill payments	-.132	.431	.037	-.175	-.032	-2.703	119	0.05
Others	-.177	.522	.039	-.116	-.037	-2.703	119	0.02

The above table reveals the relationship between mode of payment at time of Covid 2021 for Medicines ,vegetables/fruit, groceries, bill payments, others category of payments are less than the table value. It concludes that there is a significant difference of mode of payment at time of Covid 2021

Chi square test for factor online payment site preferred by the respondents

Pearson Chi-Square	Value	df	Significance
Age	54.274a	20	0.00
Gender	22.699a	5	0.02
E-wallet usage	19.797a	15	0.04
Promoting cashless payments	26.652a	25	0.02

Based on the information provided in the table, it appears that the study conducted statistical tests to analyse the association between respondents' preferred factors for online payment apps and various demographic variables. The significance level (often denoted as α) in this context is set at 0.05, which is a common threshold used to determine statistical significance. Age: The computed p-value for age is 0.000, which is less than the significance level of 0.05. This indicates that there is a significant association between respondents' age and their preferred factors for online payment apps.

Occupation: The computed p-value for occupation is 0.000, which is less than the significance level of 0.05. Hence, there is a significant association between respondents' occupation and their preferred factors for online payment apps.

Gender: The computed p-value for gender is 0.02, which is more than the significance level of 0.05. As a result, there is no significant association between respondents' gender and their preferred factors for online payment apps.

E-wallet Usage: The computed p-value for e-wallet usage is 0.04, which is less than the significance level of 0.05. Thus, there is a significant association between respondents' e-wallet usage and their preferred factors for online payment apps.

Promoting Cashless Payments: The computed p-value for promoting cashless payments is 0.02, which is less than the significance level of 0.05. Consequently, there is a significant association between respondents' opinions on promoting cashless payments and their preferred factors for online payment apps.

In summary, the study has found statistically significant associations between age, occupation, e-wallet usage, and opinions on promoting cashless payments concerning respondents' preferred factors for online payment apps. However, no significant association was observed between gender and preferred factors for online payment apps in this analysis.

ANOVA for E-wallet usage, promoting cashless payments of respondents

Factor	Variable	Sum of Squares	df	Mean Square	F	Sig.
Medicines	Between Groups	2.102	5	.410	.790	.389
	Within Groups	101.15	114	.453		
	Total	103.25	119			
Vegetables/Fruits	Between Groups	1.765	12	.138	.230	.853
	Within Groups	94.831	107	.479		
	Total	96.596	119			
Groceries	Between Groups	1.102	3	.323	.696	.453
	Within Groups	121.15	116	.343		
	Total	122.25	119			
Bill payments	Between Groups	1.102	5	.207	.715	.440
	Within Groups	95.148	114	.267		
	Total	96.25	119			
Others	Between Groups	2.102	2	.172	.340	.829
	Within Groups	99.148	117	.431		
	Total	101.25	119			

The table shows the significant difference between for E-wallet usage, Promoting cashless payments of respondents as per acceptance of significant value ie ($p > 0.05$), purchasing and payment mode for Medicines Vegetables/Fruits, Groceries, Bill payments, others are not significant associate between for E-wallet usage, Promoting cashless payments of respondents.

Suggestion

Based on the findings from the study on the growth of mobile banking in India during COVID-21, several suggestions can be made to address the identified challenges and capitalize on the opportunities presented by digital payments:

Improve Server and Connectivity: Banks and digital payment apps should invest in robust server infrastructure and ensure seamless connectivity to minimize disruptions in digital payment services. This will help enhance the overall user experience and instill confidence in customers.

Enhance Customer Awareness: Regularly educate customers about new features, updates, and security measures through various communication channels. Providing up-to-date information will empower users to make informed decisions and use digital payments more confidently.

Organize Customer Workshops: Conduct workshops or webinars to engage with customers directly and address their concerns. These sessions can be used to clarify doubts, demonstrate new features, and provide solutions to common issues faced during digital transactions.

Promote Security Awareness: Educate customers about common fraud and scam tactics, advising them not to share sensitive information like OTP, PIN numbers, or banking details with anyone. Encourage the use of AI tools to detect and prevent fraudulent activities.

Invest in AI-Driven Security: Banks and digital payment apps should continuously improve security measures by leveraging AI tools and technologies. These tools can help detect suspicious activities and provide real-time fraud prevention, enhancing the overall safety of digital transactions.

Focus on Age-Specific Targeting: As the study highlights the high usage of digital payments among respondents aged 20-45, banks and payment apps can tailor their marketing and user interface to cater to this age group's preferences and needs.

Popularize Preferred Payment Methods: Given that respondents prefer Paytm and Google Pay, banks and payment apps can collaborate with these platforms and offer incentives to encourage more users to adopt digital payments.

Address Financial Inclusion and Internet Access: Collaborate with government agencies and telecommunication providers to expand financial inclusion and improve internet access in underserved areas. This will help bring more people into the digital payments ecosystem.

Regular Security Updates: Continuously update and improve security features to stay ahead of evolving cyber threats. Regular security updates can reinforce user confidence in the safety of digital payment platforms.

Emphasize Time-Saving and Security Benefits: Emphasize the time-saving and security benefits of digital payments in marketing campaigns and educational initiatives to attract more users and boost overall adoption.

By implementing these suggestions, banks and digital payment apps can further strengthen the growth of mobile banking and digital payments in India, ensuring a smoother and more secure financial experience for customers across all demographics.

4. Conclusion

The study on the growth of mobile banking in India during COVID-21 reveals several important trends and insights regarding digital payments. The impact of the pandemic has significantly increased the utilization rate of digital payments as contactless transactions became a key preference for safety and convenience.

One of the main challenges hindering the adoption of digital payments is the lack of internet connectivity and financial bank accounts among certain segments of the population. The study also found that a significant shift from cash to digital payments is taking place, with the majority of respondents embracing digital payment methods. The preferred digital payment options are PTM, Google Pay, and E-wallets, primarily used by individuals aged between 20 and 45 years for various financial activities.

However, there is a need for more awareness campaigns to familiarize consumers with different digital payment platforms. Many respondents are limited to using only a few options due to a lack of awareness about other available services. Educating customers about the latest features and benefits of various digital payment methods can encourage wider adoption and improve the overall digital payment ecosystem.

In conclusion, the study highlights the growing importance of digital payments in India and the need for continuous efforts to address connectivity issues, enhance financial inclusion, and promote awareness among consumers. By addressing these challenges, the country can further accelerate its transition towards a more inclusive and digital-centric financial landscape.

Limitations of the Study:

- Some respondents may not be interested in providing accurate information, the information provided by them may be biased.
- Respondent attempted to avoid making a statement. This was one of the most significant restrictions encountered, as it was difficult to analyses and get a correct conclusion.
- The duration of the study for 6 month ie Nov 2022 to April 2024.
- Time was one the constrain to collect the data, when we approach for data collection respondent were not ready to fill the questionnaire for the study.

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