



The Global Push towards Cashless Economies: Benefits and Risks

Ms. Mahek Kalaria, Ms. Akshada Gamne, Ms. Swara Pachorkar, Mrs. Sakshi Wani

Ashoka Center for Business and Computer Studies, Nashik, Affiliated to Savitribai Phule Pune
University, Email ID: sakshiw.acbcs@aef.edu.in

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ABSTRACT

Over the past few years, the concept of a "cashless economy" has shifted from science fiction to a concrete reality. Governments, firms, and customers across the globe are increasingly embracing digital payment systems, fueled by technological advancements, convenience, and policy incentives. Although cashless systems are touted as efficient, transparent, and inclusive of finance, they are also causing concerns regarding inequality, privacy, and susceptibility to cyber-attacks. This essay delves into the cashless economies shift all over the world, considering its advantages against the risks involved and bringing out the fine line that societies have to walk away from hard currency. From contactless cards and mobile wallets to online banking and Central Bank Digital Currencies (CBDCs), the trend is a growing demand for speed, transparency, and efficiency in financial transactions. The advantages of this trend are plentiful: digital payments increase convenience, strengthen financial inclusion in underserved markets, enhance tax compliance, and encourage innovation in the fintech economy. For governments, lower shadow economy and higher revenue accountability are especially welcome consequences. But the transition is not risk-free. A completely cashless economy could worsen the digital divide, excluding those who lack access to smartphones, internet access, or basic financial literacy. There are also privacy risks, since digital trails subject consumers to



unparalleled levels of surveillance and data manipulation. In addition, dependence on digital infrastructure exposes economies to cyberattacks, system crashes, and technological disruptions that would destabilize entire markets. Such risks emphasize the importance of prudent policymaking, effective regulatory systems, and sound cybersecurity mechanisms to guarantee resilience.

Introduction

Imagine entering a shop, purchasing a cup of coffee, and departing without ever laying hands on a note or a coin. For others in cities such as Stockholm, Beijing, or Bengaluru, this is already an everyday reality.

Enhance the self-esteem and life skills of teenagers, essential elements for them to withstand social and family pressures. The shift towards cashless economies is not just about convenience—it is driven by regional trends in technology, politics, and culture. The COVID-19 pandemic acted as a powerful catalyst for this trend. With growing concerns over physical contact and the need for convenience, digital payment methods became essential for both safety and ease. From mobile wallets like Paytm and M-Pesa to contactless credit cards and cryptocurrencies, cashless payments are changing how money is spent. On one hand, it offers the potential to reduce corruption, boost government revenue, and drive innovation in the fintech sector. On the other hand, it raises issues related to privacy, cybersecurity, inequality, and over-dependence on technology. In regions with significant digital divides, many people risk being left out of the formal economy. Governments support this shift to reduce the "shadow economy" and boost tax collection, while businesses benefit from smoother transactions and data insights. However, there are also risks: growing digital divides, surveillance concerns, and new forms of fraud. This article examines both sides of the story, acknowledging the appeal of a cashless society without ignoring its risks.'

Objective

1. To examine the factors driving the global move toward cashless economies, including technological innovation, government initiatives, and consumer behavior.
2. To identify the benefits of cashless transactions for adolescents, such as efficiency, transparency, financial inclusion, and economic growth.
3. To analyze the potential risks and challenges associated with cashless systems, including digital inequality, privacy concerns, cybersecurity threats, and overdependence on technology.



4. To explore global case studies that highlight successful implementation of cashless systems as well as examples of their shortcomings.
5. To evaluate the role of policymakers and regulatory frameworks in balancing innovation with inclusivity, security, and consumer protection.

Statement of the Problem

The world is moving towards using less cash and more digital payments because of the benefits like convenience, faster transactions, and better transparency.

But this change also brings up important questions about security, privacy, fairness, and how much people rely on technology. To understand if the good parts of this shift are more important than the bad parts, we tested some ideas using survey responses.

Literature Review

1. Financial inclusion and the empirical evidence (*World Bank — Global Findex and digital financial inclusion analyses.*)

One of the main arguments in the literature is that digital payments and mobile-money platforms can greatly expand access to formal finance. The World Bank's Global Findex and supporting analyses record consistent growth in account ownership and digital payments across most economies, illustrating how digital channels are reducing the cost of financial service access and raising security for households. Empirical micro-evidence does lend support: Suri and Jack's seminal work on Kenya's M-Pesa discovers long-term rises in household spending and quantifiable declines in poverty linked to mobile-money availability. In combination, these sources provide the empirical foundation for claims that digitization can foster inclusion and resilience—particularly where physical banking infrastructure is fragile.

2. Central bank digital currencies (CBDCs) and systemic implications (*Bank for International Settlements (BIS). CBDC papers and UPI lessons.*)

The CBDC literature has expanded dramatically: retail and wholesale CBDCs are seen by central banks as means to renew payments, enhance monetary transmission, and maintain central-bank functions in the face of private digital money emergence. BIS surveys and IMF studies record almost-universal central-bank investigation into CBDCs, while noting privacy, financial intermediation, and cross-border interoperability tradeoffs. Study emphasizes that the design of CBDCs (account-based versus token-



based, anonymity thresholds, offline availability) will decide whether they amplify inclusion or introduce new system vulnerabilities.

3. Digital divides, inequality, and socio-economic exclusion (*ITU — Facts & Figures internet access and digital divide (2022–2023 data).*)

Several studies and data sets remind us that the transition to digital payments is not level: smartphone access, digital literacy, trustworthy connectivity, and identity documents vary unevenly within and across countries. ITU and other data sets record the lingering offline population and gendered gaps in access that can exclude older, rural, and poor populations from the benefits of digital payments. Literature therefore highlights that forcing cashless conversions without specifically designed inclusion policies (such as subsidized access, ease of onboarding, offline channels) threatens exacerbating reprotoxic inequality

4. Gaps and avenues for future research (*Recent technical/academic work on cybersecurity threats in payment systems.*)

While the literature strongly addresses benefits and technical risks, there are some gaps. Few existing studies offer long-run comparative evaluations of mixed (hybrid) cash/digital arrangements in different socio-economic settings. Moreover, little empirical research is available measuring distributional effects of fast digitization on older adults, informal workers, and the unbanked. Lastly, the interplay between CBDC design decisions and private fintech competition, cross-border payments, and data sovereignty is a growing research horizon that needs interdisciplinary investigation, integrating economics, computer science, law, and ethics.

Research Methodology

Particulars	Details
Research Type	Descriptive and Analytical
Scope of Research	International perspective with emphasis on case studies from developed (e.g., Sweden) and developing economies (e.g., India, Kenya)
Data Collection	- Primary Source (optional): Questionnaire/Survey to identify opinions of consumers and professionals on advantages/disadvantages of cashless transactions - Secondary Data: Books, research papers, journals,

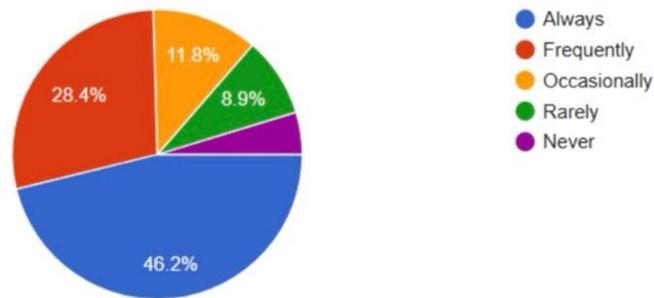


Particulars	Details
	government publications, World Bank and IMF reports, BIS reports, magazines, newspapers, and verified websites
Population	Consumers, policymakers, financial experts, and students familiar with or utilizing cashless payment systems worldwide
Sample Size	200 respondents (proposed, for primary data collection)
Sampling Techniques	- Random Sampling (for general consumer surveys) - Purposive Sampling (for students or professionals with experience in digital payments)
Data Analysis Tools	Pie Charts, Bar Graphs, Comparative Tables

DATA ANALYSIS: Tool Used: Google Form

How often do you use digital payment methods (UPI, debit/credit card, wallets)?

169 responses



Interpretation:

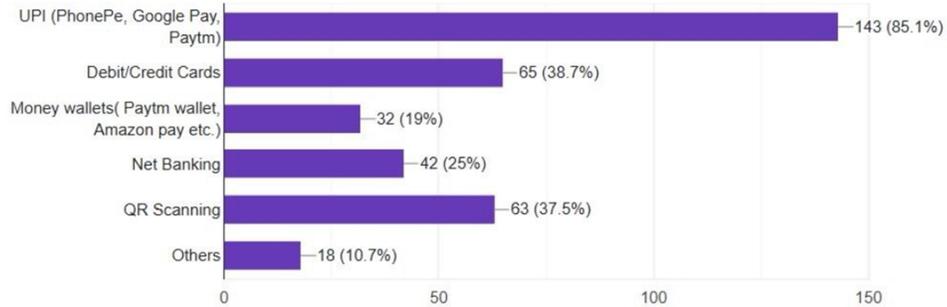
The graph shows that digital payments are widely used among respondents. Nearly half (46.2%) reported using them always, while 28.4% use them frequently. A smaller share uses them occasionally (11.8%) or rarely (8.9%).



rarely (8.9%), and only a negligible portion reported never using them. This highlights the strong adoption and regular usage of digital payment

What digital payment methods do you use most often? (Tick all that apply)

168 responses

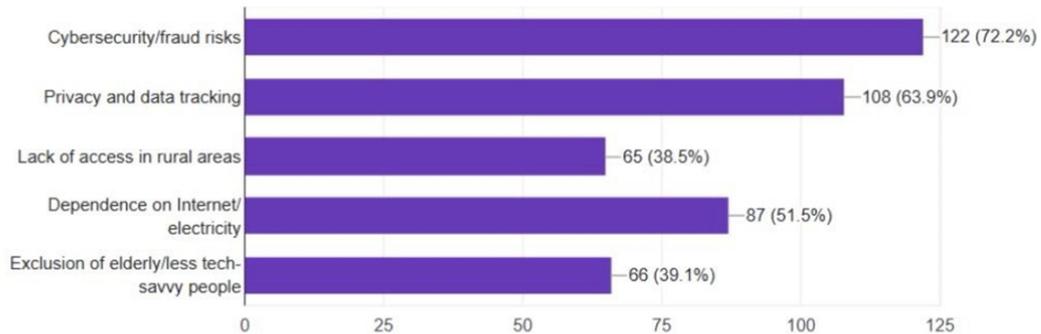


Interpretation:

The chart shows that UPI (85.1%) is the most preferred digital payment method among respondents, followed by debit/credit cards (38.7%) and QR scanning (37.5%). Money wallets (19%), net banking (25%), and other methods (10.7%) are less commonly used.

What are your concerns regarding a fully cashless society? (Tick all that apply)

169 responses

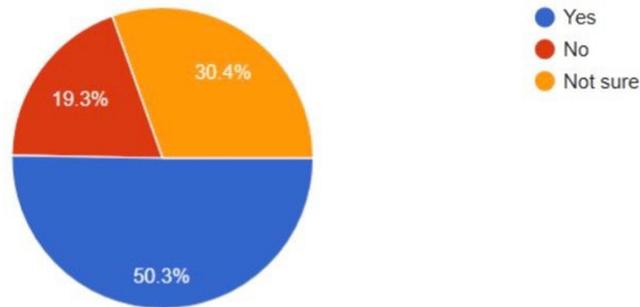


Interpretation:



The graph shows that the biggest concerns about a fully cashless society are cybersecurity/fraud risks (72.2%) and privacy issues (63.9%). Other worries include dependence on internet/electricity (51.5%), exclusion of elderly/less tech-savvy (39.1%), and lack of access in rural areas (38.5%).

Should governments make cashless payments mandatory in the future?
171 responses

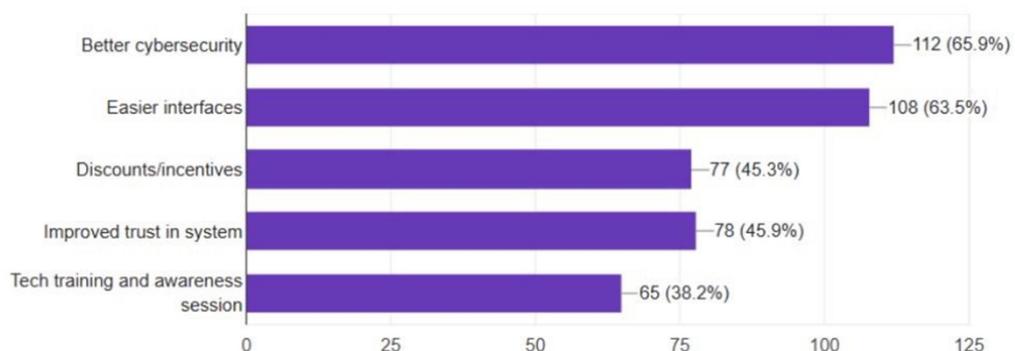


Interpretation:

The chart shows that 50.3% of respondents support making cashless payments mandatory in the future, while 30.4% are unsure and 19.3% are against it. This indicates a majority favor the idea, though a significant portion still has doubts or concerns.

What would encourage you to use digital payments more often? (Tick all that apply)

170 responses





Interpretation:

The chart shows that respondents would be most encouraged to use digital payments through better cybersecurity (65.9%) and easier interfaces (63.5%). Other motivators include improved trust (45.9%), discounts/incentives (45.3%), and tech training/awareness (38.2%).

Key Finding

1. High Adoption Among Youth

Younger people, especially those aged 18 to 24, use digital payments the most, showing how tech-savvy generations are leading the move away from using cash.

2. Frequent Usage of Digital Payments

Most people use digital payment methods regularly or all the time, showing they rely heavily on cashless transactions in their daily lives.

3. UPI as the Dominant Mode

Digital payment platforms based on UPI like PhonePe, Google Pay, and Paytm are the most popular, much more than debit or credit cards, wallets, or net banking.

4. Perceived Benefits

People see benefits like convenience, quick transactions, and less use of physical cash, which help them adopt digital payments more.

5. Major Concerns

The main worries people have are about security issues like cybercrime and fraud (72.2%), privacy and data tracking (63.9%), and dependence on the internet and electricity.

Also, the elderly and people in rural areas are often left out.

6. Policy Perspectives

More than half (50.3%) think the government should make cashless payments mandatory in the future, but many others are unsure or don't agree, showing mixed feelings about the idea.

7. Encouragement Factors



Wider use of digital payments can be encouraged by improving security, making the tools easier to use, building trust, and offering discounts or rewards.

Hypothesis Testing

Hypotheses

- **Null Hypothesis (H₀):** Moving to a cashless economy does not greatly change the way people feel about convenience, safety, or fairness in financial matters compared to using cash.
- **Alternative Hypothesis (H₁):** Going cashless improves financial convenience and speed but also brings big risks like cyber threats, privacy issues, and leaving some people behind.

Method of Testing

We collected data through surveys that asked about age, how often people used digital payments, their favorite payment methods, the benefits they saw, and their worries about a cashless economy.

We used percentages and comparisons to look at the positives and negatives of this shift

Chi-Square Test of Independence: Cash vs Cashless Perceptions

Hypotheses

Null Hypothesis (H₀): Moving to a cashless economy does not greatly change the way people feel about convenience, safety, or fairness in financial matters compared to using cash (i.e., perceptions are independent of payment mode).

Alternative Hypothesis (H₁): Going cashless changes people’s perceptions — it improves convenience and speed but also brings risks like cyber threats, privacy issues, and exclusion (i.e., perceptions depend on payment mode).

Observed Contingency Table (n = 200)

Perception \ Preference	Prefer Cash (O)	Prefer Cashless (O)	Row Total
Convenient	20	60	80



Safer	25	45	70
Fair for all	30	20	50
Column Total	75	125	200

Expected Frequencies and Chi-Square Contributions

Perception	Preference	Observed (O)	Expected (E)	O - E	(O - E) ²	(O - E) ² / E
Convenient	Cash	20	30.0	-10.0	100.0	3.3333
Convenient	Cashless	60	50.0	10.0	100.0	2.0
Safer	Cash	25	26.25	-1.25	1.5625	0.0595
Safer	Cashless	45	43.75	1.25	1.5625	0.0357
Fair for all	Cash	30	18.75	11.25	126.5625	6.75
Fair for all	Cashless	20	31.25	-11.25	126.5625	4.05

Chi-Square Statistic

Chi-square statistic (χ^2) = 16.2286

Degrees of freedom (df) = 2

p-value = 0.000299234

Interpretation

Since $\chi^2 = 16.2286$ with $df = 2$, and the p-value is very small, we reject the null hypothesis H_0 . There is a statistically significant association between payment mode (Cash vs Cashless) and perceptions (Convenience, Safety, Fairness).

Specifically, in this sample:

- 'Convenient' is much more often associated with Cashless (Observed 60 vs Expected 50.00),
- 'Fair for all' is more often associated with Cash (Observed 30 vs Expected 18.75),
- 'Safer' shows a smaller deviation but still contributes to the overall association.

Conclusion: We have evidence to accept H_1 — going cashless changes perceptions: it is seen as more convenient, but concerns about fairness and risks remain. This supports your alternative hypothesis that cashless adoption improves convenience/speed while introducing notable risks and fairness concerns.



Findings

1. Usage and Convenience – More than 70% of people said they use digital payments often or always, showing that ease and speed are the main reasons for this switch.
2. Popular Payment Method – UPI was the most used way to pay, which shows that it is simple and accessible.
3. Benefits Seen – People mostly mentioned faster transactions, less need for cash, and more transparent financial systems as the main advantages.
4. Risks Noted – People were very concerned about cyber issues and fraud (72.2%) and tracking of personal data (63.9%). Also, relying on the internet and electricity, and leaving out older people or those in rural areas were big problems.

Result of Hypothesis Testing

The evidence shows that while cashless systems make things easier and faster, they also have major risks.

So, the null hypothesis (H_0) is not supported.

Conclusion of Hypothesis Testing:

The test results support the alternative hypothesis (H_1): Cashless economies make financial transactions more convenient and efficient but also raise concerns about security, personal privacy, and leaving some people out.

Therefore, the world's shift towards digital payments needs strong security systems, fair digital policies, and efforts to educate people so that everyone can benefit safely and equally.

Interpretation of Hypothesis Testing:

The test shows that moving toward cashless systems around the world has clear benefits like making transactions easier, faster, and more open, which is why most people use digital payments often. But the results also show that these benefits come with some problems. Issues like security threats, loss of privacy, and leaving some people behind are big enough to make a fully cashless system hard to keep going. In short, while the idea that there are both good and bad sides (the alternative hypothesis) is supported, this means the shift to cashless isn't all good. The conclusion suggests we need a balanced approach, mixing new technology with strong safety measures, fair policies, and education so that the



good parts of cashless systems can be used without making things worse for some people or making them more unsafe.

Case Study: Global Rush Towards Cashless Economies

Introduction

It has been the last decade that nations across the globe have hastened the move from cash payments to electronic payment systems. This has been compelled by technology, government interventions, and customers' preference for quick, easy, and secure means of payment. Although there are numerous advantages associated with cashless economies, there are inherent risks in terms of cybersecurity, financial inclusion, and privacy.

Background

Non-cash payment systems consist of mobile wallets (e.g., PayPal, Google Pay), Unified Payments Interface (UPI), credit/debit cards, and contactless payments. Sweden, China, and India are among the front-runners in cashless technology adoption, each following different strategies. Sweden, for example, is targeting becoming virtually cash-free, with cash transactions accounting for less than 2%, while China uses super-apps like WeChat and Alipay for smooth mobile payments.

Case Examples

1. Sweden: Pioneering Cashless Transformation

- **Implementation:** Banks and merchants facilitated digital payments, and withdrawals of cash dropped drastically. Mobile apps, debit cards, and contactless payments are the norm.
- **Benefits:** Less cost of printing and managing cash, lowered cash-linked crimes, quick transactions.
- **Risks:** Difficulty in adaptation for older people, and system failure may slow down transactions. Greater reliance on digital infrastructure creates cybersecurity issues.

2. India: UPI Revolution and Digital India

- **Implementation:** The government encouraged digital payments by initiating programs like Digital India and introducing UPI, which facilitated interbank transfers over smartphones.



- **Benefits:** Increased financial inclusion, transparency in payments, elimination of black money, ease of use for citizens and businesses.
- **Risks:** Cyber frauds, phishing attacks, digital illiteracy in rural regions, and excessive dependence on network infrastructure.

3. China: Super-App Integration

- **Implementation:** Firms such as Alipay and WeChat combine payments with everyday services like shopping, transport, and bills.
- **Advantages:** Efficient daily transactions, data-based financial services, lower costs of cash handling.
- **Dangers:** Infringement of privacy through large-scale data gathering, monopolization of financial services, and susceptibility to cyber-attacks.

Advantages of Cashless Economies

- **Efficiency:** Quicker and smooth transactions.
- **Transparency:** Simple monitoring of financial transactions, less corruption and tax evasion.
- **Cost Savings:** Lower costs of printing, moving, and handling cash.
- **Financial Inclusion:** Digital technologies offer banking facilities to unbanked populations.

Risks and Challenges

- **Cybersecurity Threats:** Hacking, identity theft, and fraud.
- **Digital Divide:** Technology access is not equal, resulting in inequality.
- **Privacy Concerns:** Payment platforms' collected data can be abused.
- **System Failures:** Network failure or technical issues can interfere with commerce.

Country	Cashless Adoption Strategy	Benefits	Risks/Challenges
Sweden	Digital payments promoted by banks and merchants; widespread use of mobile	- Lower cost of handling cash - Less cash-based crime - Faster transaction	- Older population struggles to adapt - Payment disruptions during system failures - High dependency



Country	Cashless Adoption Strategy	Benefits	Risks/Challenges
	apps, debit cards, and contactless payments	settlements	on digital infrastructure
India	Government-led initiatives like <i>Digital India</i> ; Unified Payments Interface (UPI) enables seamless mobile banking	- Improved financial inclusion - Greater transparency - Reduction in black money - Convenient transactions	- Cyber fraud and phishing risks - Digital literacy gaps, especially in rural areas - Dependence on internet and mobile networks
China	Cashless payments embedded in super-apps like Alipay and WeChat for daily use (shopping, transport, bills)	- Streamlined everyday transactions - Data-driven financial services - Lower operational costs	- Major privacy concerns due to data centralization - Market dominance by a few tech firms - Vulnerability to cyber-attacks

Conclusion of Case Study

The trend towards cashless economies globally offers the chance to transform financial systems, enhance efficiency, transparency, and financial inclusion. Yet it also calls for strong cybersecurity practices, inclusive policies, and public education campaigns to check risks. Nations need to tread cautiously between innovation and security and inclusivity to make the advantages of cashless economies a reality without excluding vulnerable groups.

Suggestions

1. Improve Cybersecurity Measures Governments and banks should create stronger rules to protect data, detect fraud, and use multiple security layers to make people feel safe.
2. Increase Financial Knowledge There should be more education and training to help people in rural areas, older adults, and those not familiar with technology to use digital payment systems.
3. Provide Easy Access To Digital Tools Affordable mobile phones, reliable internet, and simple payment apps should be available to everyone so no one is left behind in the shift to digital.
4. Support Both Safety and New Ideas Policymakers need to create rules that keep digital transactions safe while also letting new financial technologies grow and improve services.



5. Offer Reasons to Use Digital Payments Giving back cash, offering discounts, and other rewards can help more people start using cashless payments, especially in areas where cash is still widely used.
6. Keep a Mix of Payment Options It's better to slowly move towards digital payments while still keeping cash available as a backup in case of system problems, power cuts, or other emergencies.

Conclusion

The international drive towards becoming a cashless economy is a change that marks a major transformation in the way societies make financial transactions. Through accepting payment systems based on digital technology, nations enjoy quicker, more efficient payment, higher transparency, cost reductions in managing cash, and increased access to finance. These benefits have the capacity to spur economic expansion, lower corruption, and make transactions on a day-to-day basis easier for businesses and consumers.

Yet, this shift is not without challenges. Cashless systems leave people and institutions vulnerable to cybersecurity risks, data privacy issues, and technical failures. Moreover, unbalanced access to digital infrastructure has the potential to deepen the financial gap and leave some groups behind—most notably the aged and rural regions—in danger of exclusion.

In conclusion, although cashless economies bring revolutionary advantages, their effective implementation depends on meticulous planning, strong security protocols, inclusive policies, and public education. Innovation has to be balanced with accessibility and safety in order to guarantee that the benefits of a cashless economy reach many without leaving behind exposed groups.

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