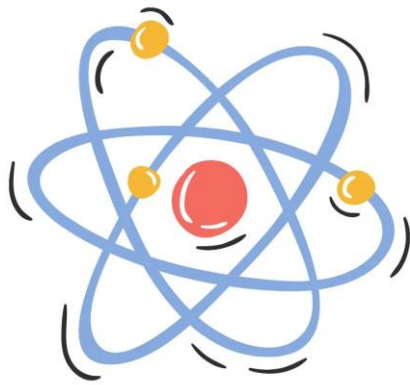




ISSN: 1672 - 6553

JOURNAL OF DYNAMICS AND CONTROL

VOLUME 9 ISSUE 2: 57 - 76

TRADITIONAL E-WALLETS VS. CRYPTO WALLETS: A COMPARATIVE STUDY OF FUNCTIONALITY AND USE CASES

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Abstract: The purpose of this study is to make a comparison between cryptocurrency wallets and regular digital E-wallets. The system based on internet payments as alternatives to traditional safekeeping mechanisms and cash disposal will be investigated in this study. Digital wallets are the electronic accounts created using some software's which store funds, allows users to make transactions and track the transaction histories using mobile or computer. These software's may be included in bank's app or as a private payment platform like Paytm or PhonePe etc. Mobile phones have revolutionised the way we conduct transactions, offering convenience and popularity due to their remarkable speed and ease of use. Cryptocurrencies completely rely on the electronic wallet to transact, process, and maintain balances, like Bitcoin, Ethereum, USDT etc. But the crypto wallets do not provide all the facilities that are offered through traditional digital wallets. This paper discusses the working of traditional digital wallets and the crypto wallets and aims to evaluate the differences between the two from the point of view of ease of functionality and its use cases in different domains.

INTRODUCTION

Digital technologies have an influence on every aspect of our life, and as a result, today's era is referred to as the "digital age." With the introduction of computing technology and increasing use of electronics, the process of digitalisation began. Today, digitalisation is viewed as an instrument for change that reaches beyond our daily lives to the way we transact, engage, and do business. Digital technology is progressively being used across various industries, including communication, media, shopping, healthcare, retail, and manufacturing. Innovations in e-commerce, e-communications, and the ever-expanding reliance on the internet to fuel economies driven by high technology, extensive communication, knowledge production, and creativity are progressively shaping the landscape of this digital era.(Baiju & Challa, 2016)

With the increasing digitisation of the financial world, electronic wallets, or e-wallets, have become ubiquitous in our lives. The contemporary generation, particularly millennials, exhibits a preference for payment options that prioritise speed, flexibility, and convenience. The use of electronic wallets, commonly known as e-wallets, has gained significant popularity in recent years, with an increasing number of people relying on them for online transactions. E-wallets

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have made it more convenient and efficient to conduct financial transactions. The most advantageous feature of digital wallets is their ability to facilitate swift payments, purchases, and the transfer and receipt of funds with remarkable speed. In past years, Bitcoin and Ethereum crypto coins have gained in popularity, and with it, the rise of crypto wallets has emerged. Cryptocurrency is a new form of currency that can be stored and exchanged through digital wallets and Crypto wallets offer a new way to manage and store cryptocurrencies, making it easier for users to conduct transactions and manage their funds (Fareed, 2023).

As a result, there has been a growing interest in comparing these two types of wallets to determine their similarities and differences. Both e-wallets and crypto wallets offer users a way to manage and store their funds, but they operate differently and offer different features. This paper aims to provide a comparative study between e-wallets and crypto wallets, evaluating their differences from the perspective of ease of functionality and use cases in different domains. In this paper, we will discuss the working of e-wallets and crypto wallets, their features, and their use cases in various domains. A Quick summary of the existing procedures for disposing of funds represented in both traditional and crypto currencies will be discussed in this paper. The system based on internet payments as alternatives to traditional safekeeping mechanisms and cash disposal will also be investigated in this study.(Malladi et al., 2021)

LITERATURE REVIEW:

The paper entitled “Comparative Analysis of Cryptocurrency Wallets Vs Traditional Wallets” covers a wide range of topics related to digital wallets, including the convenience and efficiency they offer in executing transactions, the current state of digital wallets in the market, making choices for better solutions, and the security of digital wallets. The conclusion discusses the increasing use of digital wallets for cryptocurrencies and the potential reduction in physical wallet usage, highlighting the safety and cost-effectiveness of digital wallets compared to traditional payment methods. It would be beneficial to include a more balanced perspective of both the types of wallets by addressing their uses, limitations or potential drawbacks. Future research could consider updating the information to provide a more current and comprehensive analysis. Additionally, the paper's reliance on data from 2018 may limit its relevance in the current context, as the cryptocurrency landscape and digital wallet technologies have rapidly evolved since then.(Jokić et al., 2019)

The paper titled "Comparative Study on Cryptocurrency Transactions and Banking Transaction" provides a brief overview of cryptocurrency and its transformative impact on the global financial system. The abstract highlights the potential benefits of cryptocurrency, such as improved speed, efficiency, and financial inclusion. It also mentions the intention of the paper to summarise the differences between traditional banking transactions and cryptocurrency transactions, as well as the growing interest in cryptocurrency methods. The paper acknowledges the benefits of cryptocurrency transactions compared to traditional bank transactions, particularly in terms of speed and efficiency. However, it also highlights the current instability of the crypto market and the lack of maturity and experience compared to traditional banking systems. The conclusion raises the point that while cryptocurrency transactions may have advantages, they are not yet as reliable or stable as traditional banking transactions. The paper effectively introduces the topic of cryptocurrency transactions and addresses the growing interest in cryptocurrency methods and briefly explores the current situation in India.(Gowda & Chakravorty, 2021)

The paper titled "Comparison of Hardware and Digital Crypto Wallets" provides an analysis of two methods for storing cryptocurrencies, namely hardware wallets and digital wallets. The abstract outlines the focus of the paper, which is to compare the security and integrity of both types of wallets and examine the factors contributing to social acceptability. It also mentions the ease of use and efficiency associated with digital wallets. It reaffirms that both hardware and digital wallets have advantages and drawbacks. It acknowledges the higher security of hardware wallets but also notes their limited capabilities. On the other hand, it highlights the convenience of software wallets, which can be connected at any time. The conclusion emphasizes the overall security and appropriateness of both types of wallets and mentions the minimal additional costs of hardware wallets compared to traditional cash transactions.(Barakat et al., 2022)

OBJECTIVES OF THE STUDY:

1. To understand the traditional digital wallets, their working, and their use cases in different domains.
2. To understand the crypto wallets, their working, and their use cases in different domains.
3. To Compare the differences between traditional digital wallets and crypto wallets.

OVERVIEW OF E-WALLETS:

E-wallets are traditional digital wallets that allow users to store funds and make payments electronically. They are software-based accounts that are created by linking them to a bank account or credit card. E-wallets have become increasingly popular over the past few years, particularly in emerging markets, due to their ease of use and convenience.

E-wallets work by allowing users to store their payment details, such as credit card numbers or bank account information, in a secure digital environment. Users can then use their e-wallets to make purchases at online and offline merchants, pay bills, or send money to other users. E-wallets offer many benefits, including speed, convenience, and security.

Working of E-Wallets:

E-wallets are electronic accounts that store user's funds and allow them to make transactions and track transaction histories. They are created using software and can be accessed through a mobile device or a computer. To use an e-wallet, a user needs to create an account and link it to their bank account or credit card. Once the wallet is loaded, the user can make transactions by simply entering the recipient's details and the amount to be transferred. E-wallets work by transmitting payment data securely over the internet, using encryption and other security measures to protect user information.

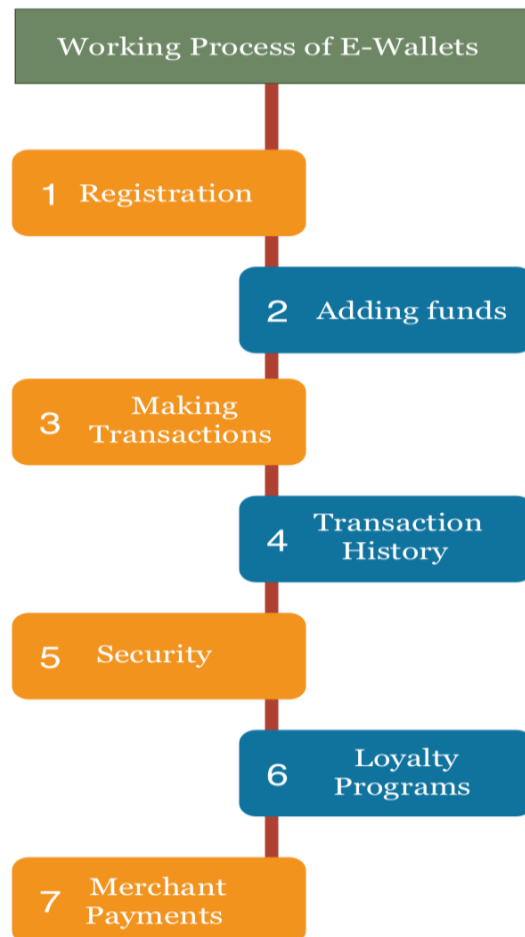
E-wallets offer several features, including bill payments, mobile recharges, and cashback offers. Some e-wallets also allow users to store loyalty points and reward programs, making it easier to manage multiple accounts and rewards.

The working of e-wallets can be broken down into the following steps:

1. **Registration:** The first step in using an e-wallet is to create an account. Users need to provide their personal information, such as name, address, and phone number, to create an account. They also need to link their e-wallet to a payment method, such as a bank account, credit/debit card, or other digital payment options.

2. Adding Funds: Once the account is created, users can add funds to their e-wallet. This can be done by transferring money from their linked payment method to the e-wallet or by receiving funds from

convenience. To make a transaction, users need to enter the amount they want to send and the recipient's details. The transaction is then processed, and the funds are deducted from the user's e-wallet balance.



another e-wallet user.

3. Making Transactions: E-wallets allow users to make transactions with ease and locations, replacing cash and credit/debit cards. E-wallets such as Samsung Pay, Apple Pay, and Google Pay use near-field communication (NFC) technology to enable contactless payments at supported terminals.

4. Transaction History: E-wallets allow users to track their transaction history. This feature enables users to keep track of their spending and monitor their account activity.

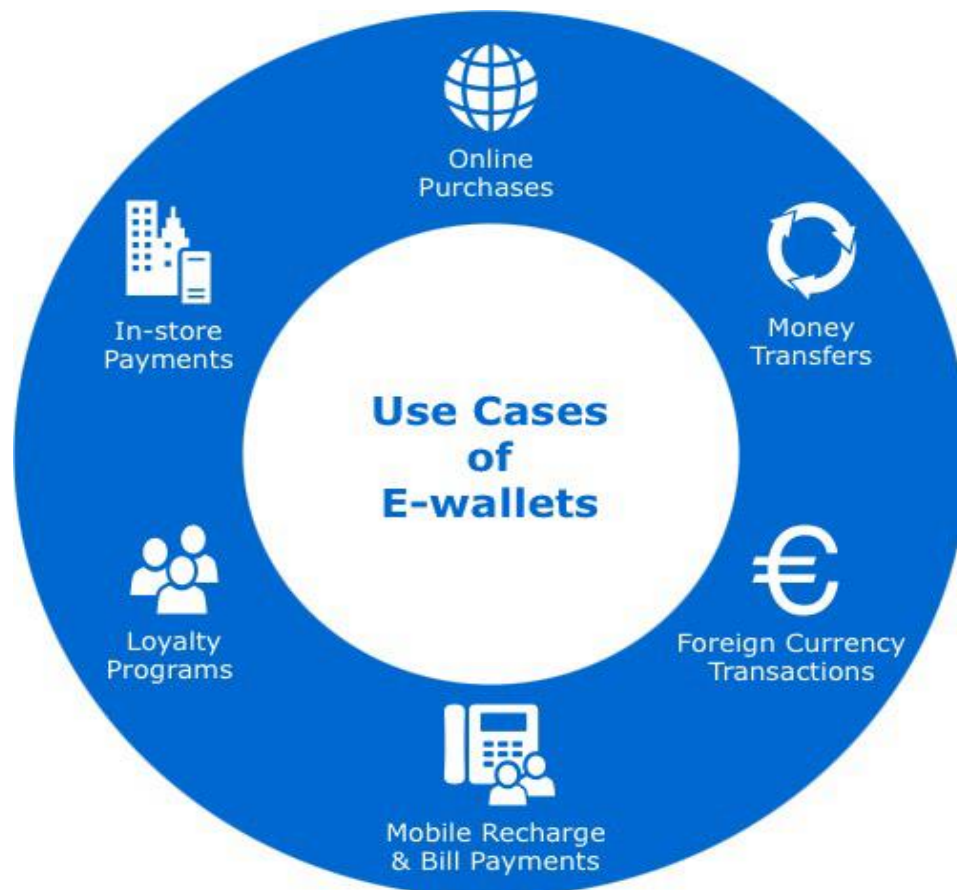
5. Security: E-wallets provide secure transactions by encrypting user data and using advanced security protocols. Some e-wallets also offer two-factor authentication and other security measures to protect users' accounts from unauthorised access.

6. Loyalty Programs: Many e-wallets come with built-in loyalty programs that reward users for using their wallet. These programs offer cashback, discounts, and other rewards for every transaction made with the e-wallet.

7. Merchant Payments: E-wallets can be used for in-store payments at merchant

Use cases of E-wallets:

Traditional digital wallets, also known as e-wallets, have become increasingly popular in recent years. These electronic accounts created using software store funds, allow users to make transactions, and track transaction histories. They are widely used in traditional retail, e-commerce, and banking sectors. Some of the common use cases for traditional digital wallets are:



1. **Online Purchases:** E-wallets are widely used for online purchases, allowing customers to make transactions with ease and convenience. Many e-commerce platforms, such as Amazon, Flipkart, and eBay, allow customers to store their payment details in e-wallets to make purchases quicker and more efficient.

2. **Mobile Recharge and Bill Payments:** E-wallets are commonly used for mobile recharge and bill payments, making it easy for users to pay their bills and top up their mobile phones. Popular e-wallets, such as Paytm, PhonePe, and Google Pay, allow users to pay utility bills, insurance premiums, and other expenses.

3. Money Transfers: E-wallets enable users to transfer money to other bank accounts or e-wallets, both domestically and internationally. This feature is particularly useful for individuals who need to send or receive money quickly and efficiently.

4. In-store Payments: E-wallets can be used for in-store payments at merchant locations, replacing cash and credit/debit cards. E-wallets such as Samsung Pay, Apple Pay, and Google Pay use near-field communication (NFC) technology to enable contactless payments at supported terminals.

5. Loyalty Programs: Many e-wallets come with built-in loyalty programs that reward users for using their wallet. These programs offer cashback, discounts, and other rewards for every transaction made with the e-wallet.

6. Foreign Currency Transactions: E-wallets are widely used for foreign currency transactions. They offer lower fees and better exchange rates compared to traditional banks and currency exchange services.

OVERVIEW OF CRYPTO WALLETS:

Crypto wallets, also known as digital wallets, are similar to e-wallets in that they allow users to store and manage funds electronically. However, crypto wallets are designed to store and manage cryptocurrencies like Bitcoin, Ethereum, USDT, etc. Crypto wallets use blockchain technology to verify and record transactions on a decentralized ledger, providing a high level of security and transparency.

There are two main types of cryptocurrency wallets: cold wallets and hot wallets. The distinction between the two is that hot wallets require an internet connection, whilst cold wallets do not. Hot wallet users typically use them to make online purchases and hold a limited amount of money for that purpose, but cold wallets function similarly to bank vaults in that they store many types of digital valuables. The ideal option is to have both wallets, primarily for security purposes.

Hot and cold wallets are classified into numerous types: online wallets, hardware wallets, mobile wallets, multi-signature wallets, paper wallets, and desktop wallets. Online, mobile, desktop, and multi-signature wallets fall under the hot wallet category. Paper and hardware are

examples of cold wallets. Depending on the digital wallet used, each wallet offers a different level of security and functionality. For example, mobile wallets are convenient and easy to use but may not offer the same level of security as a hardware wallet.(Barakat et al., 2022)

It's crucial to understand that while some governments forbid or restrict the usage of digital currency, others permit trading in it before selecting a wallet. It is possible to lose money if you select the incorrect wallet for a certain digital currency. It is advised that consumers take some time to investigate how various cryptocurrency wallets operate. Ledger Nano S (hardware wallet), Ledger Blue (hardware wallet), MetaMask (online wallet), Coinbase (online wallet), CoinPayments (online wallet), BitGo (multi-signature wallet), Exodus (online wallet), and Jaxx (mobile wallet) are a few examples of popular wallets.

The global crypto wallet market was valued at USD 6.97 billion in 2021 and is predicted to increase at a 24.31% CAGR over the forecast period. The growing use of cryptocurrencies can be attributed to the increase in crypto wallet usage. The number of crypto wallet users worldwide increased to 84.02 million in 2022, from 76.32 million in 2021 as stated in “Crypto Wallet Market Share, Size, Trends, Industry Analysis Report, 2022 – 2030” by Polaris Market Research. More people are purchasing cryptocurrencies than ever before. Cryptocurrency wallets currently account for about 25% of all bitcoin sales. One of the fundamental benefits of cryptocurrency wallets is their ability to securely store users' private keys or passwords, ensuring the security and accessibility of their cryptocurrencies while allowing them to transfer and collect virtual currencies such as Ethereum and Bitcoin.

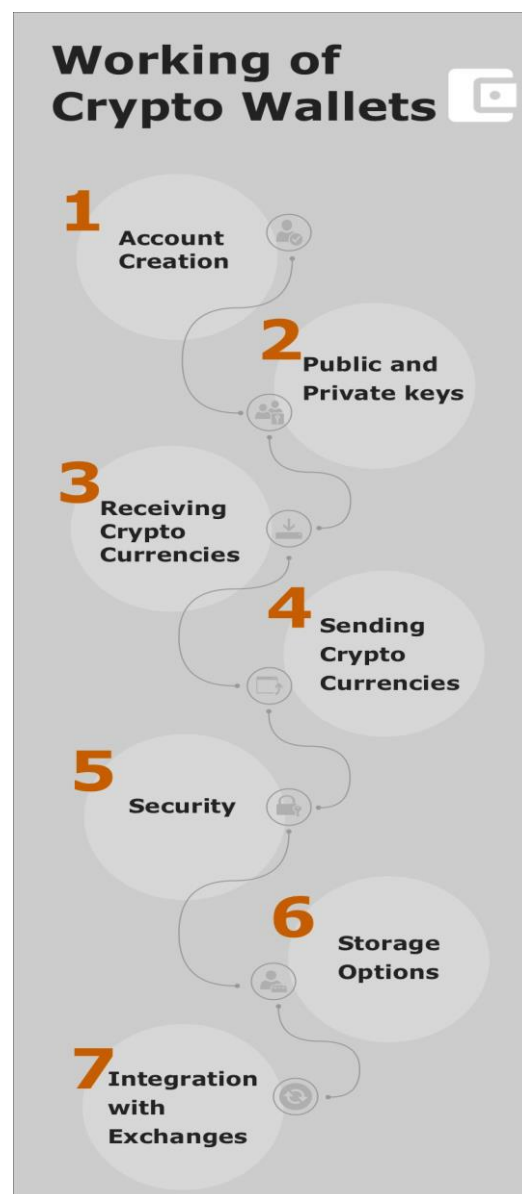
Working of Crypto Wallets:

Crypto-wallets or cryptocurrency wallets are digital wallets that store user's crypto assets, such as Bitcoin, Ethereum, and other cryptocurrencies. They are designed to enable secure and convenient storage, transfer, and management of cryptocurrencies. Crypto wallets work differently from e-wallets, primarily due to the use of blockchain technology. To use a crypto wallet, a user needs to download the wallet software and create a unique public and private key pair. The public key is used to receive funds, while the private key is used to authorise transactions.

Crypto wallets use blockchain technology to verify and record transactions on a decentralized ledger. This process involves several steps, including validation of the transaction, adding it to the blockchain, and updating the balances of the wallets involved. The blockchain ensures that all transactions are secure, transparent, and tamper-proof.(Nowroozi et al., 2022)

The working of crypto wallets can be broken down into the following steps:

1. **Account Creation:** To use a crypto-wallet, users need to create an account by downloading the wallet software or accessing a web-based wallet. They need to provide some basic information, such as name, email, and password, to create an account.
2. **Public and Private Keys:** Crypto-wallets are built around public-key cryptography, where each wallet has a unique public address and a corresponding private key. The public address is a long string of alphanumeric characters that is used to receive cryptocurrencies, while the private key is a secret code used to access the wallet and send cryptocurrencies.



3. **Receiving Cryptocurrencies:** Once the account is created, users can receive cryptocurrencies by sharing their public address with the sender. The sender needs to send the cryptocurrencies to the user's public address, which will be credited to their wallet balance.

4. **Sending Cryptocurrencies:** To send cryptocurrencies, users need to enter the recipient's public address and the amount they want to send. They also need to enter their private key to authorise the transaction. Once the transaction is authorised, it is broadcast to the cryptocurrency network, and the recipient receives the cryptocurrencies.

5. Security: Crypto wallets provide high levels of security to protect users' assets from theft and fraud. They use encryption and other security measures to protect users' private keys and transactions. Some wallets also offer two-factor authentication, multi-signature support, and other advanced security features.

6. Storage Options: Crypto wallets offer various storage options, including hot wallets and cold wallets. Hot wallets are connected to the internet and provide quick access to cryptocurrencies, while cold wallets are offline and provide higher security by storing cryptocurrencies offline.

7. Integration with Exchanges: Crypto wallets can be integrated with cryptocurrency exchanges, allowing users to buy, sell, and trade cryptocurrencies directly from their wallets. This feature enables users to manage their crypto assets and investments in one place.

Use cases of Crypto wallets:

Crypto wallets have been gaining popularity among investors and traders in recent years due to the growing acceptance of cryptocurrencies as a legitimate asset class. Some of the use cases of crypto wallets are as:

1. Storage of cryptocurrencies: The primary use case of a crypto wallet is to securely store cryptocurrencies. A crypto wallet allows users to store their digital assets such as Bitcoin, Ethereum, and other cryptocurrencies. The wallet generates a public and private key pair that is used to authenticate transactions and ensures that only the owner of the wallet can access the assets.

2. Sending and receiving cryptocurrencies: Crypto wallets allow users to send and receive cryptocurrencies to and from other wallets. To send a cryptocurrency, the user must enter the recipient's wallet address and the amount to be sent. Similarly, to receive a cryptocurrency, the user must provide their wallet address to the sender. The transaction is recorded on the blockchain, which ensures that it is secure and transparent.



3. Trading cryptocurrencies: Some crypto wallets also allow users to trade cryptocurrencies. These wallets offer built-in exchanges that allow users to buy and sell cryptocurrencies without leaving the wallet interface. This feature is particularly useful for traders who want to make quick trades without the need to transfer cryptocurrencies to an exchange.

4. Staking and lending cryptocurrencies: Some crypto wallets also allow users to stake their cryptocurrencies and earn rewards for helping to secure the network. Staking involves holding a certain amount of cryptocurrency in a wallet to support the operations of the network. Lending, on the other hand, involves lending cryptocurrencies to other users for a specified period and earning interest on the loan.

5. Access to decentralized applications: Some crypto wallets also provide access to decentralized applications (DApps). DApps are applications that run on blockchain networks and offer various services such as decentralized finance (DeFi) and gaming. Crypto wallets allow users to access these DApps directly from their wallets, making it easy to use these services.

DIFFERENCES BETWEEN E-WALLETS AND CRYPTO WALLETS:

Digital wallets have become increasingly popular with the growth of e-commerce and mobile payments. Digital wallets allow users to store and manage funds, make transactions, and track transaction histories using mobile or computer-based software. Two types of digital wallets are traditional e-wallets and cryptocurrency wallets.

E-wallets are electronic accounts created using software that stores funds, allows users to make transactions, and tracks transaction histories. E-wallets can be included in a bank's app or as a private payment platform like Paytm or PhonePe. The ease with which a mobile phone transaction can be completed in a fraction of seconds makes e-wallets convenient and quite popular to use.(Jokić et al., 2019)

Cryptocurrencies, on the other hand, completely rely on electronic wallets to transact, process, and maintain balances. Popular examples of cryptocurrencies are Bitcoin, Ethereum, and USDT. Crypto wallets allow users to store, receive and transfer cryptocurrencies. Unlike traditional e-wallets, cryptocurrency wallets do not hold physical cash, but rather hold digital currencies.

There are several differences between traditional digital wallets and crypto wallets that can be evaluated based on their working and use cases in different domains. Here are some of the key differences between the two:

Table 1: Comparative aspects

Aspects	E-wallets	Crypto wallets
Currencies supported	Fiat currencies (INR, USD, GBP etc.)	Cryptocurrencies (BTC, ETH, XRP etc.)
Transaction speed	High (few seconds)	Comparatively less (few seconds to minutes)
Transaction fees	Expensive charge fees	Low or free transactions fees
Security	Traditional security measures	Advanced security measures

	(Username & Password, two factor authentication etc.)	(Public & Private keys, multi factor authentication and hardware wallets etc.)
Regulatory framework	Subject to strict regulations (RBI in India etc.)	Less regulations due to decentralised nature
Disposing of funds	Using Fiat currencies (through banks & payment gateways)	Using cryptocurrencies (through blockchain)
Ease of use	More user friendly	Bit complex for new users
Use cases	Widely used (Retail, banking, e-commerce, bill payments, money transfer etc.)	Limited use but expanding (Storing, sending & receiving cryptocurrencies and trading, staking, lending etc.)

Table 1 provides an overview of the comparative advantages and disadvantages of traditional digital wallets and cryptocurrency wallets. The comparative aspects are presented in the table's columns.

1. Currencies supported: One of the main differences between e-wallets and crypto wallets is the currency they support. E-wallets support fiat currencies, such as the US dollar, Euro, or Indian Rupee, while cryptocurrency wallets support only digital currencies such as Bitcoin, Ethereum and others. While e-wallets allow users to transfer money to other bank accounts or make payments at merchant locations, crypto wallets allow users to transfer cryptocurrencies between wallets and buy or sell them on cryptocurrency exchanges. Crypto wallets may also support some fiat currencies, but their primary purpose is to store, send, and receive cryptocurrencies.

2. Security: Another difference is the security of transactions. Both traditional digital wallets and crypto wallets prioritise security. However, the methods used to secure these wallets differ significantly. Electronic wallets employ conventional security protocols, such as username-password combinations and two-factor authentication, to guarantee secure transactions. In contrast, cryptocurrency wallets utilize more sophisticated security measures, including public and private key pairs for transaction authentication, and provide enhanced security measures like multi-factor authentication and biometric authentication. Additionally, Hardware wallets, which store private keys offline, are less susceptible to hacking compared to software wallets.

3. Transaction speed: The speed of transactions is also a difference between the two types of wallets. E-wallet transactions usually take a few seconds to complete the transactions, while

crypto wallet transactions can take several minutes or even hours, depending on the network traffic.

4. Transaction fees: Transactions in traditional digital wallets usually involve banks or financial institutions, which can result in higher transaction fees. Crypto wallets offer transactions at a lower cost due to the decentralized nature of cryptocurrencies and the absence of intermediaries.

5. Regulatory framework: Traditional digital wallets are subject to strict regulations and guidelines enforced by government bodies such as the FCA (Financial Conduct Authority) in the UK and the RBI (Reserve Bank of India) in the India. Crypto wallets, on the other hand, are subject to less regulatory oversight because of its decentralized nature, although governments are increasingly introducing regulations to control the use of cryptocurrencies.

6. Ease of use: The ease of use is another factor that differentiates e-wallets and crypto wallets. Traditional digital wallets are generally more user-friendly, with intuitive interfaces and simple features for managing fiat currencies and require less technical knowledge to operate. Crypto wallets, on the other hand, can be complex for new users, as they involve managing public and private keys, and require some technical knowledge, such as understanding blockchain technology, setting up addresses, and navigating various cryptocurrency networks.

7. Disposing of funds: Funds are disposed of under traditional e-wallet, through bank-based mechanisms, using fiat currencies (e.g., USD, INR). Transactions are processed through intermediaries like banks or payment gateways (e.g., Paytm, PayPal). In Crypto wallets funds are disposed of using cryptocurrencies (e.g., Bitcoin, Ethereum) through blockchain networks. Transactions are decentralized, peer-to-peer, and typically do not require intermediaries like banks.

8. Use cases: The use cases for e-wallets and crypto wallets differ depending on the domains. E-wallets are widely used in traditional retail, banking sectors, e-commerce transactions, bill payments, and money transfers, among other things. Crypto wallets are primarily used for storing, sending, and receiving cryptocurrencies, more commonly used in the cryptocurrency market and blockchain-based services, although their use cases are expanding to include trading, staking, and access to decentralized applications.

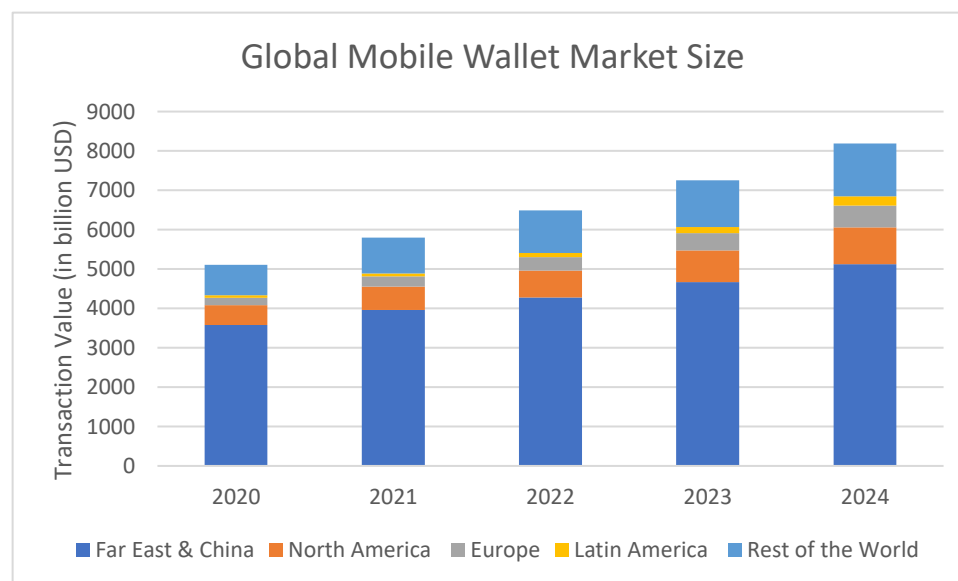
DISCUSSION:

While both e-wallets and crypto wallets serve the purpose of storing and transferring funds, they differ significantly in terms of currency support, security measures, transaction speed, ease of use, and use cases in different domains.

Also, traditional digital wallets and crypto wallets have different features and functionalities. While traditional digital wallets are better suited for managing fiat currencies and everyday transactions, crypto wallets are specialised tools for managing cryptocurrencies and accessing the broader crypto ecosystem. Both types of wallets prioritise security, but they use different methods to achieve it. Ultimately, the choice between a traditional digital wallet and a crypto wallet will depend on the user's needs and preferences, as well as their level of experience with cryptocurrencies.

E-wallets have made financial transactions more accessible and convenient for users. They provide a secure and efficient way to make payments, track transactions, and manage funds. E-wallets are widely used for online purchases, mobile recharge and bill payments, money transfers, loyalty programs, in-store payments etc. They have become an integral part of the digital economy and have made financial transactions more accessible and convenient for users.

Here, the graph shows the Market size of mobile wallet transactions in various regions worldwide from 2020 to 2024, taken from Statista.com.

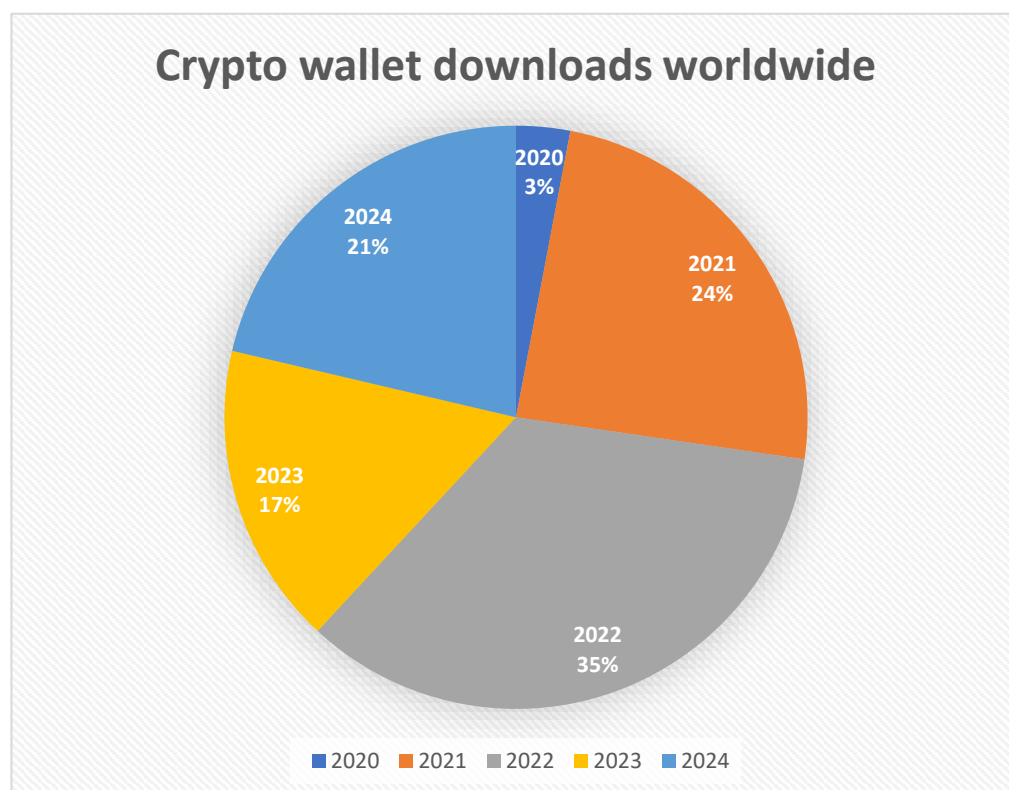


The mobile wallet market is experiencing steady growth across all regions from 2020 to 2024. The Far East and the Rest of the World are the largest contributors to this growth, consistently leading in terms of adoption and usage.

Key observations from this graph include the steady and consistent adoption of mobile wallets across regions, driven by increasing smartphone usage, internet access, and integration with digital payment systems. Growth rates vary, with emerging markets such as Latin America and the Rest of the World exhibiting faster growth compared to developed regions.

Crypto wallets have revolutionised the way people store, manage, and transfer cryptocurrencies. They provide high levels of security, easy accessibility, and a range of storage options to suit different needs. Crypto wallets offer a range of use cases beyond just storing cryptocurrencies. They offer users a secure and convenient way to send and receive cryptocurrencies, trade them, earn rewards through staking and lending, and access decentralized applications. As the popularity of cryptocurrencies continues to grow, it is expected that the use cases for crypto wallets will continue to expand.(Prakash, 2022)

In below graph, the data taken from Statista.com shows the estimate of the number of downloads of the 21 largest apps that allow for cryptocurrency storage worldwide from 2020 to 2024.



Crypto wallets have seen significant volatility in downloads compared to mobile wallets. In 2022, downloads peaked at 24,803,612 but plummeted sharply in 2023 to 12,008,350 before recovering slightly in 2024 to 15,297,361.

Key observations from the graph are that unlike mobile wallets, crypto wallet adoption is highly volatile and influenced by external factors such as market conditions, regulations, and global events. This growth is not linear, indicating the nascent and speculative nature of cryptocurrency usage.

Mobile wallets exhibit consistent and predictable growth across all regions, propelled by the ongoing digitalisation, e-commerce expansion, and government support for cashless payments. In contrast, cryptocurrency wallets exhibit substantial volatility, reflecting their sensitivity to cryptocurrency market trends and external events such as regulatory changes. Mobile wallets represent a mature market with widespread adoption in both developed and developing regions. Conversely, cryptocurrency wallets are still in the growth phase, driven by speculative investments and niche use cases like decentralized finance (DeFi) and non-fungible tokens (NFTs). Mobile wallets are primarily adopted for practical purposes, including online shopping, utility bill payments, and merchant integration. On the other hand, cryptocurrency wallets are primarily adopted for speculative and investment-related reasons rather than daily utility.

The study reveals that e-wallets are more commonly used and offer a wider range of features compared to crypto wallets. However, crypto wallets provide a higher level of security due to the use of private keys for accessing the wallet and associated cryptocurrencies. Trust and security are crucial factors influencing adoption, with users preferring wallets from reputable providers with a proven track record of security and reliability.

CONCLUSION:

The study's findings suggest that e-wallets and crypto wallets have distinct strengths and weaknesses. User adoption is influenced by various factors, including user experience, trust, and security. Wallet providers must strike a balance between functionality and security to enhance user experience and adoption. Additionally, building trust with users requires transparent and reliable security measures.

Traditional digital wallets facilitate transactions involving fiat currencies, offering convenience, and supporting various use cases. Cryptocurrency wallets, on the other hand,

manage cryptocurrencies, providing enhanced security and functions like sending, receiving, trading, staking, and accessing decentralized applications.

Each type of wallet has unique advantages. Traditional digital wallets are user-friendly, widely accepted, and compliant with regulations, making them suitable for routine transactions. Cryptocurrency wallets offer enhanced security, faster transactions due to decentralized networks, and access to cryptocurrencies and blockchain-based applications.

In conclusion, Mobile wallets are more stable and widely adopted for everyday usage, while cryptocurrency wallets remain niche and speculative, driven by market dynamics and emerging technologies. Both serve distinct purposes, with mobile wallets catering to a broad audience and cryptocurrency wallets appealing to technologically savvy and investment-oriented individuals.

Scope for future research

Future research in this field will contribute to the advancement and evolution of digital wallet technologies, enhancing user experiences, security, interoperability, and regulatory compliance in the rapidly evolving landscape of digital finance.

As the adoption of cryptocurrencies continues to grow and traditional financial systems evolve, there are several avenues for future research on this topic:

1. **User Experience and Adoption:** Further research can focus on improving the user experience of crypto wallets to make them more accessible and intuitive for individuals with varying levels of technical expertise. Understanding user adoption patterns, barriers, and preferences will help drive mainstream adoption of crypto wallets.
2. **Security and Privacy:** Research can explore novel security measures and privacy-enhancing techniques for both traditional digital wallets and crypto wallets. Advancements in areas such as secure key management, biometrics, and privacy-preserving transaction protocols will be critical to address the evolving threats in the digital wallet landscape.
3. **Interoperability and Integration:** Investigating ways to bridge the gap between traditional digital wallets and crypto wallets, enabling seamless integration and interoperability, can contribute to a more holistic financial ecosystem. This research can explore standards,

protocols, and technologies that facilitate interoperability between different types of wallets and enable frictionless exchange between fiat currencies and cryptocurrencies.

4. Regulatory Considerations: As the regulatory landscape for cryptocurrencies and digital wallets evolves, future research can delve into the implications of regulations on both traditional digital wallets and crypto wallets. Understanding the legal and compliance aspects will help shape the development of wallet solutions that adhere to regulatory frameworks while still maintaining the benefits of cryptocurrencies.

5. User Education and Awareness: Educating users about the differences, benefits, and risks associated with both types of wallets is essential. Future research can focus on developing educational programs and materials to improve user awareness, promote responsible wallet usage, and mitigate potential risks.

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