Prof. Dr. Isabell M. Welpe / Florian Knöchel

Chair for Strategy and Organization
TUM School of Management
Prof. Dr. Isabell M. Welpe

TUM

Cryptocurrency Payments: An Overview and Analysis of Factors Driving Adoption

The main factors for the adoption of cryptocurrency payments are listed on the left. On the right, 30 Cryptocurrencies and Stabelcoins are ranked according to those factors to determine the best-suited payment cryptocurrency and stablecoin.

Factors for Adoption

Fulfillment Level

Volatility
Volatility is inherent to cryptocurrencies, but stablecoins solve this by being pegged against an asset like the US Dollar.

Accepting Venues
The number of accepting venues is a critical factor in the adoption but is lacking behind the likes of Visa or Mastercard.

Security
The most secure cryptocurrencies like Bitcoin and Solana require over 10 billion US Dollars for a 51% attack.

Transaction Speed
The quickest cryptocurrencies like Solana and Fantom outperform Visa's 2.4-second requirement.

Transaction Costs
Transaction costs of EOS, XRP, and Solana, among others, are a fraction of a cent.

Usability
The usability of cryptocurrencies is impeded by process complexity and lack of understanding.

Trust
Users' trust is an essential factor in the adoption decision and is influenced by factors such as security.

Knowledge
People require knowledge about cryptocurrencies and their underlying technology to increase general adoption.

Regulations
Legal statuses need to be established for cryptocurrencies to be persistent (e.g. El Salvador).

Availability
The number of access points users can buy a particular cryptocurrency is essential for initial ownership.

Decentralization
Decentralization positively influences security and creates trust. Bitcoin is distributed across 15,000 nodes.

Throughput
Visa operates with an average throughput of 1,700 transactions per second. Solana can reach 50,000.

Current Success
Bitcoin, Ethereum, and Tether are the most successful cryptocurrencies by market capitalization, volume, and users.

Sustainability
Fantom only consumes 0.00000301 kWh per transaction compared to Visa's 0.00358 kWh.

Website:

Fulfillment level of the categories best cryptocurrency compared to Visa / FIAT currencies

Factors not directly related to the choice of cryptocurrency and therefore not included in the ranking

Ranking

Stablecoins

1. Tether (USDT)
2. USD Coin (USDC)
3. Dai (DAI)
4. TerraUSD (UST)
5. Binance USD (BUSD)

Cryptocurrencies

1. Solana (SOL)
2. Fantom (FTM)
2. Ethereum 2.0 (ETH2)
4. Avalanche (AVAX)
5. XRP (XRP)
5. Polkadot (DOT)
5. Algorand (ALGO)
8. EOS (EOS)
8. Terra (LUNA)
10. Cosmos (ATOM)
10. Bitcoin Cash (BCH)
12. Stellar (XLM)
13. NEAR Protocol (NEAR)
14. Bitcoin (BTC)
14. Tron (TRX)
14. Ethereum (ETH)
17. Litecoin (LTC)
17. Elrond (EGLD)
19. Cardano (ADA)
20. Harmony (ONE)
21. Polygon (MATIC)
22. BNB (BNB)
22. Cronos (CRO)
22. Dash (DASH)
25. Dogecoin (DOGE)