

# Current Research: Insights into the Adoption of Cryptocurrencies as Payment Systems

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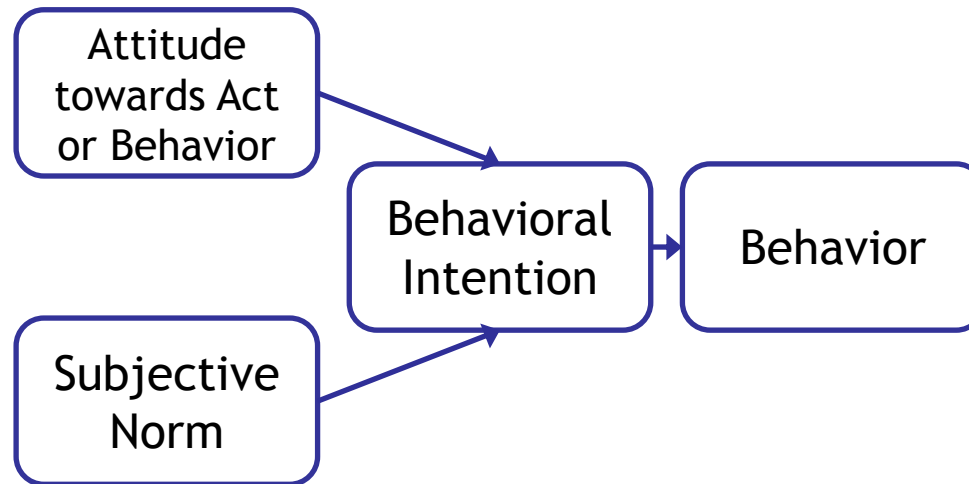
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- **Technology Acceptance**
  - Theory of Reasoned Action (TRA)
  - Technology Acceptance Model (TAM)
  - Unified Theory of Acceptance and Use of Technology (UTAUT)
- **Cryptocurrency Acceptance**
  - Literature Review
  - Qualitative User Study

- Why do some technologies prove wildly successful, while others fail to gain traction?
- What are the factors helping or hindering widespread adoption?
- Different models to explain technology adoption:
  - Theory of Reasoned Action (TRA)
  - Technology Acceptance Model (TAM)
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- The Theory of Reasoned Action (TRA) proposes that behaviors are driven by behavioral intentions, which in turn derive from attitudes and subjective norms:

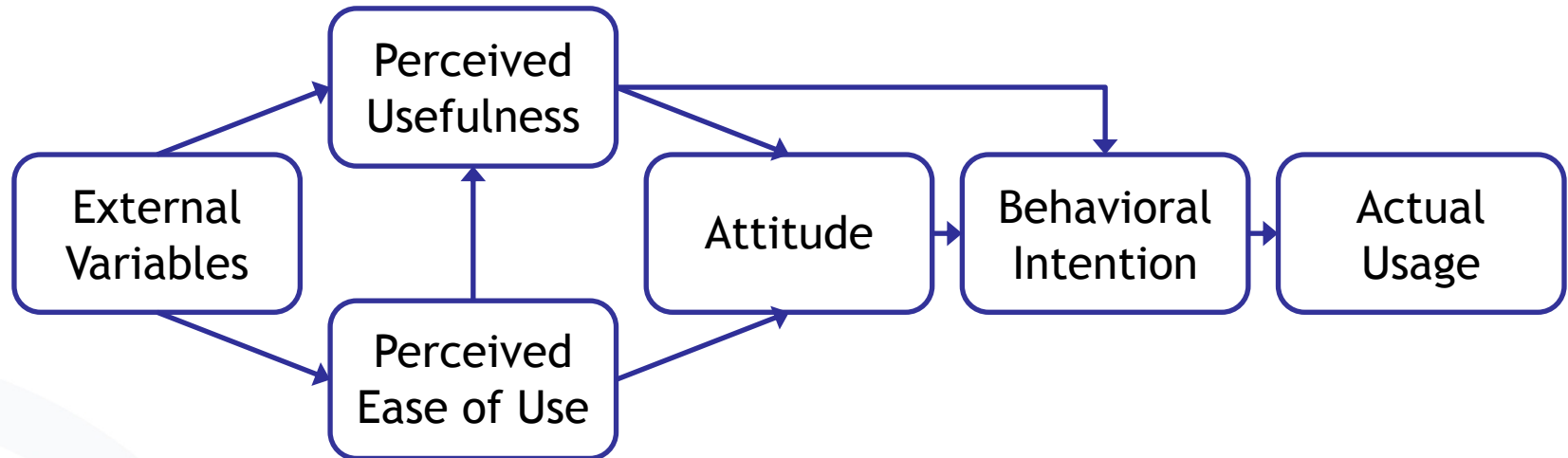


- **Attitude towards Act or Behavior** is defined “as the person’s positive or negative evaluation of performing (or not performing) a specific behavior”
- **Subjective Norm** refers to the “person’s *perception* that important others desire the performance or non-performance of a specific behavior”

- Significant risk of confounding between attitudes and norms since attitudes can often be reframed as norms and vice versa.
- Assumption: that when someone forms an intention to act, they will be free to act without limitation. This is often unfounded.
- In practice, constraints such as limited ability, time, environmental or organizational limits, and unconscious habits will limit the freedom to act.

- Davis (1989) extended the TRA with a focus on the acceptance of information technologies, creating the Technology Acceptance Model (TAM).
- Focus on two main factors for explaining system use: Perceived usefulness and perceived ease of use.

# Technology Acceptance Model (TAM) - Schematic



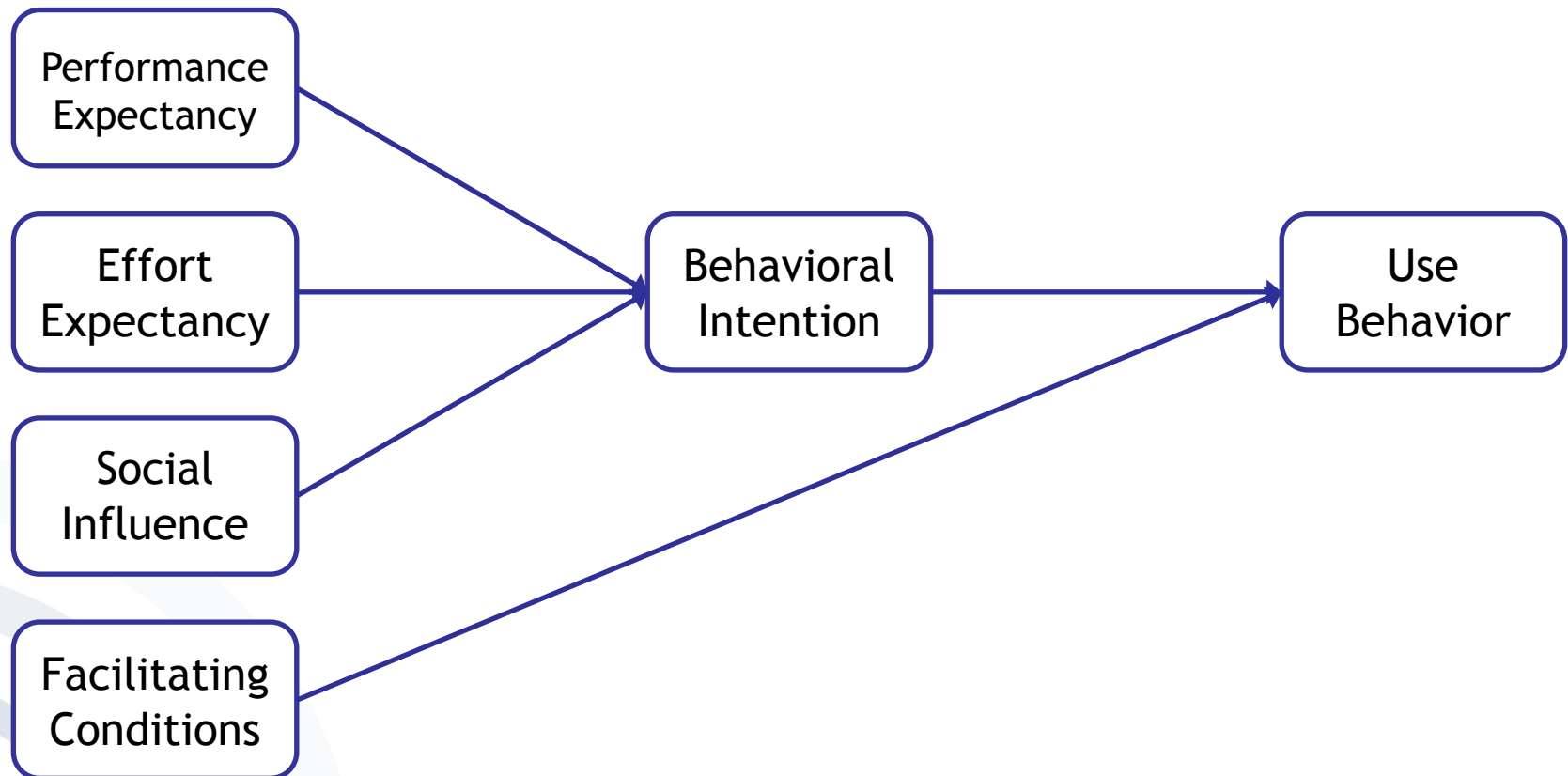


- **Perceived Usefulness** refers to the “degree to which a person believes that using a particular system would enhance his or her job performance”
- **Perceived Ease of Use** refers to the “degree to which a person believes that using a particular system would be free of effort”

- Both TRA and TAM have strong behavioral elements, assuming that when someone forms an intention to act, they will be free to act without limitation
- In practice constraints such as limited ability, time, environmental or organizational limits, and unconscious habits will limit the freedom to act

- The success of the TAM led a wealth of models exploring technology acceptance, including the Motivational Model (MM), the Theory of Planned Behavior (TPB), the Model of PC Utilization (MPCU), Innovation Diffusion Technology (IDT), and the Social Cognitive Theory (SCT)
- Venkatesh et al. (2003) reviewed these models (including the TRA and TAM) and formulated the Unified Theory of Acceptance and Use of Technology (UTAUT)

# Unified Theory of Acceptance and Use of Technology (UTAUT) - Simplified Schematic



- **Performance Expectancy** is defined as the degree to which an individual believes that using the system will help him or her to attain gains in job performance
- **Effort Expectancy** is defined as the degree of ease associated with the use of the system

- **Social Influence** is defined as the degree to which an individual perceives that important others believe he or she should use the new system
- **Facilitating Conditions** are defined as the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system

- While expanding on the TAM, the UTAUT loses the advantage of parsimony, incorporating 41 independent variables predicting intentions and eight variables predicting behavior
- The challenge is incorporating just the right variables in any explanatory model, and not every possible one

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- The advent of cryptocurrencies was accompanied by a large hype, with promises to disrupt the banking industry and democratize finance.
- But even with prices reaching an all-time high, the adoption rates of cryptocurrencies in the retail industry has remained negligible.

- Which factors were identified as important for cryptocurrency adoption in prior literature?
- Systematic literature review including information systems (IS) and economic literature
- Filter from 1134 initial papers mentioning cryptocurrencies to a final sample of 25 relevant papers

- Which factors influence the adoption of cryptocurrencies as a payment system?
  - Attitude, Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions
  - Self-Efficacy
  - Trust
  - Perceived Risk
  - Perceived Security

- Which factors are the most important according to potential users?
- Conducted a user study with 1053 German residents
  - 49 had already used cryptocurrencies for payments
  - 496 can imagine doing so in the future
  - 508 will not do so under any circumstance
- Asked the first two groups for the most important reason to use a cryptocurrency, while the third group was asked for the main obstacle

- Identified six general groups of reasons and obstacles for CC adoption:
  - Financial
  - Ideological
  - Benefits
  - Technical
  - Acceptance
  - Security

- Acceptance Factors
  - Investment opportunity
  - Low costs
- Obstacles
  - No fundamental value
  - Price stability
  - Speculative
  - Too expensive

- Acceptance Factors
  - Curiosity
  - Decentrality
  - Freedom
  - Innovative
- Obstacles
  - Sustainability
  - Abolition of cash
  - Not real money

- Acceptance Factors
  - Additional payment option
  - Control
  - Usefulness
- Obstacles
  - No benefits



- Acceptance Factors
  - Case free transactions
  - Transaction speed
  - Good usability
  - No exchange required
- Obstacles
  - High effort

- Acceptance Factors
  - International acceptance
  - Future acceptance/diffusion
  - Wide acceptance
  - Forced adoption
- Obstacles
  - Low acceptance

- Acceptance Factors
  - Anonymity
  - Security
- Obstacles
  - Data protection issues
  - Criminal reputation
  - Insecurity
  - Lack of trust

- Anonymity and trust are key
  - Lack of trust was the main obstacle, and anonymity was one of the main benefits according to our respondents
- Financial opinions focused on risks
  - Financial motives were mostly secondary for acceptance, while worries about price stability were widespread

- Low usability blocks adoption
  - In the group that has not yet cryptocurrencies but would consider doing so, usability was the most often mentioned factor when deciding to use the technology. A number have tried to, but given up
- Perceptions matter
  - A number of factors and obstacles are not focused on technological features, but subjective concepts like trust and freedom