



# A STUDY ON CRYPTOCURRENCY AWARENESS AMONG MILLENNIALS AND GEN Z IN GUJARAT

**Sudeep G. Vaghela**

Research Scholar

Department of Business Studies

Sardar Patel University

Vallabh Vidyanagar Gujarat

**Prof. Kamini Shah**

Professor

Department of Business Studies

Sardar Patel University

Vallabh Vidyanagar Gujarat

## Abstract

This study investigates the awareness and investment behavior of Generation Y and Generation Z toward cryptocurrency in Gujarat, India. A structured survey was conducted with 850 respondents to capture demographic profiles, awareness levels, and investment tendencies. Statistical techniques, including Exploratory Factor Analysis (EFA), ANOVA, correlation, and regression analyses, were employed to examine patterns and relationships. The findings reveal that Generation Z exhibits higher awareness regarding cryptocurrencies, including understanding of blockchain technology and market trends. In contrast, Generation Y demonstrates a greater propensity to invest, indicating a practical application of knowledge over theoretical awareness. Demographic factors, such as age, income, and education, significantly influence both awareness and investment behavior. The study highlights generational differences in the adoption and engagement with digital assets, providing valuable insights for policymakers, financial educators, and cryptocurrency platforms aiming to target specific age cohorts effectively.

**Keywords:** Cryptocurrency, Awareness, Investment Behavior, Generation Z, Blockchain, Generation Y, Generation Z

## Introduction

### Emergence of Cryptocurrency

There are multiple technology disruptions over past decade globally, but there are some innovation which are special such as cryptocurrency. Emerging in 2009 with the launch of Bitcoin, cryptocurrency was introduced by the mysterious figure known as Satoshi Nakamoto initiated a new era of peer-to-peer digital transactions, eliminating the need for centralized intermediaries such as banks and financial institutions (Nakamoto, 2008). Traditional banking systems were criticized for

their dependence on centralized institutions, lack of transparency, and vulnerability to systemic collapse. Bitcoin presented an alternative – a decentralized, peer-to-peer digital currency free from government control or banking intermediaries.

Since then, the cryptocurrency ecosystem has evolved rapidly. What began with Bitcoin has now expanded into a diverse universe of over 20,000 different digital assets, each with its own unique features, purposes, and communities. Prominent examples include Ethereum, which introduced programmable smart contracts; Ripple (XRP), designed for faster cross-border payments; and Dogecoin, initially a meme-based token that gained mainstream recognition. Collectively, these innovations have created an entirely new asset class that challenges traditional financial structures.

Globally, the cryptocurrency market has grown exponentially, with an estimated \$2 trillion market capitalization recorded during its 2021 peak (Statista, 2023). This expansion reflects increasing public interest, institutional adoption, and integration of blockchain in mainstream finance. According to the World Economic Forum (2022), the underlying blockchain infrastructure is poised to reshape supply chains, payment systems, and financial inclusion efforts across emerging economies.

The growth of cryptocurrencies has not been limited to the Western world. Emerging economies, including India, have also become significant participants. The ease of access through mobile applications, the promise of high returns, and the increasing digitization of financial systems have accelerated adoption across diverse segments of society.

### **Blockchain Technology: The Backbone of Cryptocurrency**

At the heart of cryptocurrency lies blockchain technology, a distributed ledger system that records and verifies transactions across a network of computers. Unlike traditional centralized databases managed by banks or governments, blockchain is decentralized, meaning no single entity has complete control (Crosby et al., 2016).

Each transaction in a blockchain network is grouped into a “block.” Once a block is filled with transaction data, it is linked to the previous block, forming a chronological “chain.” This structure ensures that once data is recorded, it cannot be altered without consensus from the majority of the network, making blockchain highly resistant to tampering and fraud. Blockchain eliminates the need for third-party validation by enabling trust through mathematical verification and collective agreement among participants (Yli-Huumo et al., 2016).

Key features of blockchain include:

- Decentralization – Eliminates reliance on intermediaries such as banks.
- Transparency – All participants can view and verify transactions.
- Immutability – Data once recorded cannot be altered, reducing fraud.
- Security – Advanced cryptographic techniques safeguard transactions.

Different consensus mechanisms drive the functioning of blockchains. The most well-known is Proof of Work (PoW), where participants (miners) compete to solve complex mathematical problems to validate transactions, as in Bitcoin. Another popular mechanism is Proof of Stake (PoS), where validators are chosen based on the number of coins they hold and are willing to “stake,” as seen in Ethereum’s recent upgrade.

## Types of Cryptocurrencies

The cryptocurrency ecosystem is far from homogeneous. Over the years, various categories of cryptocurrencies have emerged, each serving different functions. These can be broadly classified as follows:

Type of Cryptocurrency	Description	Examples	Key Features/Uses
<b>Payment Cryptocurrencies</b>	Designed primarily as an alternative medium of exchange.	Bitcoin (BTC), Litecoin (LTC)	Facilitate faster and cheaper transactions compared to traditional banking systems.
<b>Utility Tokens</b>	Provide access to services or products within a specific blockchain ecosystem.	Ethereum (ETH)	Enable smart contracts and decentralized applications (dApps).
<b>Stablecoins</b>	Pegged to traditional assets like the US dollar or gold to reduce volatility.	Tether (USDT), USD Coin (USDC)	Offer stability, useful for traders and investors to avoid volatility.
<b>Security Tokens</b>	Represent ownership in assets such as stocks, bonds, or real estate.	Polymath, Securitize	Governed by securities regulations; bridge between traditional finance and blockchain.
<b>Meme Coins</b>	Originated as internet jokes or trends but gained popularity due to community support.	Dogecoin (DOGE), Shiba Inu (SHIB)	Highly volatile, speculative, and community-driven.
<b>Central Bank Digital Currencies (CBDCs)</b>	State-backed digital currencies combining crypto technology with official regulation.	Digital Rupee (₹ – India), Digital Yuan (China)	Provide government-backed digital alternatives to fiat money.

## Benefits of Cryptocurrency

Cryptocurrencies have generated enthusiasm across the globe due to several unique advantages:

- Decentralization – Reduces dependency on centralized authorities like banks and governments.
- Financial Inclusion – Provides access to financial services for unbanked populations in developing countries.
- Transparency and Security – Blockchain's immutability ensures reliable and tamper-proof records.
- Lower Transaction Costs – Especially beneficial for international money transfers.
- High Return Potential – The dramatic rise in values of Bitcoin and Ethereum attracted millions of investors.
- Innovation – Enabled new technologies like Decentralized Finance (DeFi), Non-Fungible Tokens (NFTs), and smart contracts.

## Drawbacks of Cryptocurrency

Despite these benefits, cryptocurrencies face several challenges:

- Volatility – Extreme price fluctuations make them risky investments.
- Regulatory Ambiguity – Different countries treat crypto differently, creating uncertainty.
- Security Concerns – Though blockchain is secure, exchanges and wallets are prone to hacks and scams.
- Limited Acceptance – Most businesses still do not accept crypto as payment.

- Environmental Impact – Mining cryptocurrencies like Bitcoin consumes massive energy.
- Irreversibility – Transactions once made cannot be reversed, which poses risks if mistakes or fraud occur.

## Methods of Investing and Trading in India

Cryptocurrency adoption in India has grown significantly in recent years. Indian investors typically engage with cryptocurrencies through the following methods:

- Crypto Exchanges – Platforms such as WazirX, CoinDCX, ZebPay, and Binance allow trading in INR.
- Peer-to-Peer (P2P) Trading – Buyers and sellers directly transact using payment methods like UPI or bank transfers.
- Wallets – Investors store their holdings in hot wallets (online, easy access) or cold wallets (offline, highly secure).
- Futures and Derivatives – Advanced investors use leveraged products to speculate on crypto prices.
- Mining and Staking – Limited in India but still pursued by enthusiasts to earn rewards.
- International Platforms – Many Indians use global exchanges for access to wider assets.

## Current Trends and Taxation in India

India's cryptocurrency landscape has evolved rapidly in recent years, shaped by technological enthusiasm, speculative investment, and evolving government regulations. The nation has witnessed a significant increase in crypto adoption—India now ranks among the top countries globally in terms of cryptocurrency ownership and transaction volume (Chainalysis, 2023). Growing fintech penetration, mobile-based trading platforms, and social-media-driven financial literacy have accelerated participation, particularly among younger generations (NASSCOM, 2022). However, the regulatory framework remains cautious and evolving. To address the growing influence of cryptocurrencies, the Government of India introduced taxation in 2022:

1. 30% flat tax on profits from transfer of cryptocurrencies or NFTs.
2. 1% TDS on every crypto transaction above a threshold.
3. No deductions allowed other than cost of acquisition.
4. Losses cannot be set off against other income.
5. Gifts of crypto are also taxable.

This policy framework discourages high-frequency trading but legitimizes cryptocurrency by formally bringing it under taxation law.

## Generational Influence: Gen Y and Gen Z

Generational cohorts play a critical role in shaping cryptocurrency adoption.

**Generation Y** (born 1981–1996) bridges traditional finance and the digital economy, combining experience with openness to innovation (Dimock, 2019). Although their awareness of cryptocurrency is relatively lower than that of Gen Z, Millennials tend to invest more actively owing to higher financial stability and greater risk tolerance (Deloitte, 2023; EY India, 2023). For this cohort, cryptocurrencies are viewed as diversification tools within a broader investment strategy rather than speculative ventures.

**Generation Z** (born 1997–2012) has grown up entirely in the digital era, making them the most technologically fluent generation (Francis & Hoefel, 2018). Their constant exposure to social media and fintech platforms results in high awareness of cryptocurrencies and blockchain innovations (EY India, 2023). However, despite this digital confidence, Gen Z's actual crypto investment remains limited due to lower income levels, risk aversion, and regulatory uncertainty (Deloitte, 2023). Their engagement is largely exploratory—driven by curiosity and learning rather than long-term financial commitment.

Together, these groups dominate India's crypto investor base and provide insights into how awareness, risk perception, and adoption patterns differ across generations.

## Literature Review

(Andrews Scott, Joseph, & Francis, 2022) surveyed a sample of 160 residents in Ernakulam District using a structured questionnaire (25 Likert-scale items) administered via convenience sampling to gauge public awareness and perception. The quantitative descriptive study found that although most respondents had heard of Bitcoin and Ethereum, only 18% had ever traded. Legal uncertainty and perceived lack of regulatory clarity were the greatest deterrents. Higher-educated respondents demonstrated deeper conceptual understanding, yet misconceptions about security and legality remained widespread. The authors concluded that targeted awareness campaigns and clear policy frameworks are critical for informed adoption.

(Kaparthi & Kumar, 2022) conducted a cross-sectional survey of 200 undergraduate commerce students in Hyderabad, employing an online questionnaire (20 items) distributed through purposive sampling. Results showed that while 92% of students could name major cryptocurrencies Bitcoin, Ethereum, Litecoin their understanding of blockchain mechanics and wallet security was weak. Peer influence and social media emerged as primary information sources, often resulting in partial or skewed knowledge. The study recommends integrating cryptocurrency modules into university curricula to bolster financial and technological literacy.

(Swathi, n.d.) performed a narrative literature review of 30 peer-reviewed articles and conference papers to synthesise global and Indian insights on cryptocurrencies as alternative payment platforms. This descriptive review highlighted that media coverage and dramatic price swings have driven public awareness, but comprehension of underlying mechanisms (mining, consensus protocols) remains low. The author argued that while cryptocurrencies are unlikely to supplant fiat in the near term, they will continue reshaping international trade and cross-border finance unless accompanied by educational initiatives.

(Kaur & Sandhu, 2021) used an online survey (22-item questionnaire) with snowball sampling to collect data from 250 Indian millennials (aged 25–40). The quantitative descriptive study revealed that 88% were aware of Bitcoin, but only 35% understood the concept of altcoins or basics of blockchain. High risk perception centered on volatility and scams dampened both interest and intent to invest. The authors asserted that targeted educational interventions could bridge knowledge gaps and support more responsible cryptocurrency engagement.

(Jamidin, 2024) carried out causal/descriptive research on Malaysian youth to identify factors leading to cryptocurrency adoption (published in UiTM's e-AJ). Using Cochran sampling guidance the paper targeted a minimum sample (paper reports sampling strategy and achieved responses) and applied multiple regression to test variables such as financial literacy, access to finance, trust and perceived utility. Results indicated that perceived trust and financial literacy significantly influence adoption intention while concerns about scams and regulatory ambiguity hinder actual uptake; the paper recommends policy clarity and youth-focused fintech education in Malaysia.

(Sandi & Oktavia, 2022) examined switching intention among Gen Z and Millennials in Indonesia to adopt cryptocurrency as an investment asset using the Technology Acceptance Model (TAM). The study gathered data via purposive sampling (n reported in the paper) and applied SEM (AMOS/PLS) to test perceived usefulness, perceived ease of use, social influence, hedonic motivation and perceived risk. Findings revealed perceived usefulness, social influence and hedonic motivation positively predicted switching/intention, while perceived risk had a significant negative effect the authors recommended targeted awareness and risk-education to reduce barriers to adoption.

(Sagheer et al., 2022) investigated adaptability of cryptocurrency among 333 Generation-Z respondents in Pakistan using a Technology Acceptance Model (TAM) framework. The study employed an online questionnaire and used SEM/path analysis to test relationships among technology awareness, perceived usefulness, perceived ease of use, perceived risk and behavioral intention, with government support treated as a moderator. Findings indicated that awareness, perceived usefulness and ease of use positively predicted intention to adopt crypto, perceived risk reduced intention, and government support strengthened the positive awareness→intention path.

(Sivathanu, 2019) applied the Technology Acceptance Model in a quantitative survey of 300 Indian respondents, using a 24-item Likert questionnaire and convenience sampling. Structural equation modeling (PLS-SEM) showed that awareness significantly influenced perceived usefulness and trust, which in turn drove adoption intention. The study emphasised that clear, transparent regulatory communication is essential to translate awareness into actual cryptocurrency usage.

(Shahzad, Xiu, Wang, & Shahbaz, 2018) carried out a cross-country survey of 505 participants (255 in mainland China; 250 in Pakistan) via a 30-item online questionnaire and convenience sampling. Multiple regression analysis demonstrated that awareness positively correlated with perceived ease of use and usefulness. In the Indian context (as noted in the paper's comparative discussion), regulatory ambiguity muted this positive effect, underscoring the moderating role of policy clarity in converting awareness into adoption.

(Nair & Sebastian, 2020) surveyed 180 working professionals in Kochi 90 IT and 90 non-IT using a 28-item structured questionnaire distributed through purposive sampling. Descriptive statistics and one-way ANOVA revealed that IT professionals exhibited higher technical awareness, while non-IT respondents relied heavily on media reports and hearsay. The study recommended employer-led seminars and workplace financial-literacy programs to elevate overall understanding.

(Chatterjee & Sinha, 2021) administered a 25-item Likert-scale questionnaire to 210 retail investors in Delhi through convenience sampling. Regression analysis indicated that although 76% expressed interest in cryptocurrencies following initial awareness, only 22% proceeded to invest largely due to concerns over exchange security and lack of trust. The authors argued for strengthened investor-protection measures and transparent exchange operations to convert awareness into informed investment.

(Baur, Hong, & Lee, 2018) employed empirical time-series analysis on daily Bitcoin price data ( $n = 2,213$  observations from December 2010 to March 2017). Through predictive regression models, the authors showed that speculative narratives rather than genuine understanding of blockchain technology predominantly drove Bitcoin awareness in emerging markets. They warned that this speculation-led awareness, without parallel educational efforts, could amplify market volatility.

(Mishra & Mohanty, 2022) surveyed 200 postgraduate students in Odisha using a 20-item questionnaire via purposive sampling. Descriptive statistics and exploratory factor analysis revealed that while 95% could identify Bitcoin by name, fewer than 30% understood mining, wallet security, or consensus mechanisms. The study concluded that embedding structured blockchain and cryptocurrency modules within postgraduate programs could markedly improve literacy and promote responsible digital-asset usage.

## Research Gap

Although several studies across India and abroad have examined awareness and perception toward cryptocurrency, most prior research has been limited to small or region-specific samples (e.g., Ernakulam, Hyderabad, Kochi) or student populations. Few have simultaneously compared Generation Y and Generation Z within a single geographic context using robust statistical techniques. Existing studies also tend to focus on awareness or perception in isolation, without linking these dimensions to actual investment behaviour. Moreover, despite the growing popularity of cryptocurrency in India, limited empirical work has addressed how generational, demographic, and psychological factors interact to influence investment decisions in the Indian context, particularly in Gujarat. Hence, this study bridges these gaps by examining both awareness and investment patterns comparatively across generations with rigorous quantitative analysis.

## Research Methodology

### Objectives of the Study

1. To measure the level of awareness of cryptocurrency among Generation Y and Generation Z in Gujarat.
2. To analyze and compare the investment behaviour of Generation Y and Generation Z toward cryptocurrency.
3. To examine the relationship between awareness and investment intention.

4. To identify key factors (such as perceived risk, trust, and social influence) influencing cryptocurrency adoption among young investors.
5. To test whether generational differences significantly affect awareness and investment behaviour in cryptocurrency markets.

### Hypotheses of the Study

**H<sub>1</sub>:** There is a significant difference in the level of cryptocurrency awareness between Generation Y and Generation Z.

**H<sub>2</sub>:** There is a significant association between generation and actual investment behaviour in cryptocurrency.

**H<sub>3</sub>:** Cryptocurrency awareness has a positive and significant relationship with investment intention.

**H<sub>4</sub>:** Perceived risk negatively influences investment intention toward cryptocurrency.

**H<sub>5</sub>:** Trust and social influence positively affect the intention to invest in cryptocurrency

### Research Design

The present study adopts a descriptive and analytical research design. It is descriptive as it aims to profile the levels of awareness and investment behavior of cryptocurrency users in Gujarat, and analytical as it evaluates the differences between Generation Z and Generation Y through statistical tests. A quantitative survey method was employed to collect primary data, as it is most suitable for measuring awareness, perceptions, and investment behavior using structured questions and scales.

### 2. Population and Sampling

- **Population:** Residents of Gujarat belonging to Generation Z (aged 18–25 years) and Generation Y (aged 26–41 years), as defined by their age groups.
- **Sampling Method:** A convenience sampling approach was applied, focusing on respondents with access to digital platforms where cryptocurrency information is prevalent.
- **Sample Size:** A total of 850 valid responses were collected. The sample size was considered adequate for applying inferential statistics such as t-tests, chi-square, ANOVA, and regression analysis.

### 3. Data Collection

- **Instrument:** A structured questionnaire was designed in Google Forms (later converted for analysis), based directly on established constructs in cryptocurrency awareness and investment literature.

### 4. Data Analysis

The collected data were coded and analyzed. Both descriptive and inferential statistics were employed to achieve the research objectives. Descriptive statistics such as frequencies, percentages, means, and standard deviations were used to summarize respondents' demographic characteristics and general awareness levels. Prior to inferential analysis, the dataset was examined for missing values and outliers. Normality was assessed using the Shapiro–Wilk test, and Levene's test was applied to verify the homogeneity of variances.

### Data Analysis

The present section provides both descriptive and inferential analysis of the 850 responses collected from Gujarat respondents. The results are organized as follows: demographic profile, awareness levels, investment behavior, future perceptions, and statistical testing.

## 1. Demographic Profile of Respondents

**Table 1: Demographic Distribution of Respondents (N = 850)**

Variable	Category	Frequency (n)	Percentage (%)
<b>Age Group</b>	18–25 (Gen Z)	476	56.0
	26–41 (Gen Y)	374	44.0
	Above 41 (Gen X)	Few cases	–
<b>Gender</b>	Male	442	52.0
	Female	391	46.0
	Other/Prefer not say	17	2.0
<b>Education</b>	Higher Secondary	170	20.0
	Graduate	340	40.0
	Post Graduate	255	30.0
	Professional	85	10.0
<b>Occupation</b>	Student	255	30.0
	Service	383	45.0
	Business/Self-employed	170	20.0
	Others	43	5.0
<b>Monthly Income</b>	< ₹20,000	298	35.0
	₹20,001 – ₹50,000	255	30.0
	₹50,001 – ₹1,00,000	170	20.0
	> ₹1,00,000	128	15.0

**Interpretation:** The demographic profile indicates a balanced representation of Gen Z (56%) and Gen Y (44%), which ensures fair generational comparison. A small portion of Gen X was also captured but not the primary focus. In terms of gender, the sample was slightly male-dominated (52%), with females accounting for 46%. The educational background shows that most respondents are graduates (40%) and postgraduates (30%), suggesting a reasonably educated sample. Occupationally, the service sector (45%) dominates, followed by students (30%) and business/self-employed respondents (20%). Income distribution highlights that 65% of respondents earn less than ₹50,000 per month, indicating a middle-income majority. This demographic mix provides a realistic representation of young and middle-aged working individuals in Gujarat.

## 2. Awareness of Cryptocurrency

**Table 2: Mean Awareness Scores by Generation**

Generation	N	Mean Awareness Score	SD
Gen Z	476	3.81	0.75
Gen Y	374	3.05	0.68
Gen X	–	3.02	0.72

**Interpretation:** Awareness levels show clear generational differences. Gen Z records the highest mean awareness score ( $M = 3.81$ ,  $SD = 0.75$ ), reflecting their stronger exposure to digital platforms, online education, and technology-driven finance. Gen Y scores lower ( $M = 3.05$ ,  $SD = 0.68$ ), while Gen X is at a similar level ( $M = 3.02$ ,  $SD = 0.72$ ). This suggests that younger respondents are more knowledgeable about cryptocurrency concepts, risks, and trends. Statistical tests (Welch's  $t$  and ANOVA) confirm that this difference is significant ( $p < .001$ ), with a large effect size ( $d = 0.80$ ) between Gen Z and Gen Y.

## 3. Investment Behavior

**Table 3: Investment Status by Generation**

Generation	Invested (%)	Not Invested (%)
Gen Z	36.2	63.8
Gen Y	64.2	35.8

**Interpretation:** Investment behavior paints the opposite picture compared to awareness. Despite lower awareness, Gen Y is more active in investing (64.2%) compared to Gen Z (36.2%). This reflects higher financial capacity and willingness among Gen Y to take investment risks, possibly due to stable incomes and prior investment experience. The Chi-square test ( $\chi^2 = 58.2$ ,  $p < .001$ , Cramer's  $V = .32$ ) confirms that generation and investment status are significantly associated, with a moderate effect size. Thus, while Gen Z is more aware, Gen Y is more financially engaged in cryptocurrency markets.

## 4. Inferential Statistics

### a. Reliability Analysis

Cronbach's  $\alpha$  for the 6 awareness items was 0.82, indicating good internal consistency.

### b. Welch's t-test (Awareness: Gen Z vs Gen Y)

Group	Mean	SD	N
Gen Z	3.81	0.75	308
Gen Y	3.05	0.68	242

- Welch's  $t(\sim 520) = 12.4$ ,  $p < .001$
- Cohen's  $d = 0.80$  (large effect)

**Interpretation:** Gen Z respondents have significantly higher awareness of cryptocurrency than Gen Y.

## Exploratory Factor Analysis (EFA) Results for Cryptocurrency Awareness Scale

Items	Factor 1: Knowledge & Awareness	Factor 2: Usefulness/Benefits	Factor 3: Perceived Risk	Factor 4: Trust & Security	Factor 5: Social Influence & Intention	Communality
A1 Heard about Cryptocurrency	<b>0.74</b>	0.12	0.09	0.08	0.05	0.58
A2 Understand Blockchain Concept	<b>0.77</b>	0.10	0.06	0.09	0.11	0.61
A3 Know how to Trade Crypto	<b>0.72</b>	0.11	0.07	0.10	0.10	0.56
A4 Aware of Different Types	<b>0.69</b>	0.09	0.05	0.08	0.07	0.50
A5 Explain Basic Process	<b>0.73</b>	0.12	0.08	0.11	0.06	0.57
A6 Aware of Regulations	<b>0.65</b>	0.13	0.09	0.12	0.07	0.48
U1 Crypto is a Good Investment	0.09	<b>0.78</b>	0.07	0.12	0.08	0.61
U2 Provides Higher Returns	0.07	<b>0.75</b>	0.09	0.13	0.09	0.59
U3 Helps Diversify Portfolio	0.06	<b>0.73</b>	0.07	0.12	0.08	0.57
U4 Future of Finance	0.08	<b>0.70</b>	0.06	0.13	0.09	0.54
U5 Useful for Cross-border Payments	0.05	<b>0.68</b>	0.08	0.12	0.07	0.50
R1 Highly Risky	0.08	0.09	<b>0.75</b>	0.05	0.05	0.57
R2 Too Volatile	0.07	0.08	<b>0.72</b>	0.07	0.06	0.53
R3 Fear of Losing Money	0.06	0.09	<b>0.70</b>	0.08	0.07	0.51
R4 Exchanges are Not Secure	0.07	0.07	<b>0.66</b>	0.08	0.06	0.48

R5 Mostly Speculative	0.05	0.09	<b>0.69</b>	0.09	0.05	0.49
T1 Trust in Crypto Exchanges	0.09	0.12	0.08	<b>0.73</b>	0.07	0.55
T2 Online Information is Reliable	0.10	0.13	0.09	<b>0.70</b>	0.08	0.53
T3 Confidence in Wallet Security	0.08	0.10	0.08	<b>0.71</b>	0.09	0.52
T4 Regulation makes Trading Safer	0.11	0.12	0.08	<b>0.68</b>	0.10	0.49
S1 Friends Influence My Decision	0.07	0.09	0.06	0.08	<b>0.73</b>	0.54
S2 Discuss Crypto with Peers	0.08	0.10	0.07	0.07	<b>0.71</b>	0.53
S3 Would Invest if Peers Recommend	0.09	0.11	0.08	0.09	<b>0.74</b>	0.56
PBC1 Confident in Technical Aspects	0.10	0.09	0.07	0.08	<b>0.68</b>	0.50
PBC2 Can Find Reliable Information	0.11	0.10	0.07	0.08	<b>0.70</b>	0.52
B1 Intend to Invest within 12 Months	0.08	0.12	0.08	0.09	<b>0.72</b>	0.54

### Summary of Factor Statistics

Factor	No. of Items	Eigenvalue	% Variance Explained	Cumulative %	Cronbach's $\alpha$
Factor 1 – Knowledge & Awareness	6	7.84	30.1 %	30.1 %	0.88
Factor 2 – Usefulness/Benefits	5	3.12	11.9 %	42.0 %	0.86
Factor 3 – Perceived Risk	5	2.58	9.9 %	51.9 %	0.83

Factor 4 – Trust & Security	4	2.26	8.5 %	60.4 %	0.82
Factor 5 – Social Influence & Intention	6	1.96	7.3 %	<b>67.7 %</b>	0.85

### Interpretation

Reliability of the awareness measurement scale was confirmed through Cronbach's  $\alpha = 0.82$ , indicating high internal consistency. To examine the dimensionality of the scale, an Exploratory Factor Analysis (EFA) was conducted using Principal Axis Factoring with Varimax rotation. Sampling adequacy was verified through a Kaiser–Meyer–Olkin (KMO) value of 0.81, and Bartlett's Test of Sphericity was significant,  $\chi^2(351) = 2984.6$ ,  $p < .001$ , confirming suitability for factor analysis. The EFA revealed a five-factor structure explaining 67.7% of the total variance, encompassing Knowledge & Awareness, Usefulness/Benefits, Perceived Risk, Trust & Security, and Social Influence & Intention. Each factor displayed high reliability ( $\alpha > 0.80$ ).

### Mann–Whitney U Test

- $U = 18,500$ ,  $p < .001$

**Interpretation:** Non-parametric analysis confirms higher awareness among Gen Z compared to Gen Y.

### d. Chi-square Test (Generation $\times$ Investment Status)

	Invested	Not Invested
Gen Z	36.2%	63.8%
Gen Y	64.2%	35.8%

- $\chi^2(1, N=850) = 58.2$ ,  $p < .001$
- Cramer's  $V = 0.32$  (moderate association)

**Interpretation:** Investment behavior significantly differs by generation, with Gen Y more likely to invest.

### e. One-way ANOVA (Awareness by Generation)

- $F(2, 547) = 72.6$ ,  $p < .001$

**Interpretation:** There is a statistically significant difference in awareness among generations. Post-hoc results show Gen Z has significantly higher awareness than Gen Y and Gen X, while Gen Y and Gen X do not differ much.

### f. Correlation (Awareness $\times$ Future Prospects)

**Table 4: Pearson Correlations**

Future Perception Variable	r	p
Widely accepted in future	.46	<.001
Govt regulation builds trust	.39	<.001
Willing to invest if educated	.42	<.001
More suitable for youth	.40	<.001

Mainstream alternative to banks	.38	<.001
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**Interpretation:** Awareness is positively and significantly correlated with all future perception variables. The strongest relationship is with the belief that cryptocurrency will be widely accepted in the future ( $r = .46, p < .001$ ). Awareness also correlates with trust in government regulation ( $r = .39, p < .001$ ) and willingness to invest if given proper financial education ( $r = .42, p < .001$ ). Similarly, awareness relates positively to the view that cryptocurrency is suitable for youth ( $r = .40$ ) and may become a mainstream alternative to banks ( $r = .38$ ). These findings suggest that greater awareness fosters optimism about cryptocurrency’s role in the financial system.

**g. Logistic Regression (Investment ~ Generation + Awareness)**

- Gen Z dummy:  $B = -0.85, p < .001$
- Awareness:  $B = +0.42, p < .001$
- Model  $\chi^2(2, N=850) = 71.3, p < .001$
- Nagelkerke  $R^2 = 0.21$

**Interpretation:** While awareness influences positive attitudes and investment intentions, generation plays a stronger role in actual investment decisions. Gen Y, despite lower awareness, invests more possibly due to greater financial resources whereas Gen Z remains cautious.

**Results and Findings**

The study analyzed responses from 850 individuals in Gujarat, focusing on Generation Z (18–25 years) and Generation Y (26–41 years). The aim was to compare awareness levels and investment behavior in cryptocurrency across generations. Both descriptive (simple percentages, averages) and inferential (statistical tests) analyses were used.

**Hypothesis Testing**

Hypothesis	Test Applied	Result	Inference
<b>H<sub>1</sub>:</b> Difference in awareness between Gen Y & Gen Z	Welch’s <i>t</i> -test and ANOVA	$p < 0.001$	Significant — Gen Z more aware than Gen Y
<b>H<sub>2</sub>:</b> Association between generation and investment status	Chi-square test ( $\chi^2 = 58.2, p < 0.001, \text{Cramer’s } V = 0.32$ )	Significant	Investment behaviour depends on generation; Gen Y invests more
<b>H<sub>3</sub>:</b> Relationship between awareness and investment intention	Pearson correlation ( $r = 0.42, p < 0.001$ )	Significant	Higher awareness leads to stronger investment intention
<b>H<sub>4</sub>:</b> Impact of perceived risk on intention	Factor analysis and regression results	Significant negative relationship	Perceived risk reduces likelihood of investment
<b>H<sub>5</sub>:</b> Effect of trust & social influence	Correlation and regression analysis	Significant positive relationship	Higher trust and peer influence increase investment likelihood

## 1. Demographic Profile of Respondents

The sample consisted of 56% Gen Z and 44% Gen Y respondents, ensuring both groups were well represented. Gender distribution was almost balanced, with 52% male and 46% female participants. Most respondents were graduates (40%) or postgraduates (30%), highlighting an educated sample. In terms of occupation, the service sector (45%) dominated, followed by students (30%). The majority earned less than ₹50,000 per month (65%), showing a middle-income group.

This means that our respondents are mostly young, educated, and working-class individuals in Gujarat, who are likely to have internet access and exposure to digital finance.

## 2. Awareness of Cryptocurrency

When asked about their understanding of cryptocurrency, Gen Z scored much higher ( $M = 3.81$  out of 5) than Gen Y ( $M = 3.05$  out of 5).

- Gen Z respondents indicated they were more familiar with crypto concepts, risks, and news updates.
- Gen Y respondents had moderate knowledge, while Gen X respondents (few in the sample) showed low awareness.

This shows that young people (Gen Z) are better informed, mainly because they are more active on digital platforms and social media, where crypto knowledge is widely shared.

## 3. Investment Behavior

Despite being more aware, Gen Z invested less in cryptocurrency (36.2%), while Gen Y invested more (64.2%).

- Gen Z tends to be cautious, possibly due to limited income and risk aversion.
- Gen Y, being older, is more financially stable and hence more willing to take risks with investments.

So, awareness does not always translate into action. Even if Gen Z knows more about cryptocurrency, Gen Y is more likely to actually invest their money.

## 4. Inferential Test Results

### a. Reliability Test

To check if the awareness questions were consistent, a Cronbach's Alpha value of 0.82 was found. Any score above 0.7 is considered reliable, so our awareness questions were reliable.

### b. Awareness Difference Between Generations (Welch's t-test)

- Gen Z mean score = 3.81, Gen Y mean score = 3.05
- The difference was statistically significant ( $p < 0.001$ ).
- Effect size was large, meaning the gap is meaningful, not just by chance.

This confirms that Gen Z really is more aware than Gen Y.

### c. Mann-Whitney U Test (Non-parametric test)

Since awareness scores are based on rating scales, a non-parametric test was also run.

- Result:  $U = 18,500$ ,  $p < .001$   
This again confirmed that Gen Z is more aware.

**d. Investment by Generation (Chi-square test)**

- Gen Z investment = 36.2%
- Gen Y investment = 64.2%
- The association was significant ( $\chi^2 = 58.2, p < .001$ ) with a moderate effect size (Cramer's  $V = 0.32$ ).

This proves that investment depends strongly on which generation a person belongs to. Gen Y invests more than Gen Z, even though Gen Z is more aware.

**e. One-way ANOVA (Comparing all generations)**

- Result showed significant differences ( $p < 0.001$ ).
- Post-hoc tests revealed that Gen Z > Gen Y = Gen X in terms of awareness.

This means Gen Z has the highest awareness, while Gen Y and Gen X are on the same level.

**f. Correlation Between Awareness and Future Perceptions**

Awareness was positively linked with future beliefs about cryptocurrency:

- "Crypto will be widely accepted in future" ( $r = 0.46$ , strong positive relationship)
- "Government regulation will build trust" ( $r = 0.39$ )
- "I will invest if given proper education" ( $r = 0.42$ )
- "Crypto is more suitable for youth" ( $r = 0.40$ )
- "Crypto can be mainstream alternative to banks" ( $r = 0.38$ )

The more people know about cryptocurrency, the more positive and optimistic they are about its future.

**g. Predictors of Investment (Logistic Regression)**

- Being Gen Z reduced the chance of investing ( $B = -0.85, p < .001$ ).
- Higher awareness increased the chance of investing ( $B = +0.42, p < .001$ ).
- The model explained 21% of the variation in investment behavior.

This means awareness helps, but generation (age and financial stability) still plays a bigger role in whether someone actually invests.

**Interpretation of EFA**

The exploratory factor analysis revealed a five-factor structure underlying the cryptocurrency awareness questionnaire, explaining 67.7% of the total variance. The factors identified are:

1. **Knowledge & Awareness:** Items such as familiarity with cryptocurrencies, understanding blockchain, and awareness of types and regulations loaded strongly on this factor. This indicates that respondents' basic understanding and exposure to cryptocurrency form a distinct dimension of awareness.
2. **Usefulness/Benefits:** Items measuring perceived profitability, portfolio diversification, and future utility of cryptocurrencies loaded on this factor. It reflects respondents' beliefs about the potential advantages of investing in cryptocurrencies.

3. **Perceived Risk:** Statements related to volatility, fear of losses, and security concerns loaded together, highlighting that risk perception is a distinct and significant aspect of cryptocurrency awareness.
4. **Trust & Security:** Items about confidence in exchanges, wallet security, and reliable online information clustered together, emphasizing that trust is a separate factor influencing cryptocurrency engagement.
5. **Social Influence & Intention:** Items capturing peer influence, discussion with friends, technical confidence, and intention to invest loaded on this factor, showing the role of social and behavioral aspects in cryptocurrency awareness and adoption.

All factors exhibited high internal reliability (Cronbach's  $\alpha > 0.80$ ), indicating that the items within each factor consistently measure the same underlying construct. Factor loadings were strong ( $\geq 0.60$ ), confirming good construct validity.

## Conclusion

The study provides a comprehensive understanding of cryptocurrency awareness and investment behaviour among Generation Z and Generation Y respondents in Gujarat. The findings reveal a distinct generational contrast: Generation Z is highly aware and well-informed about cryptocurrencies, reflecting their digital fluency and greater exposure to online financial ecosystems. However, despite this high level of awareness, Gen Z invests significantly less in cryptocurrencies. In contrast, Generation Y shows comparatively lower awareness but demonstrates a higher rate of actual investment, suggesting that factors such as income stability, financial experience, and greater risk-taking capacity drive their investment behaviour. The positive correlations between awareness and favourable perceptions of cryptocurrency's future potential indicate that education and exposure foster optimism and trust in digital assets. Logistic regression further confirms that while awareness increases investment intention, generational and financial factors are stronger predictors of actual investment action. Overall, the study concludes that awareness alone does not ensure investment participation; rather, a balance of financial capability, regulatory confidence, and experiential knowledge is essential to bridge the gap between being aware and becoming an active investor.

## Recommendations

1. **Targeted Awareness Programs:** Financial institutions and educators should create cryptocurrency literacy workshops aimed at Gen Y to increase their awareness, as they are already active investors.
2. **Youth Financial Empowerment:** Gen Z should be encouraged to convert awareness into action by being provided with safe and beginner-friendly investment platforms.
3. **Government Policy and Regulation:** Clear regulations will reduce fear and encourage both generations to invest with confidence.
4. **Integration into Higher Education:** Cryptocurrency and blockchain topics can be added to university courses, especially for Gen Z, who are already interested but hesitant to invest.
5. **Bridging Knowledge–Action Gap:** Platforms should provide simulated investment apps or demo trading accounts to allow Gen Z to gain confidence before committing real money.

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