

Cryptocurrency and the State: Evidence from South Korea

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Abstract

National currencies regulated by state monetary authorities have long been associated with nation-state building and the expansion of state control. The rise of cryptocurrencies—that is, digital currencies outside of state control—has the potential to challenge the dominance of the state in this area and to disrupt state-society relations traditionally mediated through state-issued currencies. However, as recent crises and scandals involving cryptocurrencies demonstrate, cryptocurrencies may—in the absence of regulation—be perceived as too volatile and unsafe to act as a true alternative to state-regulated currencies or to investments that offer some level of government protection. In fact, the failure of cryptocurrencies to provide a safe alternative financial system may lead people to appreciate the role of government in regulating markets more. We test these expectations in the case of South Korea, using a number of different approaches. First, a quantitative content analysis of recent South Korean news media shows that despite public attention to the possibility of “striking it rich” through cryptocurrency investment, public discourse on cryptocurrency has recently become dominated by discussion of the weaknesses of non-state-regulated currencies, particularly after a series of scandals. Second, a nationally representative survey experiment reveals that exposing South Koreans to information about the volatility of cryptocurrencies increases their trust in government, as hypothesized. At the same time, exposure to positive information about cryptocurrencies does not undermine trust in government or support for government regulation. These results point to limitations to the potential of unregulated cryptocurrencies to offer an alternative to state-issued currencies or government-regulated investment vehicles.

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In the last few years, cryptocurrencies—peer-to-peer electronic payment systems that do not rely on a central authority such as a bank or government—have entered the mainstream (Corbet et al. 2019). While cryptocurrencies have existed since Bitcoin was launched in 2009, they have only recently become widely known. In recent years, cryptocurrencies have been endorsed by celebrities in many different countries. In several countries—including the United States (US), Philippines, Vietnam, India, and South Africa—around 50% of adults under the age of 65 report having bought cryptocurrency. The public’s awareness of cryptocurrencies is high in many advanced and emerging economies (YouGov 2023).

Cryptocurrencies’ move into mass culture prompts important questions about their societal implications. While the consequences of cryptocurrencies’ rise on issues such as personal banking, international financial flows, and organized crime have been discussed extensively, an underexplored implication is cryptocurrencies’ potential to reshape the relationship between citizens and the state. Proponents of cryptocurrencies explicitly style them as an alternative to government-issued currencies and government-regulated investment vehicles. Discourse on cryptocurrency-related online platforms tends to cast the state and state-issued currencies as untrustworthy and unsafe, pointing to cryptocurrencies as the future of money, untainted by government control (Dodd 2018).

The development of a new type of payment system that ostensibly allows people to conduct financial transactions, invest, and save, without the need for state intervention or control, may therefore be expected to undermine individuals’ trust in the state and belief in the need for government regulation. At the same time, however, cryptocurrencies have failed to live up to the promise of a safe and secure alternative to government-issued currencies. High levels of price instability, scams, and fraud have plagued the industry. It is possible, therefore, that witnessing the failure of non-state currencies instead boosts trust in states and government regulation.

We test these expectations in the case of South Korea, a country in which cryptocurrencies garnered mass appeal as early as 2017. We first present results from a quantitative text analysis of South Korean news coverage of cryptocurrencies from 2012 to 2022. We find that coverage has been significant and that the news tends to portray cryptocurrencies in a negative light,

particularly in recent years. Second, we use an experiment embedded in a nationally representative survey of South Koreans to test how exposure to information about cryptocurrencies affects trust in government and support for regulation. We find little evidence that information about the relative attractiveness of cryptocurrencies as investment vehicles undermines trust in government or support for market regulation. By contrast, our results show that information about the volatility of cryptocurrency prices bolsters trust in government, though it does not increase support for market regulation.

This research has important implications for our understanding of how emerging technologies shape the relationship between citizens and the state. In particular, it suggests that even though new technologies may purport to replace key state functions, individuals' relationship with the state will not necessarily be weakened. In the case of cryptocurrencies, our findings indicate that even positive information about cryptocurrencies does not cause the general public to lose faith in government or state regulation. The failure of cryptocurrencies to deliver an effective alternative to state functions, however, reinforces the importance of government in people's minds. Emerging technologies that attempt to replace key state functions will therefore have to be considerably more successful than cryptocurrencies currently are in order to threaten the role of the state in public perception.

The Rise of Cryptocurrency

Cryptocurrencies are peer-to-peer payment systems that allow online payments to be sent without any financial intermediary. They are unique among financial assets in having “no association with any higher authority [and] no physical representation” (Corbet et al. 2019, 182). The foundation for cryptocurrencies are cryptographic protocols that control how currency can be created and exchanged (De Filippi 2014).

The first cryptocurrency, Bitcoin, was released in 2009 by an anonymous figure or group known only as Satoshi Nakamoto. Initially, it was a niche interest among “tech geeks, drug dealers, and Hayek enthusiasts” (Bratspies 2018, 14–15). In this early period, one of the primary uses of Bitcoin was on black markets like the infamous Silk Road (Böhme et al. 2015).

In the following years, additional cryptocurrencies were developed, including currencies such as Litecoin, Ether, and the “meme coin” Dogecoin. Interest in cryptocurrencies grew, buoyed by strong online communities built around an interest in cryptocurrency (Kim et al. 2021; McGivern 2023). Increased demand caused the value of Bitcoin and other cryptocurrencies to skyrocket, fuelling interest in these new products as investment opportunities. Unsurprisingly, this development produced bubble dynamics. By December 2017, the price of Bitcoin (which was initially less than US\$0.01) came close to US\$15,000. In the months that followed, Bitcoin lost approximately 60% of its value as its price plummeted. Other cryptocurrencies underwent similar crashes (Bratspies 2018).

Despite this volatility, cryptocurrencies have continued to attract attention, including from institutional investors. One US survey of institutional investors in 2021 found that over half of them had cryptocurrency investments or stock in cryptocurrency companies.¹ The number of cryptocurrencies has exploded, with some estimating that as of 2023 there are over 22,000.² In 2021, the cryptocurrency market experienced two boom-and-bust cycles (with Bitcoin peaking at over US\$68,000) in rapid succession. In 2022, ads for cryptocurrency companies featuring celebrities such as LeBron James and Larry David aired during the Super Bowl, coinciding with a brief new boom for cryptocurrencies before prices collapsed again. Nevertheless, cryptocurrencies’ arrival in mainstream culture was cemented. According to recent nationally representative surveys in 15 advanced and emerging economies, 75–95% of respondents between the ages of 18 and 65 had heard of cryptocurrencies. The same surveys found that in 13 of the 15 countries, at least 20% of respondents between the ages of 18 and 65 had bought cryptocurrency.³ In five of these countries, the percentage is around 50% (YouGov 2023).

¹“Most institutional investors expect to buy digital assets, study finds.” *Reuters*, July 20, 2021. <https://www.reuters.com/business/most-institutional-investors-expect-buy-digital-assets-study-finds-2021-07-20/>. However, a different survey from the same time period found that a third of institutional investors agreed with Warren Buffett’s assessment of cryptocurrencies as “rat poison squared.” “Crypto is ‘rat poison’, a third of mainstream investment firms tell JPM.” *Reuters*, June 23, 2021. <https://www.reuters.com/business/finance/crypto-is-rat-poison-third-mainstream-investment-firms-tell-jpm-2021-06-23/>

²“Different Types of Cryptocurrencies.” *Forbes*, July 25, 2023. <https://www.forbes.com/uk/advisor/investing/cryptocurrency/different-types-of-cryptocurrencies/>

³The exceptions were France and Japan, where the percentage of respondents who report having bought cryptocurrency is just under 20%.

Cryptocurrency and the State

The increasing mass awareness of—and investment in—cryptocurrencies is expected to have dramatic societal implications. In particular, scholars and observers have pointed to ways in which cryptocurrencies can undermine state functions. First, the origins of cryptocurrency are explicitly political: Bitcoin, the original cryptocurrency, was conceived specifically as a means of escaping the need for a higher authority in the form of central banks or financial intermediaries. The words “The Times 03/Jan/2009 Chancellor on brink of second bailout for banks,” referring to a government bailout of private banks in the global financial crisis, are contained in the first block of data in Bitcoin (Baldwin 2018). The founder(s) of Bitcoin laid out their rationale for the new currency more explicitly in an online post:

The root problem with conventional currency is all the trust that’s required to make it work. The central bank must be trusted not to debase the currency, but the history of fiat currencies is full of breaches of that trust. Banks must be trusted to hold our money and transfer it electronically, but they lend it out in waves of credit bubbles with barely a fraction in reserve. We have to trust them with our privacy, trust them not to let identity thieves drain our accounts. (Nakamoto 2008)

As the quote makes clear, cryptocurrency was born out of deep skepticism of not only the traditional financial industry, but also of the utility of government control over money. This opposition to state regulation has remained a key component of cryptocurrency discourse. Bitcoin’s “Declaration of Independence,” published in Bitcoin Magazine in 2014 claimed, for instance, that “Bitcoin is inherently anti-establishment, anti-system, and anti-state. Bitcoin undermines governments and disrupts institutions because bitcoin is fundamentally humanitarian ... Bitcoin is sovereignty.”⁴ For cryptocurrency enthusiasts, the technology underlying cryptocurrencies renders government control over money and financial regulation by the state obsolete. At the same time, cryptocurrencies provide freedom from state intervention and government surveillance. Typical cryptocurrency discourse frames cryptocurrencies as a solution

⁴“The declaration of Bitcoin’s independence.” *Bitcoin Magazine*, May 14, 2014. <https://bitcoinmagazine.com/culture/declaration-bitcoins-independence>

to the problems generated by government, including inflation, invasion of privacy, economic stagnation, corruption, and even war (Baldwin 2018; Dodd 2018).

Second, in addition to these discursive attempts to delegitimize the state, cryptocurrencies may also pose challenges to governments in other ways. National currencies regulated by state monetary authorities have long been associated with nation-state building and the expansion of state control. Currencies governed by state authorities like central banks can be used to help manage the economy, ensure tax payments, and provide government benefits to citizens (Cohen 2018; Helleiner 1999). The literature has also argued that state-issued currencies help foster national identity and promote the state's values (Helleiner 1998; McNamara 2015). Issuing a national currency can even enhance a state's ability to project power internationally (Kirshner 1995).

There are concerns that widespread adoption of cryptocurrencies would pose a threat to states and their ability to perform these functions. In particular, cryptocurrencies could disrupt state-society relations that are traditionally mediated through state-issued currencies. For instance, cryptocurrencies can facilitate tax evasion and allow individuals to circumvent money laundering and anti-terrorism financing laws, putting them outside the realm of state control (Kleiman 2013). In the most extreme case, widespread use of cryptocurrencies in lieu of state-issued currencies could undermine the state's ability to conduct monetary policy and govern the economy (De Filippi 2014). Ruchir Sharma, Morgan Stanley's chief global strategist, warned in 2020 that cryptocurrencies could undermine the global hegemony of the US dollar.⁵ In these terms, cryptocurrencies could be seen as a potential threat to national sovereignty.

It is also plausible, however, that the rise of cryptocurrencies will instead strengthen the case for state regulation of money and financial assets. First, an important aspect of the rise of cryptocurrencies is the fact that their use as payment systems has not lived up to initial expectations. Cryptocurrency transactions can be slow and entail high transaction costs, limiting cryptocurrency's utility for everyday payments. The high degree of volatility in cryptocurrency prices further reduces its ability to act as a medium of exchange or unit of account (Prasad

⁵“Will bitcoin end the dollar's reign?” *Financial Times*, December 9, 2020. <https://www.ft.com/content/ea33b688-12e0-459c-80c5-2efba58e6f1a>

2021).⁶ In this way, cryptocurrencies in their current form offer a useful corrective to the idea that money does not require a state to work well.

Second, while cryptocurrencies have evolved to primarily function as speculative assets rather than actual currencies, their shortcomings are becoming increasingly evident even for this purpose. Not only are cryptocurrency prices extremely volatile, entire cryptocurrency exchanges (and cryptocurrencies themselves) can collapse without warning, leaving users without access to their cryptocurrency assets and, often, without legal recourse.⁷ In addition to their price volatility, cryptocurrencies' vulnerability to hacks highlights their deficiencies as an investment vehicle. The rise of cryptocurrency has been marked by a series of high-profile hacks in which hundreds of millions of dollars worth of cryptocurrency investments were stolen (Corbet et al. 2019).

Finally, fraud appears to be endemic to the cryptocurrency industry. A report found that nearly 80% of Initial Coin Offerings (through which funds are raised by selling cryptocurrency coins to speculators or investors) in 2017 were fraudulent.⁸ In the last two years alone, the CEOs of two of the largest cryptocurrency companies at the time—Do Kwon of Terraform Labs and Sam Bankman-Fried of FTX—have been charged with securities fraud, wire fraud, and commodities fraud. The losses are estimated in the billions of dollars.⁹ Sam Bankman-Fried, in particular, was widely regarded as a poster child for the respectable side of cryptocurrencies.¹⁰ The worldwide media attention surrounding his arrest and trial may well make cryptocurrencies increasingly synonymous with scams and crime in the general public consciousness.

Together, these aspects of cryptocurrencies—which are to a great extent linked to their

⁶An important exception may be contexts such as Nigeria, where high levels of inflation may make cryptocurrencies less risky than the official currency. “Nigeria crypto usage growing further, report says.” *Reuters*, September 19, 2023. <https://www.reuters.com/technology/nigeria-crypto-usage-growing-further-report-says-2023-09-19/>

⁷“Looking to get your funds out of a collapsed crypto platform? Don’t get your hopes up.” *CNBC*, July 19, 2022. <https://www.cnn.com/2022/07/19/what-happens-to-my-funds-if-a-crypto-exchange-goes-bankrupt.html>

⁸“Cryptoasset Market Coverage Initiation: Network Creation.” Satis Group, July 11, 2018. https://research.bloomberglaw.com/pub/res/d28giW28tf6G7T_Wr77aU0gDgFQ

⁹See “Terra founder Do Kwon charged with fraud over its \$40 billion crypto crash.” *The Verge*, February 16, 2023. <https://www.theverge.com/2023/2/16/23603360/terra-luna-securities-fraud-sec-do-kwon> and “Where Did FTX’s Missing \$8 Billion Go? Crypto Investigators Offer New Clues.” *TIME*, December 21, 2022. <https://time.com/6243086/ftx-where-did-money-go/>

¹⁰“Sam Bankman-Fried’s trial to test dueling explanations for FTX’s collapse.” *Reuters*, September 26, 2023. <https://www.reuters.com/legal/sam-bankman-frieds-trial-test-dueling-explanation-s-collapse-crypto-exchange-2023-09-26/>

lack of regulation—may significantly undermine their attractiveness as an alternative to state-issued currencies or government-regulated investment vehicles. If this is the case, we may also expect a renewed appreciation for government regulation and the state in general. Proponents of cryptocurrency have placed great emphasis on its freedom from government regulation and intervention. When cryptocurrencies fail to deliver, it can serve as a stark reminder of the importance of government.

Hypotheses

Based on the arguments outlined in the previous section, we develop two sets of hypotheses. First, we explore the possibility that the rise of cryptocurrencies will make the general public more skeptical of the need for government and state regulation. As described above, discourse on platforms related to cryptocurrencies is often strongly anti-government and may become more convincing to the general public as cryptocurrencies become more popular. Similarly, the existence of cryptocurrencies offers the idea that technology can replace or undermine important state functions, rendering government obsolete or impotent. According to these intuitions, information about cryptocurrencies' successes may not only reduce support for government regulation, but may also negatively affect trust in government:¹¹

H1a: Exposure to positive information about cryptocurrencies reduces the public's trust in government.

H1b: Exposure to positive information about cryptocurrencies reduces the public's support for government regulation.

Conversely, as outlined in the previous section, when the general public learns about the failures of cryptocurrencies to live up to their proponents' promises of secure financial transactions without state oversight, they may be reminded of the importance of government. Cryptocurrency may serve as a cautionary tale of the consequences of unregulated finance and over-optimistic faith in technology. While the government may be blamed for poor economic out-

¹¹H1a and H1b were not preregistered in the pre-analysis plan for the survey experiment. H2a and H2b were preregistered.

comes, the sheer scale of fraud in a sector that explicitly pits itself against the state may make governments look more trustworthy in comparison. These considerations lead us to our second set of hypotheses:

H2a: Exposure to negative information about cryptocurrencies increases the public's trust in government.

H2b: Exposure to negative information about cryptocurrencies increases the public's support for government regulation.

Below, we test these hypotheses in the case of South Korea. We first show results from a media analysis to explore what types of information about cryptocurrency South Koreans are likely to be exposed to. We then present results from an online survey experiment that tests how exposure to different types of information about cryptocurrency affects South Koreans' trust in government and support for government regulation.

The Case of South Korea

Among advanced and emerging economies for which comparable data on familiarity with and ownership of cryptocurrency exist, South Korea represents the average case. Around 90% of South Koreans between the ages of 18 and 65 have heard of cryptocurrencies, which is very close to the average percent across 15 advanced and emerging economies.¹² Almost 40% of South Koreans in the same age group report having previously bought cryptocurrency, nearly identical to the average across these countries (YouGov 2023).

In early 2018, due to both the growing popularity of cryptocurrency and alarming accounts of many young South Koreans reporting bankruptcy or debt from cryptocurrency investments, South Korean officials announced their intention to ban cryptocurrency trading. This announcement quickly sparked significant public outcry and protests, with many young South Koreans viewing cryptocurrencies as a potential escape from the gloomy economic prospects their gen-

¹²The other countries surveyed are Argentina, Brazil, France, Germany, India, Indonesia, Japan, Mexico, Nigeria, South Africa, the Philippines, the United Kingdom (UK), the US, and Vietnam.

eration faces and a possible channel of rapid wealth accumulation.¹³ After the public backlash, the government softened its stance, shifting from a full ban to regulatory tightening, requiring real-name transactions in cryptocurrency trading.

The stance of the South Korean government reflects both the significant interest in cryptocurrencies among South Koreans and several high-profile scandals involving cryptocurrency. For example, there have been repeated exposés on cryptocurrencies' pivotal role in the Telegram Nth room scandal in South Korea.¹⁴ Officials suspected that cryptocurrencies were used to pay for access to these exploitative chatrooms, ensuring anonymity for the buyers.

In 2021 and 2022, the crypto world in South Korea witnessed a series of major crashes. In 2021, the global cryptocurrency market experienced a significant downturn, with most currencies shedding a substantial portion of their value in a brief time span. South Korea, being at the forefront of the crypto market, was deeply impacted. Furthermore, in 2022, Luna, linked to the Terra blockchain project initiated by a South Korean entrepreneur, collapsed. This crash, frequently dubbed the Terra-Luna scandal, was marked by repeated revelations of crypto entrepreneurs siphoning off funds from unsuspecting crypto investors.¹⁵ Numerous instances of fraud or dereliction of duty by Terra's founders were also brought to light.¹⁶

Media Analysis

Against this backdrop of events in the Korean cryptocurrency environment, we first explored, descriptively, the type of information about cryptocurrencies that the general public in South Korea was likely to encounter. By revealing the actual prevalence of different narratives sur-

¹³“Cryptocurrency Was Their Way Out of South Korea’s Lowest Rungs. They’re Still Trying.” *The New York Times*, February 10, 2019. <https://www.nytimes.com/2019/02/10/business/south-korea-bitcoin-cryptocurrencies.html>

¹⁴The Telegram Nth room scandal involved a series of online sex crimes where victims were blackmailed into performing degrading and often violent acts, which were then shared in private Telegram chatrooms. See “Huobi Korea Delists XMR Amid Nth Room Sexual Exploitation Case Rumors.” *Cointelegraph*, April 12, 2020. <https://cointelegraph.com/news/huobi-korea-delists-xmr-amid-nth-room-sexual-exploitation-case-rumors>

¹⁵See “How a Trash-Talking Crypto Founder Caused a \$40 Billion Crash.” *The New York Times*, May 18, 2022. <https://www.nytimes.com/2022/05/18/technology/terra-luna-cryptocurrency-do-kwon.html> and “As Justice Is Sought for Do Kwon, South Korea’s Crypto Scene Emerges From Terra’s Shadow.” *CoinDesk*, April 13, 2020. <https://www.coindesk.com/consensus-magazine/2023/04/13/dokwon-korea-terra/>

¹⁶“Terra co-founder Daniel Shin charged with fraud in South Korea.” *The Verge*, April 25, 2023. <https://www.theverge.com/2023/4/25/23697528/terra-daniel-shin-charged-south-korea-crypto-fraud>

rounding cryptocurrency discussed in public, our aim was to better understand the real impact of varying information treatments on people’s trust in the government regarding cryptocurrency. While experiments can estimate only a one-shot effect of such information treatments, the actual effect size would be considerably larger if the information we manipulated in survey experiments is frequently discussed in the ongoing public discourse about cryptocurrency in South Korea.

To illustrate the extent to which cryptocurrency has been discussed in South Korean public discourse, we gathered all major national TV news transcripts that mentioned cryptocurrency in their headlines from 2012 to 2022.¹⁷ We also gathered TV news transcripts related to the stock market in general to provide a baseline for comparison. The TV news articles’ URLs from KBS, MBC, SBS, YTN, and OBS were collected using [BigKinds](#), a publicly available news aggregator platform that offers transcript information based on a specified set of keywords. The reason we included descriptive plots based on TV news transcripts in the main text, instead of those from other media sources like newspapers, is that TV news reaches a much wider audience than newspapers (Korea Press Foundation 2022). However, based on BigKinds’ newspaper data, the overall pattern of shifts in both the quantity and tone of South Korean media coverage on cryptocurrency remains consistent, regardless of the medium.

After manually filtering out a few false positives that emerged from the headline keyword search but were not relevant to cryptocurrency, a total of 41,469 news videos constituted our final collection of TV news transcripts pertaining to the Korean cryptocurrency market ($N = 41,469$). To extract the text from each URL stored by BigKinds, we developed a manual scraper in Python to retrieve each news video’s transcript, along with other pertinent details like the publication date and reporter.

Figure 1 displays the relative prominence the issue of cryptocurrency received from TV news media. Since national TV news may be one of the primary channels through which ordinary South Korean citizens learn about cryptocurrency in their daily lives, we believe that Figure 1 effectively illustrates the extent of cryptocurrency-related information communicated to the general public. The trend in Figure 1 aligns closely with the overarching economic and

¹⁷Bitcoin OR Virtual currency OR Cryptocurrency OR Electronic currency

political realities surrounding the cryptocurrency markets in South Korea. For instance, the most significant spike in cryptocurrency news coverage occurred when the government publicly announced its intention to address the negative impacts of the cryptocurrency market on citizens’ well-being around early 2018. Other smaller but noteworthy surges in media attention on cryptocurrency arose when crime scandals, either related to cryptocurrency investments or its entrepreneurs, came to light.

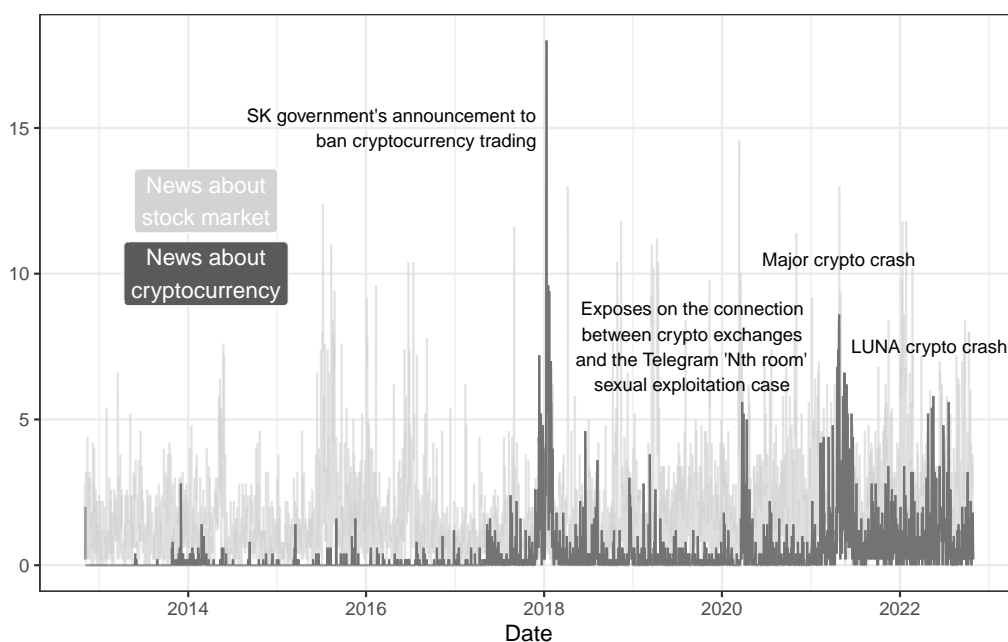


Figure 1: Daily Trends in the Amount of Cryptocurrency Coverage on National TV News

While Figure 1 shows how the *level* of media attention to cryptocurrency has intensified and waned over time, it does not capture *how* cryptocurrency was portrayed in the news. Thus, we employed a supervised learning approach to predict the stance, tone, or relative framing of discussions about cryptocurrency in South Korean TV news over time. To predict the stance of cryptocurrency discourse in mainstream news, we segmented each video’s transcript into separate units. Specifically, each paragraph of the digitized transcript from every news video was treated as a segment for text analysis (i.e., the unit of analysis). We then fine-tuned several Transformer-based language models, including (a) BERT, (b) RoBERTa, (c) KoELECTRA, and (d) Transformer-based Neural Network models, using human annotations from a random subsample of the news video segments. We present the estimated stance scores from the BERT-based classifier since it has the best model metrics out of the four models we fine-tuned with

the same annotation data (the final *F1* score is 0.94; see Appendix A for the model evaluation metrics for each of the four models we fitted).

Each multi-class classification model predicted whether a text segment from a news video transcript (1) implies a positive stance toward cryptocurrency or related technologies or entities (*Positive*: +1), (2) implies a negative stance toward cryptocurrency (*Negative*: -1), or (3) remains neutral (*Neutral*: 0). One of the researchers manually labeled a random sample of approximately 5.8% of all the collected news segments, annotating each segment as either *Positive*, *Negative*, or *Neutral*. This subsample of annotated segment data was used as the training data for tuning the models. After retrieving the estimated scores of +1, -1, and 0 for each segment respectively, we calculated the average score for the segments of each news video, resulting in a numeric value ranging from -1 to 1 for every news video. Below are some examples representing each value in the stance categorization:

Positive: “Cryptocurrency is booming, and many Koreans are optimistic about the potential to profit through this alternative investment method [KBS, 2019].”

Negative: “The cryptocurrency market is in decline due to recurring scandals involving investors and CEOs [SBS, 2022].”

Neutral: “Cryptocurrency is a popular form of digital currency that uses cryptography for securing transactions [MBC, 2018].”

Figure 2 illustrates the change in tone of news coverage regarding both cryptocurrency and the stock market over time. In 2018, a notable drop was observed when the government announced plans to regulate cryptocurrency. Also, when major cryptocurrency crashes occur, whether they are due to global cryptocurrency shocks or domestic cryptocurrency scandals involving high-profile entrepreneurs, we observe a general decline in favorable coverage of cryptocurrency. When combining Figures 1 and 2, the negative coverage of cryptocurrency coincides with periods when cryptocurrency was heavily discussed in the TV news media. These results suggest that many Koreans have indeed been exposed to a shifting amount and tone of media coverage related to cryptocurrency.

Cryptocurrency has not necessarily been a new topic for the South Korean public — especially given that the coverage amount has been comparable to stock market news, which is a

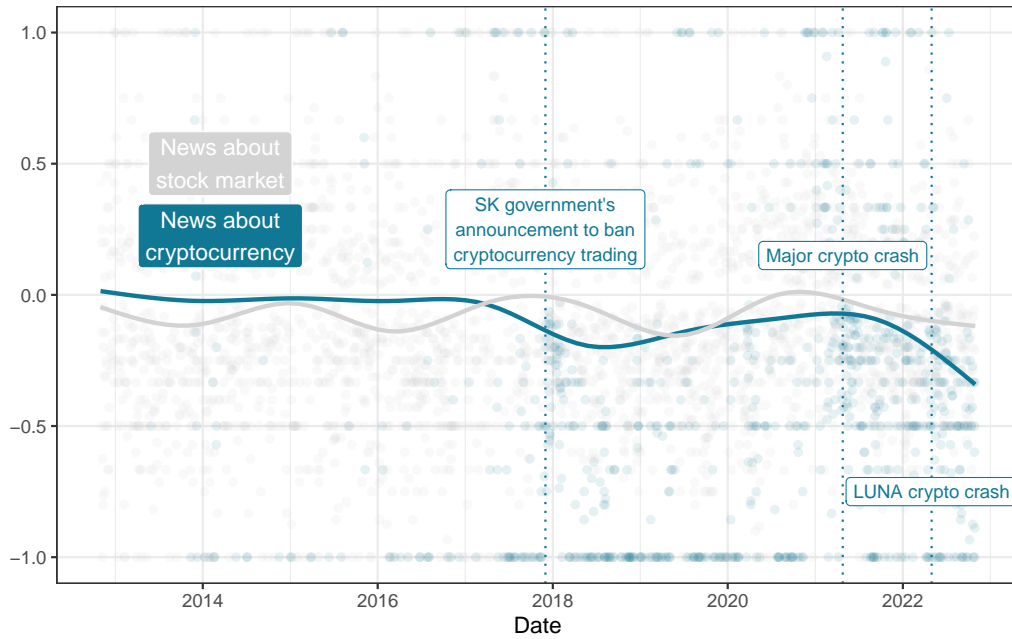


Figure 2: Daily Trends in the Tone of Cryptocurrency Coverage on National TV News

staple of economic news in daily discourse — and has been depicted both positively and negatively. However, it has been portrayed more negatively in recent years due to growing problems surrounding cryptocurrency’s systems and investment channels. Given that the public news discourse on cryptocurrency has been sufficiently salient and diverse, we turn to the causal part of our analysis: how different information surrounding cryptocurrency affects people’s attitudes toward the government.

Survey Experiment

How does exposure to these different types of information about cryptocurrencies affect South Koreans’ attitudes? Above, we hypothesize that there are different ways in which the rise of cryptocurrencies could affect trust in government and support for regulation: positive information about cryptocurrencies may reduce trust in government and support for regulation, while negative information may do the opposite. To test these hypotheses, we conducted an online survey experiment among 2,000 South Koreans in December 2022.¹⁸ The survey was administered by the South Korean survey firm Embrain. The sample is nationally representative.

¹⁸This research was found exempt from IRB review by the University of Pennsylvania IRB (protocol number 852633). The experiment was preregistered prior to fielding: <https://osf.io/jhdpw>

Respondents were randomly assigned to one of three conditions: negative information on cryptocurrencies, positive information on cryptocurrencies, and a control condition with information on houseplants.¹⁹ Given potential ethical concerns around providing research participants with information that may make them more interested in investing in a highly volatile and insecure asset, we made sure that the information in all of our conditions closely resembled South Korean media coverage on the topic, which respondents may be exposed to on an every-day basis. In particular, we took quotes directly from South Korean media and provided only factual information that was reported in the media at the time. In the positive treatment condition, we included information about the cryptocurrency industry's recent efforts to make their products more secure and less volatile, as well as institutional investors classifying Bitcoin as a safe haven asset. In the negative treatment condition, we included information about the extreme volatility of cryptocurrencies and testimonials by individuals who lost large amounts of money when cryptocurrency prices collapsed. The control condition contained entirely unrelated information on houseplants.²⁰

As a manipulation check, we collected post-treatment information on respondents' perceptions of cryptocurrency as an investment, constructing an index based on their level of agreement with statements about the likelihood of profiting from cryptocurrency investment, the security of cryptocurrency investment, and the likelihood of large losses due to cryptocurrency investment.²¹ We expect more positive perceptions of cryptocurrency as an investment among respondents exposed to positive information about cryptocurrencies compared to the control group, and more negative perceptions among respondents exposed to negative information compared to the control group.

The two outcomes we are interested in are trust in government and support for government regulation. We follow a pre-post design, in which items capturing outcome variables are asked both prior to and after the treatment. The pre-post difference forms the outcome variable (Clifford, Sheagley and Piston 2021). Trust in government is measured by an index of responses to a question about how much the respondent trusts the government to do the right thing and

¹⁹A third treatment condition, in which respondents were assigned information about general economic uncertainty, was also part of the experiment but is not discussed here.

²⁰Full treatment and control conditions can be found in the appendix.

²¹Full question wording can be found in the appendix.

	Perception of cryptocurrency	
	Model 1	Model 2
Cryptocurrency positive	0.12** (0.06)	
Cryptocurrency negative		-0.12** (0.06)
Respondents	1000	1000

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$

Table 1: Results from manipulation check

a question about how many members of the government the respondent believes are corrupt. Support for government regulation is measured by an index of responses to questions about whether respondents believe markets are more efficient and less wasteful than governments, whether markets are democratic, and whether public institutions should be governed by market forces.

For each outcome, we separately compare the outcome measures in each of the treatment groups to the control group. We show results with and without control variables (age, gender, education, region, ideology, and party identification).

Results from the manipulation check are reported in Table 1. As expected, exposure to positive information about cryptocurrency resulted in more positive perceptions of cryptocurrencies as an investment vehicle compared to the control group, while exposure to negative information resulted in more negative perceptions compared to the control group. As such, we conclude that our treatments were successful in manipulating respondents' perceptions of cryptocurrencies.²²

Table 2 shows results from the main analysis using trust in government as the outcome variable. The coefficients on the positive information treatment are positive but not statistically significant. By contrast, the coefficients on the negative information treatment are positive and statistically significant. These results support the hypothesis that exposure to negative information about cryptocurrencies increases trust in government. Substantively, the effect

²²It should be noted that even in the control condition, most respondents did not consider cryptocurrencies a good investment: on a scale of 1 (most negative) to 7 (most positive), the mean score was 2.28.

	Trust in government			
	Model 1	Model 2	Model 3	Model 4
Cryptocurrency positive	0.06 (0.04)	0.06 (0.04)		
Cryptocurrency negative			0.11*** (0.04)	0.10** (0.04)
Control variables		✓		✓
Respondents	1000	1000	1000	1000

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$

Table 2: Effect of positive and negative information about cryptocurrency on trust in government.

	Support for government regulation			
	Model 1	Model 2	Model 3	Model 4
Cryptocurrency positive	-0.04 (0.04)	-0.04 (0.04)		
Cryptocurrency negative			-0.01 (0.04)	-0.01 (0.04)
Control variables				
Respondents	1000	1000	1000	1000

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$

Table 3: Effect of positive and negative information about cryptocurrency on support for government regulation

represents an increase in trust of approximately 15% of a standard deviation. However, we do not find evidence in favor of the hypothesis that positive information decreases trust in government.

Table 3 shows results from the same analysis using support for government regulation as the outcome variable. The coefficients on both treatments are small, negative, and not statistically significant. These results therefore do not provide evidence that exposure to information about cryptocurrencies—whether positive or negative—affects support for government regulation in general.

Overall, we find support for hypothesis H2a—exposure to negative information about cryptocurrencies increases trust in government—but none of our other hypotheses are supported. In particular, exposure to positive information about cryptocurrencies does not appear to affect political attitudes, while negative information about cryptocurrencies increases trust in government. A potential explanation for this discrepancy might be that South Koreans are more receptive to negative information about cryptocurrencies, given the low levels of confidence in cryptocurrency that we observe in the control group. While average perceptions of cryptocurrencies were more positive among respondents who received the positive information, the difference to the control group is relatively small, suggesting that it is difficult to persuade South Koreans of the benefits of cryptocurrencies. This is unsurprising given the high levels of negative media attention as opposed to positive coverage of cryptocurrencies, as described in the previous section of this paper.

Discussion

The rapid evolution of cryptocurrencies from niche technology to mass consumption product poses important questions about implications for the relationship between finance, states, and citizens. Cryptocurrencies were born out of a fundamental distrust of state control over money. Technological innovation was seen as making government regulation redundant, a view proponents of cryptocurrencies continue to defend. At the same time, however, cryptocurrencies' actual performance so far as either money or an investment vehicle has cast doubt on the idea that government regulation of finance is unnecessary or undesirable. The rise of cryptocurrencies may therefore be expected to either undermine or strengthen confidence in the state, depending on which of these narratives is most persuasive.

The results from our survey experiment in South Korea suggest that the narrative of cryptocurrencies' failure is more likely to affect trust in governments than the narrative of its success. These findings are consistent with the results of our media analysis, which show that South Koreans are exposed to more negative than positive coverage of cryptocurrencies. Given the media environment, it is understandable that the public appears to be more receptive to

information about cryptocurrencies' instability.

This research has important implications for our understanding of how new technologies can reshape the relationship between citizens and states. Accounts of emerging technologies often emphasize their potential to undermine state capacity or legitimacy (Caparini and Gogolewska 2021; Fitzgerald and Parziale 2021). While there are certainly ways in which widespread use of cryptocurrencies could hamper government effectiveness, our findings suggest that state legitimacy is not currently threatened by cryptocurrencies due to their ineffectiveness in the absence of government regulation. Similarly, other emerging technologies that promise to make the state redundant may, in the end, shore up support for government regulation if they fail to deliver on their promises.

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Appendix

Appendix A: Media Analysis

<i>Base Model</i>	<i>Number of Epochs</i>	<i>Accuracy</i>	<i>Precision</i>	<i>Recall</i>	<i>F1</i>
BERT	6	0.92	0.95	0.92	0.94
RoBERTa	6	0.90	0.95	0.86	0.9
KoELECTRA	6	0.89	0.90	0.88	0.89
Neural Net	6	0.87	0.88	0.86	0.87

Table A1: Model Metrics

Appendix B: Survey Experiment

The treatment and control vignettes are shown below, in Korean and in English.

Treatment 1: Cryptocurrency Positive

가상화폐 불확실성 극복, 안정적 전망 이따라



암호화폐(가상자산) 광풍이다. 최근 우리나라에선 가상화폐의 불확실성을 극복하려는 시도가 늘어나고 있다. 가상화폐 투자로 인한 대규모 인출 상황을 막기 위해 다양한 제도적 장치를 개발하고 있다. 예를 들면 거래소 내 고객 자금 인출을 막는 등, 위험요소가 많은 투자자들에게는 큰 부담을 주는 식으로 안정성을 확보하는 것이다.

또한 가상화폐 거래 실명제를 더욱 강화하고, 의심거래 감시도 대폭 강화해 암호화폐의 불확실성을 잠재우고자 하는 움직임 역시 나타나고 있다. 최근 신규 거래가 막혀 있던 가상화폐 거래소에 새로운 은행 입출금서비스가 도입되며 정책의 불확실성이 제거됐다.

이 외에도 미국 1위 은행 뱅크오브아메리카(Bank of America)에서 최근 비트코인을 다시 안전 피난처 자산으로 보고 있다는 사실도 눈에 띈다. 올해 8월 중순 이후 금과 비트코인의 상관관계가 0에서 0.5로 증가한만큼, 투자자들은 거시적 불확실성 속에서 비트코인을 ‘상대적인 안전 피난처’로 볼 수 있다고 주장한다.

스타트업 기획자 황모(26)씨도 최근 가상화폐인 비트코인 거래에 대한 기대가 많다. “블록체인과 가상화폐의 불확실성은 메타버스와 NFT의 융합으로 상당수 극복되고 있다”며 “탈중앙화된 웹을 구현할 수 있는 기술력을 바탕으로 메타버스 및 암호화폐를 기반으로 한 비즈니스가 더욱 안정적으로 성장할 것으로 예측한다”고 답했다.

English Translation

Bitcoin Evolving into a More Stable Cryptocurrency: Supported by Several Policies to Overcome Volatility

South Korea is currently in a cryptocurrency frenzy. More and more attempts have been made to overcome the volatility in cryptocurrency in recent years. Various institutional measures are being implemented to prevent large-scale price volatility in cryptocurrency investment. By putting a heavy burden on investors with high risk factors, for example, many efforts are being initiated to prevent the sudden withdrawal of customer funds in the exchange.

More efforts are being made to tame the uncertainty of cryptocurrency markets by incentivizing real-name crypto transactions and increasing the monitoring of suspicious transactions. Policy uncertainties have also been reduced as new bank deposit and withdrawal services have recently been introduced to cryptocurrency exchanges.

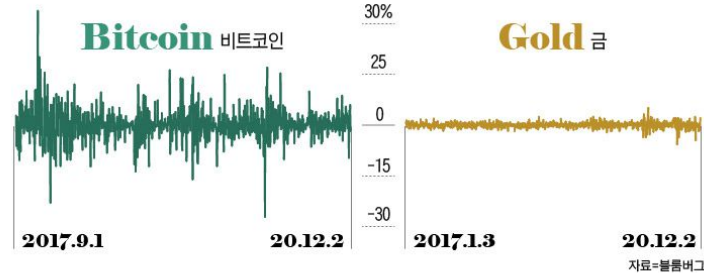
It should also be noted that Bank of America, the No. 1 bank in the United States, recently classified Bitcoin as a safe haven asset. As the correlation between gold and Bitcoin has increased from 0 to 0.5 since mid-August this year, investors argue that Bitcoin can be viewed as a “relative safe haven” amid global macroeconomic challenges.

[A], who is currently 38 years old, also has high expectations for Bitcoin transactions. “The uncertainty surrounding blockchain and cryptocurrency is being overcome by the convergence of the Metaverse and NFTs,” he said. 28-year-old [B] similarly said: “Based on current technology, I think business based on the Metaverse and cryptocurrency will grow more stably.”

Treatment 2: Cryptocurrency Negative

폭등과 폭락의 반복? 널뛰는 비트코인 가격

비트코인과 금 일일변동률 진폭이 클수록 변동률이 크다는 의미



암호화폐(가상자산) 광풍이다. 우리나라에선 유독 가격 널뛰기가 심하다. 가상화폐 투자 거품 우려에도 불구하고, 일확천금을 노리는 사람들은 여전히 늘고 있다. 주변에서 "큰 돈을 벌었다"는 투자 사례가 입소문을 타며 유포하는가 하면, 온라인 단체대화방이 개설돼 수백 명이 가상화폐 공부에 열중한다. 대기업 직원 김모(38)씨도 "2017년 지인이 비트코인으로 300%가 넘는 수익률을 올린 것을 보고 단기간에 수익을 극대화할 수 있는 투자 방법이라고 생각해 코인에 당시 여유 자금을 몽땅 털어 넣었다"고 얘기했다.

가상자산 붐을 타고 손에 잡힐 듯 했던 김모씨의 꿈은 신기루처럼 날아갔다. 비트코인 수익률이 -93%까지 내려갔기 때문이다. "1997년 외환위기 때 부친이 실직한 이후 어두워진 집안 분위기를 살려보고 싶었다"는 김씨는 지난달 26일 법원으로부터 개인회생 개시 결정을 받았다. 김씨가 신고한 빚은 3억700만원. 법원의 조정에도 김씨는 36개월간 월 400만원씩 갚아내야만 한다.

스타트업 기획자 황모(26)씨도 최근 가상화폐인 비트코인 거래에 대한 우려가 많다. 올해 초 200만원으로 비트코인을 구입했다가 5배 수익이 나자 본격 투자에 나섰지만, 비트코인 시세가 단 시간에도 폭등과 폭락을 반복하는 탓에 매일 서너 시간 이상 휴대폰을 붙들고 있거나, 자다가도 일어나 시세를 확인하고 다시 잠들기를 반복한다. 황씨는 "가상화폐는 24시간 거래가 가능하고 시세 상한선과 하한선이 없다 보니 주식 거래보다 중독성이 훨씬 강한 것 같다"고 말했다.

English Translation

The Unstable Ups and Downs of Bitcoin: The Sudden Surge and Collapse

South Korea is currently in a cryptocurrency frenzy. Crypto volatility is especially severe in South Korea. Despite concerns over a virtual currency investment bubble, more and more people are seeking their fortunes in cryptocurrency. [A], who is currently 38 years old, said “After seeing an acquaintance increase their Bitcoin investment by more than 300% in Bitcoin, I thought it was an investment method that would maximize profits in a short period of time, so I poured all my spare funds into Coin.”

[A]’s dream, which seemed to be in his grasp during the virtual asset boom, soon disappeared like a mirage. This is because Bitcoin’s return has fallen to -93%. “I wanted to make things better for my family after my father lost his job during the 1997 financial crisis,” [A] said. He received a court decision last month to begin personal rehabilitation. [A]’s reported debt is KRW 37 million. Despite the mediation of the court, [A] has to pay 4 million KRW a month for 36 months.

28-year-old [B] also has many concerns about transactions using Bitcoin, a cryptocurrency. Earlier this year, he purchased Bitcoin with 2 million KRW and made profits of five times the original investment. But because the Bitcoin market fluctuates a lot and is very volatile, he began routinely to check his cell phone more than three or four times every hour. He cannot fall asleep without checking the crypto price before going to bed. “Cryptocurrency is much more addictive than stock trading because it can be traded 24 hours a day and there are no upper and lower market limits,” [B] said.

식물과 함께 사는 삶, '반려식물' 열풍



직장인 A모(28) 씨는 퇴근 후 집에서 수박 새싹을 보는 게 일상의 소소한 재미라고 말한다. 사용하고 남은 플라스틱 용기에 먹다 남은 수박씨를 심은 결과 새싹이 나기 시작했다. 하루가 다르게 자라는 수박 줄기를 보며 A씨는 내심 열매까지 맺길 기대하고 있다.

최근 젊은층 사이에서는 ‘식집사,’ ‘풀멍,’ 그리고 ‘반려식물’ 열풍이 불고 있다. 화분 기르기는 중년층의 전유물이라는 고정관념을 가볍게 비껴갔다. ‘식집사’와 ‘풀멍’은 식물과 관련된 신조어로 청년 층 사이에서 주로 사용된다. 식집사는 ‘식물’과 ‘집사’의 합성어로 식물을 기르는 사람을 뜻하고, 풀멍은 식물을 바라보며 휴식을 취하는 모습을 의미한다. ‘반려식물’은 식물을 단순 유희목적으로 기르는 게 아니라 반려동물과 마찬가지로 정성을 들인다는 의미가 담겼다.

먹다 남은 수박 씨앗을 심고 기르는 중인 직장인 A모(28) 씨는 “환경을 생각해서 플라스틱 용기를 재활용해 화분처럼 사용했다”며 “씨앗이 한번 자라나더니 하루가 다르게 성장하고 있다. 자택에서 키우기 때문에 얼마나 자랄지 모르지만 열매도 열렸으면 하는 바람이다”라고 설명했다. A씨는 “퇴근 후 수박에 물을 주고 얼마나 컸는지 카메라로 기록하는 게 하루 일과가 됐다. 새끼 손톱 만한 수박 새싹 떡잎을 보니 마음이 편안해진다”고 답했다.

English Translation

The Plant-Crazy Generation: The Rise of the Houseplant Trend

28-year-old [A] says watching watermelon sprouts at home after work is a small pleasure of everyday life. The watermelon sprouts began to sprout after he planted the remaining seeds in the plastic containers that others threw away. Looking at the watermelon stems that grow higher day by day, [A] finds joy in thinking about when the seeds will bear fruit.

Recently, there has been a craze among young people for ‘houseplanting’, ‘plant-mung’ [being meditative near plants], and ‘companion plants’. It breaks with the stereotype that house plants are exclusively for middle-aged people. ‘Houseplanting’ and ‘plant-mung’ are newly coined words that are mainly used among young people. Houseplanting is a combination of ‘plant’ and ‘butler,’ meaning a person who grows a plant, and ‘plant-mung’ means taking a break while looking at plants. ‘Companion plants’ imply that plants are not grown simply for entertainment, but as real life companions.

38-year-old [B], who grows his own fruit and vegetables, said “I recycled plastic containers and used them as a flower pot. The buds are growing day by day. I don’t know how much it will grow, but I hope the fruit will also open.” [B] also said, “After work, taking care of the seeds and recording how big they have grown on camera became my daily routine. I feel comfortable seeing plant sprouts grow almost as large as a baby’s fingernail!”

Survey items referenced in the study are shown below.

Government Trust

How often can you trust the government to do what is right?

- Never (1)
- Some of the time (2)
- About half the time (3)
- Most of the time (4)
- Always (5)

How many of the people running the government are corrupt?

- None (1)
- A few (2)
- About half (3)
- Most (4)
- All (5)

Support for Government Regulation

We hear a lot of talk these days about the idea of the marketplace, where goods and services are bought and sold. Would you say... The marketplace is generally more efficient and less wasteful than the government / The marketplace is democratic because it allows everyone to express their preferences by choosing what to buy / Institutions like government and public schools should follow the principles of the marketplace

- Strongly disagree (1)
- Somewhat disagree (2)
- Slightly disagree (3)
- Neither disagree nor agree (4)
- Slightly agree (5)
- Somewhat agree (6)
- Strongly agree (7)

Perceptions of Cryptocurrency

Please indicate how much you agree or disagree with each of the following statements: Compared to other investment avenues, cryptocurrencies can certainly make a profit / Though subject to market risk, cryptocurrency is a secure form of earning money / While some may continue to profit, most people are just as likely to lose everything by investing in cryptocurrency

- Strongly disagree (1)
- Somewhat disagree (2)
- Slightly disagree (3)
- Neither disagree nor agree (4)
- Slightly agree (5)
- Somewhat agree (6)
- Strongly agree (7)