

# Bought too much toilet paper before that winter storm? Here's why

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Credit: Unsplash/CC0 Public Domain

Last month, as Typhoon Gaemi edged closer to Taiwan's shores, Cony

Ho shook his head in dismay as he read the same familiar headlines: "Supermarket shelves left bare as typhoon approaches." "Ahead of Gaemi's landfall, customers buy up milk, instant noodles."

It's a story we've all heard before: When [winter storms](#), hurricanes, heat waves and other disasters threaten to wreak havoc on a community, its citizens rush to stores to buy food and supplies...in bulk...that they don't end up needing. The panic-buying causes a shortage that didn't need to happen.

Why do so many consumers purchase far more than they need during weather emergencies, causing stores to run out of products before everyone has a chance to stock up?

Ho, an assistant professor of marketing and business analytics at Northern Arizona University, recently led a series of five studies to find out why—and to find a solution to the problem. He worked with Steven Liu, sales program director and an assistant professor at NAU, and two other researchers based in Taiwan, Kuan-Chou Ko and Chun-Chieh Wu.

"We know the climate is changing; every year, we see more and more weather-related disasters," Ho said. "So we urgently need to understand why when people expect extreme weather, they tend to stockpile a month's worth of things, even if the weather event will probably only keep them isolated in their homes for two or three days. Not only that, but we need to find a way to prevent people from stockpiling so there's enough supply for everyone."

The five studies, published this month in a [paper](#) in the *Journal of Product & Brand Management*, found that people tend to stockpile because they overestimate how scarce products will become in an emergency. The solution to allaying their fears, Ho and his co-authors found, is simple: Send reassuring messages that there's more than enough

supply to go around.

## Why we stockpile

Ho said that he and his colleagues started with a historical set of instant noodle sales data from Taiwan. The researchers' analysis showed that sales always increased exponentially whenever the Taiwanese government issued a typhoon warning, which tends to happen a handful of times each year.

"That gave us direct evidence that when extreme weather is on the way, Taiwanese people tend to stockpile [instant noodles](#)," Ho said. "So then our question was, why? What's the psychology behind this change in behavior?"

The researchers then conducted two behavioral experiments. They asked 200 online participants to read fake news coverage about an upcoming weather event, giving half of participants news about a major looming storm and the other half news about normal seasonal conditions ahead.

They asked the participants to share what amounts of perishable and non-perishable goods they planned to buy in advance, then they asked the participants to select what they would buy and predict how scarce the products would become.

What they found, Ho said, was that the participants who were planning for a major storm significantly overestimated the scarcity of every product and overwhelmingly planned to stockpile non-perishable goods.

"That study revealed that people overconsume whenever they perceive that there will be scarcity," Ho said.

In the fourth study, the researchers began to search for solutions to

people's habit of overconsuming. More than 150 online participants read fake news coverage about an impending storm where an expert declared the community "will probably be out of food and other necessities."

Another 150 participants received fake news coverage that said the governor had "prepared abundant food and necessary goods." A survey asked the participants how willing they were to buy things like noodles and water and how much they would buy—and the first group chose to buy much more.

"When we directly told participants, "You don't have to worry about scarcity; we will provide enough food and water," we found people were less likely to stockpile products," Ho said.

Those findings offer a lesson to policymakers and civil servants, Ho said, In advance of emergencies, secure the supplies people need and reassure them there's enough for everyone.

It's a tactic many leaders learned during the COVID-19 pandemic: They watched citizens clear store shelves to stock up on [toilet paper](#), cleaning supplies and masks, then they eased inventory issues by offering people free supplies.

## **The role of altruism**

The fifth and final study delivered yet another lesson to policymakers. Ho and his colleagues repeated the third study in the United Kingdom and added another element: an altruism assessment. After participants read fake weather reports and answered questions about stockpiling, they filled out a survey asking whether they have helped carry a stranger's belongings or let a neighbor borrow their valuable belongings.

The researchers found that those who showed more altruism were less

likely to stockpile, even in the event of a major disaster.

"People who stockpile might not be thinking of other people's needs," Ho said. "But if we can draw their attention to other people who need the same supplies, maybe through awareness campaigns or slogans, they'll purchase less. They'll feel good thinking, 'Oh, I can help society, I can help other people.'"

Promoting altruism is one potential solution to the stockpiling problem, Ho said. Another, suggested by psychologist colleagues, is to use facts to remove their biases.

"Imagine what would happen if we could ask consumers to realistically estimate how many days they'll be inconvenienced by a winter storm," Ho said. "If most people thought about it, they would estimate two, maybe three days. It would draw attention to the fact that they don't really need a month's supply of noodles."

Along with policymakers and consumers, Ho hopes the five studies help open the door to more research on the connections between [extreme weather](#) and the consumption of so-called "fast-moving consumer goods"—cheap and frequently purchased items like groceries and toilet paper.

"This area hasn't been investigated much, even though we have all experienced it," Ho said. "You see these things on the news and you can imagine what's going through people's heads. We can explain the behavior, but we don't think about the solutions. We need to start thinking more about how to solve problems that come up again and again."

**More information:** Cony M. Ho et al, Stormy sales: the influence of weather expectations on FMCG consumption, *Journal of Product &*

*Brand Management* (2024). [DOI: 10.1108/JPBM-07-2023-4611](https://doi.org/10.1108/JPBM-07-2023-4611)

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