



NEWS RELEASE

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Panic buying is driven by fear, perceived lack of supplies and social pressure, finds NTU Singapore study

Researchers from **Nanyang Technological University, Singapore (NTU Singapore)** have identified several psychological and social driving factors behind panic buying behaviour during the COVID-19 pandemic in Singapore.

The research team found that respondents who experienced certain social and psychological factors are 43 per cent more likely to be driven into panic buying.

Respondents usually experience a multitude of these factors simultaneously, with those experiencing **fear** being 14.7 per cent more likely to engage in panic buying. The next most powerful factor was **social pressure** (8.9%), which the study defines as a need to resort to panic buying to 'fit in' with their social circles, as well as a reaction to messages on social media and the news that depict hoarding behaviour.

Meanwhile, individuals that were affected by **perceived scarcity**, or had the notion that food and household supplies were running out, were 7.5 per cent more likely to participate in panic buying.

The remaining social and psychological factors analysed by the study are **perceived severity** (5.3%), the adverse effect that COVID-19 poses on an individual's well-being; **perceived susceptibility** (4.1%), which is an individual's perception of the likelihood of him or her contracting COVID-19; and feeling a **lack of control** (2.4%) with regards to the pandemic.

The rest of the factors (57%) are attributed to a host of other environmental, organisational, urban, and financial factors, which the researchers are conducting further research on to discern.

The results of the study were published in the peer-reviewed scientific journal *International Journal of Disaster Risk Reduction* in July.

The findings provide useful insights on a rare social phenomenon, as instances of mass public buying during the pandemic have taken place globally, including in Singapore, with consumers stockpiling goods like hand sanitiser, canned foods, and toilet paper, putting a strain on supply chains and market economies.

The researchers from **NTU's School of Civil and Environmental Engineering (CEE)** said that panic buying is detrimental to societies and can lead to system-wide failures – a topic affecting urban resilience and supply chains which are under the school's purview.

Assistant Professor Yuen Kum Fai, from NTU's CEE, who led the study, said: "At the height of the pandemic, we saw suppliers overwhelmed by demand, raw material shortages drove prices up, and there was a market failure where high demand met limited supply. We have seen measures to address the detrimental impact of panic buying, such as stores rationing essential items and modifying their opening hours. But our study tackles the root problem of the situation – the psychological and social components of panic buying. The results are not only useful for the big players in supply chains, but also policymakers and the public."

CEE's Associate Professor Wong Yiik Diew, Associate Chair (Academic), who co-led the study, said: "Understanding attitudes in relation to panic buying during a pandemic is important to ensuring food security, especially in Singapore. Being a small city-state with limited resources, food security is a challenge on several fronts, as over 90% of food in Singapore is imported. Knowing the reasons behind panic buying would allow policymakers and the public to address the problem. Global supply chains can be fragile, and a disruption caused by panic buying could have a domino effect, impacting the lives of many people."

The research team surveyed more than 500 resident Singaporeans, and the data was collected at the height of the panic buying phenomenon, in mid-2020. The median age of the participants is also consistent with the median age of Singapore's population of 42.4 years.

Impact of income on panic buying

Another key finding from the study was the significant impact of income on panic buying behaviour. The team found that respondents who had higher incomes tended to engage in more of such behaviour.

They explained that a higher household income usually translates to a higher disposable income and therefore, stronger purchasing power to stock up on goods. At the same time, a lower household income leads to budget restrictions and lower

purchasing power. Meanwhile, age and gender did not have a significant impact on panic buying.

Elaborating on the study's findings, **Ms Li Xue, a PhD student from NTU's School of CEE**, who is first author of the study, said: "Through our findings, we provide a basic understanding of panic buying for policymakers and businesses, as well as the implications of the behaviour during the COVID-19 pandemic. This would help improve preparedness against future health crises."

The researchers said their study showed that controlling the impact of social influence to curtail panic buying is difficult, owing to widespread access to social media and information carried by media platforms that can shape individuals' perceptions. For example, it is observed that continuous news reports on supply chain disruptions during the pandemic had an influence on consumers' expectations about product shortages.

Asst Prof Yuen added: "We hope our results give a better understanding of panic buying behaviour, as it is critical for establishing suitable policies to manage the escalation of panic buying and promoting the recovery of supply chain networks."

The study, which analyses the impact of social media and news on panic buying during a pandemic, reflects NTU's commitment to address technology's impact on humanity, which is one of four humanity's grand challenges that the University seeks to address through its **NTU 2025 strategic plan**.

To further validate their research, the NTU team plans to conduct additional studies in other countries, and investigate a wider spectrum of behaviours, including those in response to environmental, organisational, urban, financial, and societal threats.

The team is also exploring the possibility of validating their findings across different periods to determine if the impact of the factors varied during other parts of the COVID-19 pandemic.

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Note to Editors:

The research paper titled "[What influences panic buying behaviour? A model based on dual-system theory and stimulus-organism-response framework](#)", is published in *International Journal of Disaster Risk Reduction*, 24 July 2021.
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About Nanyang Technological University, Singapore

A research-intensive public university, Nanyang Technological University, Singapore (NTU Singapore) has 33,000 undergraduate and postgraduate students in the Engineering, Business, Science, Humanities, Arts, & Social Sciences, and Graduate colleges. It also has a medical school, the Lee Kong Chian School of Medicine, established jointly with Imperial College London.

NTU is also home to world-renowned autonomous institutes – the National Institute of Education, S Rajaratnam School of International Studies, Earth Observatory of Singapore, and Singapore Centre for Environmental Life Sciences Engineering – and various leading research centres such as the Nanyang Environment & Water Research Institute (NEWRI) and Energy Research Institute @ NTU (ERI@N).

Ranked amongst the world's top universities by QS, NTU has also been named the world's top young university for the last seven years. The University's main campus is frequently listed among the Top 15 most beautiful university campuses in the world and it has 57 Green Mark-certified (equivalent to LEED-certified) building projects, of which 95% are certified Green Mark Platinum. Apart from its main campus, NTU also has a campus in Singapore's healthcare district.

Under the NTU Smart Campus vision, the University harnesses the power of digital technology and tech-enabled solutions to support better learning and living experiences, the discovery of new knowledge, and the sustainability of resources.

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