

What's IN-cubating?

October - December 2023



Prof Edson C. Tandoc Jr.
Director, IN-cube

The last quarter was a busy one for IN-cube: We participated in the Digital Life Festival, worked on several research papers, and collected data for the 7th edition of our State of the Internet and Media in Singapore (STIMS) survey. Then, we realised, that IN-cube is turning three years old this new year!

I can still remember when we were putting together our research centre. We had to reflect on what we can contribute to internet research in Singapore. Then, we had to launch it during the peak of the COVID-19 pandemic. Since then, we have organised several online and in-person seminars and workshops, published journal articles and news commentaries, tracked internet use in Singapore, and launched eight research labs that focus on various aspects of internet studies.

This new year, we are embarking on new initiatives: We will formally celebrate our anniversary next month with a research seminar on online harms, an important issue that we are tracking in Singapore. We will be launching two new research labs. We will also be organising a symposium on AI and Fake News in April 2024.

In the meantime, we will recap in this newsletter what we have done in the last quarter as well as share our recent survey findings on online harms in Singapore from the Wave 7 of our STIMS survey.

Singaporeans see surge in online harms: IN-cube survey

Many Singaporeans are encountering more cases of online harms, including fake news and scams, a recent survey conducted by IN-cube showed.

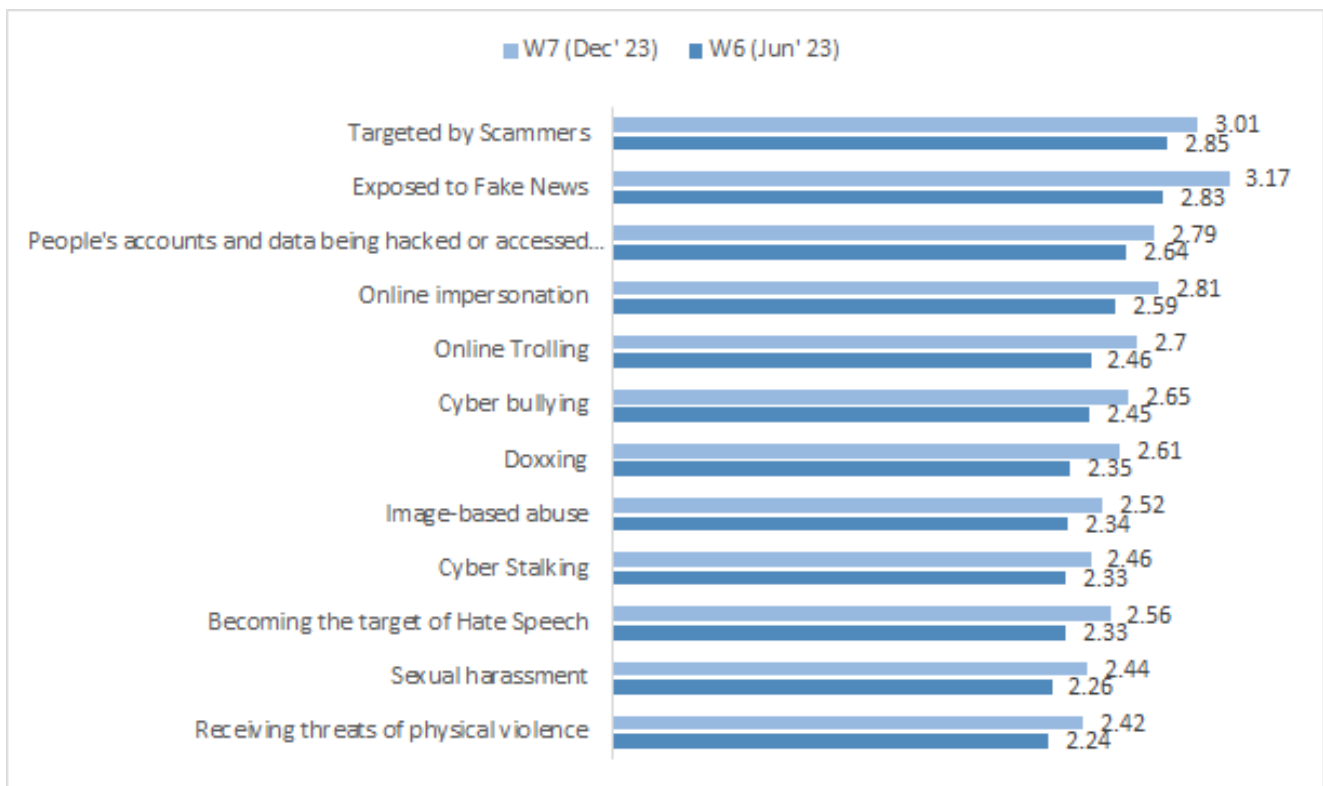
Some 1,000 residents in Singapore participated in the survey in December 2023, which is part of IN-cube's State of the Internet and Media in Singapore (STIMS) survey conducted every six months.

Compared to survey results in June 2023, the recent survey saw an increase in how frequently participants said they witness various types of online harms.

For example, while 29.6% said in June 2023 that they saw others targeted by scammers often or very often, this increased to 35.4% in December 2023.

Similarly, while 28.5% said in June 2023 that they saw others being exposed to fake news, this increased to 38.9% in December 2023.

**How often do you witness other people experiencing each of the following online?
(1 = Never to 5 = Very often)**

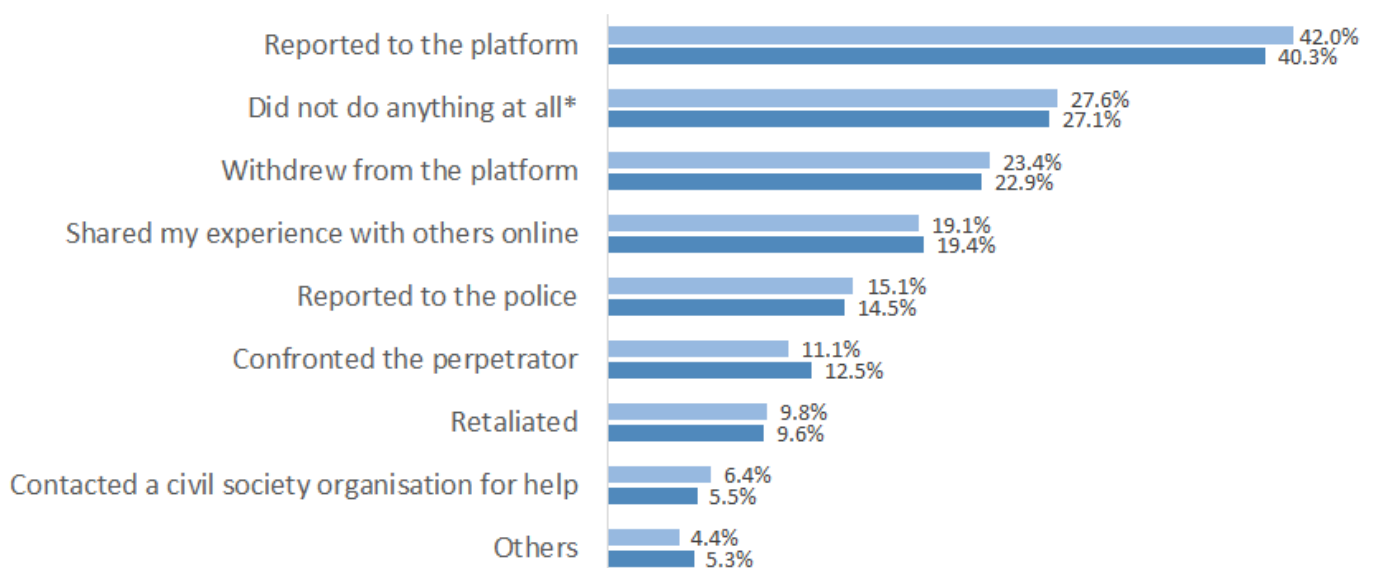


The IN-cube survey also tracked other types of online harms, such as hate speech, doxing, and sexual harassment, as part of the centre's efforts at analysing and promoting information integrity in Singapore.

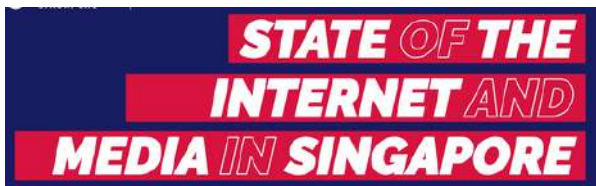
However, the December 2023 survey did not see any increase in the frequency with which participants themselves experience online harms directly.

Some 42% said they report to the platform the online harms they encounter, but nearly 30% also said they do not do anything when they encounter online harms.

How did you respond to the online harm/s that you encountered? Select all options that apply.



IN-cube's STIMS survey



- Wave 1: December 2020 ($n = 1,606$)
- Wave 2: July 2021 ($n = 800$)
- Wave 3: December 2021 ($n = 1,016$)
- Wave 4: June 2022 ($n = 992$)
- Wave 5: December 2022 ($n = 1,016$)
- Wave 6: June 2023 ($n = 1,002$)
- Wave 7: December 2023 ($n = 1,039$)**

IN-cube has been conducting biannual national surveys since December 2020. Since our official launch in 26 January 2020, we have been tracking Singaporeans' internet and news media consumption patterns.

To date, we have amassed more than 7,000 responses from our seven survey waves. These responses inform many of our research projects.

Online harms is one of core survey themes, which also include internet use, news consumption, digital well-being, videoconferencing fatigue, fake news, and generative AI.

Journal Publications

JOURNAL OF BROADCASTING & ELECTRONIC MEDIA
<https://doi.org/10.1080/08838151.2023.2296471>



Check for updates

Unpacking the Effects of Livestream Viewing in the Relationship Between Loneliness and Well-Being: An Evolutionary Theory of Loneliness Perspective

Zhang Hao Goh and Edson C. Tandoc Jr.

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ABSTRACT

Livestream content has been gaining popularity in recent years. Although it has been known that livestream viewing can mitigate the adverse effects of loneliness on individuals' well-being, the specific cognitive-affective processes involved are not given due attention. Situated in the Evolutionary Theory of Loneliness, the current study draws upon a national survey data ($n = 911$) to demonstrate that one's hypervigilance and their negative emotional state serially mediate the relationship between their feelings of loneliness and their perceived well-being. The frequency of livestream views was also found to be moderating the serial mediation paths and the direct effect between feelings of loneliness on perceived well-being.

Humans are social beings. Our survival depends on our innate ability to stay together, such as living in families or in groups, cooperating in teams, or establishing and maintaining social connections (Young, 2008). A deprivation of these social encounters, resulting in feelings of loneliness, is often associated with the risks of mortality (e.g., Patterson & Veenstra, 2010) as well as other adverse psychosocial consequences (Hawkey & Cacioppo, 2010). Today's hyper-connected world has observed the proliferation of livestreaming platforms (e.g., Instagram Live, Twitch, or Snapchat) designed to facilitate and enhance social connectivity across time and space, and thus making us feel less lonely. While some studies have found that livestream viewing is associated with poor well-being (e.g., Zhang & Li, 2022), extant literature has also acknowledged how the viewing of livestream

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Livestream viewing mitigates adverse effects of loneliness on well-being

Loneliness can negatively affect our well-being. But how does this happen? In this study, Dr. Goh Zhang Hao and Prof. Edson Tandoc explicate the underlying mechanism that accounts for the negative relationship between loneliness and perceived well-being.

Through an online survey involving 911 participants, they found that the impact of loneliness on well-being is mediated by both hypervigilance and negative emotions. Specifically, individuals' feeling of loneliness may result in heightened state of alertness, which may enhance their negative emotional state, which eventually hurts their perceived well-being.

So what can we do to mitigate this? The study finds that the frequency of livestream viewing can mitigate the adverse effect of negative emotions on viewers' emotional well-being.

Gender, internet use, and well-being

Gender differences in perceived well-being: Exploring the mediating effects of agentic and communal internet use from a social role perspective

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ABSTRACT

The online gender differences in the perceived well-being of internet users are commonly associated with offline stereotypical views and their social role expectations. However, existing studies have rarely examined the chronic differences between gender groups in terms of the way they use the internet. Drawing upon the social role theory, the current study attempted to explain the differences in their perceived well-being through agentic and communal internet use. Through a national online survey ($n = 1,013$), the current study found that agentic (but not communal) internet use mediates the relationship between gender differences and perceived well-being. The results help build a baseline for future studies investigating the gender differences in online perceived well-being. Male and female internet users' respective engagement in agentic vs. communal internet use may stimulate their perceived well-being to a certain extent.

KEYWORDS

Gender; well-being; agentic versus communal; social role; internet consumption

In this study, Dr Goh Zhang Hao and Xue Zhang, a visiting PhD student at IN-cube, explore how agentic and communal internet use can potentially mediate the relationship between gender differences and their perceived well-being.

This research is grounded in the framework of social role theory (SRT), which posits that human beliefs about their gender roles are shaped by the observable division of labor within societies. It argues that men tend to be oriented toward goal-oriented and agentic activities, while women are more oriented toward social and communal activities.

Consistent with SRT, the study finds that male participants have a significantly higher frequency of agentic internet use than female participants, while females have a marginally higher frequency of communal internet use than males. The study also found that males have relatively higher perceived social and psychological well-being than female internet users when they engage in agentic internet use.

The chronic differences in the perceived well-being of men and women can impact findings in most human subjects research (e.g., Craven & Fekete, 2022; Lyra et al., 2021). Therefore, researchers have given considerable attention to investigating and explaining the gender differences in perceived well-being. From the macro-level factors, such as structural inequalities (e.g., Tesch-Römer et al., 2008) to micro-level ones, such as biological differences (e.g., Carmel, 2019) between both gender groups, researchers have indeed found several reasons as to why men versus women, sometimes, have different levels of perceived well-being than the other. The prevalence of internet-enabled technologies in today's societies has prompted several researchers to shift the above research focus to the online context.

The psychosocial concept of gender role expectations has been extensively applied to discuss the gender differences in online perceived well-being (e.g., Semenza, 2021; Wang et al., 2023). According to the social role theory (SRT; Eagly, 1987; Eagly & Wood, 2016), societies have gender stereotypical views of both men and women. As such, they are prescribed specific behaviors or activities, broadly classified as either "agentic" or "communal" (Bakan, 1966), that they should enact or participate in for the smooth functioning of societies. While the theoretical underpinning of the SRT has provided valuable insights into how these stereotypical views on how gender groups use the internet can affect perceived

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Cultural tightness-looseness and normative social influence in eight Asian countries: Associations of individual and collective norms with vaccination intentions

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ABSTRACT

Keywords: Normative theory of innovative social behavior; Perceived norms; Collective norms; Cultural tightness-looseness; Vaccination intentions

ABSTRACT

Rationale: Countries worldwide faced the same public health crisis that required promoting the same health behavior—vaccination—during the COVID-19 pandemic. This situation offers a unique opportunity to test behavioral change theories across countries with different cultural backgrounds.

Objective: Exploring the extended theory of innovative social behavior, this study examines the influence of individual and collective norms on COVID-19 vaccination intention across eight Asian countries. We examine how cultural tightness-looseness, defined as the degree of a culture's emphasis on norms and tolerance of deviant behavior, shapes normative social influence on COVID-19 vaccination intention.

Methods: We conducted a multinational online survey ($N = 2876$) of unvaccinated individuals in China, Indonesia, Japan, Malaysia, Singapore, South Korea, Thailand, and Vietnam in May and June 2022, when COVID-19 vaccination mandates had not yet been implemented in these countries. We conducted hierarchical regression analyses with interaction terms for the total sample and then re-estimated the eight countries as either "tight" ($n = 1102$) or "loose" ($n = 1774$) to examine three-way interactions between individual norms, collective norms, and cultural tightness-looseness.

Results: Perceived injunctive norms exerted the strongest impact of all normative forms on vaccination intention. Collective injunctive norms' influence depended on both perceived injunctive and descriptive norms, which was larger when norms were lower (vs. higher). The interactive pattern between perceived and collective norms was more pronounced in countries with greater cultural tightness.

Conclusion: Our findings reveal nuanced patterns of how individual and collective social norms influence health behavioral decisions, depending on the degree of cultural tightness-looseness.

change theories across countries with different cultural backgrounds.

The theory of normative social behavior explains how factors of normative influence, namely descriptive and injunctive norms, shape individuals' behavioral intentions (Fishbein and Ajzen, 2003). Although the initial theory encompassed only individual-level perceived norms, the recent extension also incorporates collective norms (Tandoc and Vitell, 2022). As such, the theory of normative social behavior is a fruitful theoretical framework applied across various health contexts to promote healthy behavior and reduce risky behavior (Grooten et al., 2020; Guadagno et al., 2017). Nevertheless, reviews have posited that a vast majority of research applying the theory of normative social behavior has been conducted in Western countries, whereas few studies have been

1. Introduction

Leveraging normative influences has been a widely employed strategy for promoting healthy behavior. In parallel, scholars have elucidated distinct forms of normative influence, identified how individuals respond to them, and articulated principles to craft effective normative health-promoting messages (Caputo and Romo, 2005; Romo and Lapidus, 2011). Such a social norms approach may also be valuable in combating public health crises, including promoting vaccination to end the COVID-19 pandemic. As countries worldwide face the same public health crisis and aim to promote the same healthy behavior—vaccination—scholars have an ideal opportunity to test behavioral

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Culture, norms, and vaccination intent

This study explores cultural tightness-looseness as a potential moderator of the interaction between perceived and collective norms. Using IN-cube's survey data collected across 10 major cities in Asia, the study finds that perceived injunctive norms predict COVID-19 vaccination intention more than all other normative factors.

The cultural dimension of cultural tightness-looseness refers to the extent to which a culture emphasizes norms and tolerates deviant behavior. Countries with tight cultures are characterized by "strong norms and a low tolerance of deviant behavior." In contrast, countries with loose cultures are characterized by "weak norms and a high tolerance of deviant behavior."

The relationship between collective injunctive norms and vaccination intention was found to be dependent on perceived norms. Interestingly, this interactive pattern is stronger in culturally tighter countries in Asia, such as Indonesia and Vietnam.

The Digital for Life Festival

Together with KidsPlaySafer (<https://kidsplaysafer.sg/>), we showcased our very own computer game, fakenewsdetective.com, at IMDA's Digital for Life Festival 2023. The game is designed to enhance public awareness about fake news.

Members of the public got to try our computer game, including primary school children, young adults, and the elderly. IN-cube faculty and student members participated in the roadshow over three weekends in October and November 2023 to help spread awareness about how we can address the lingering problem of online falsehoods as well as gather feedback to improve the design of our computer game.



Fake news during disasters



Prof Edson Tandoc shared his insights on why the public can be vulnerable to online falsehoods in the aftermath of disasters.

Interviewed by Vera Files, a digital news company in the Philippines engaged in various fact-checking initiatives, Prof Tandoc shared how disasters are usually characterised by high levels of uncertainty, high demand for information, but also low supply of verified information.

Watch the video [here](#).

Public Engagement



Prof Edson Tandoc moderated a debate organised by the **Institute of Public Relations of Singapore** in partnership with IHH Healthcare, where participants discussed the topic: "**Generative AI: Boon or Bane?**" The debate stimulated discussions and reflections about the use of artificial intelligence in the field of public relations, as well as its impact on work routines and public response.

IN the news

Deepfakes and Artificial Intelligence

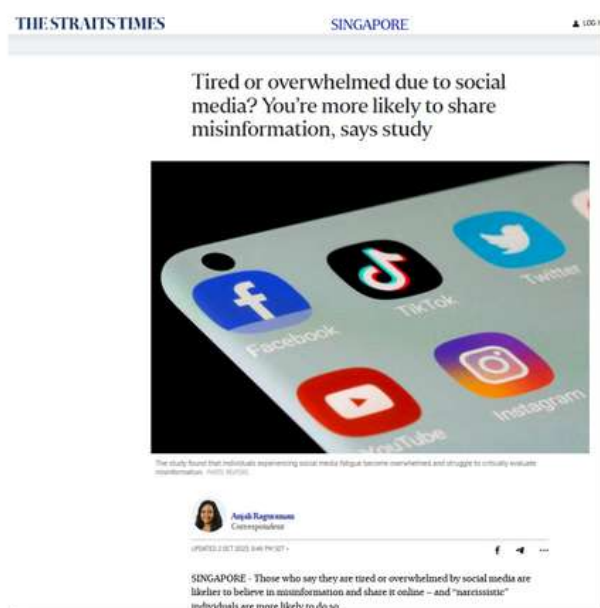
The advancement of artificial intelligence (AI) technologies has given rise to the problem of deepfake videos created to mislead people with certain false information. This includes a deepfake video altered from an interview by Chinese news network, CGTN, with Singapore's Prime Minister (PM Lee). In this video, PM Lee was portrayed as discussing about an investment opportunity that was approved by the government. Asst. Prof Saifuddin Ahmed, Principal Investigator for Social Media and Political Engagement lab in IN-cube gave his views on this deepfake video of Singapore's Prime Minister. Specifically, he shared that: "Deepfake creators can now target not only high-profile individuals like celebrities and politicians but also ordinary citizens, particularly in the context of financial scams."

You can read about this article [here](#).

Social Media Fatigue and Misinformation

Through a survey in eight countries, Asst. Prof Saifuddin Ahmed found that users who experience social media fatigue are more susceptible to falling for fake news. In addition, those with low cognitive ability and high narcissism are more likely to share fake news. He said that: "Narcissists prefer immediate rewards and satisfaction rather than delayed gratification. Thus, it is likely that when accompanied by high fatigue and limited cognitive ability, narcissists do not make sound judgments about misinformation and share them due to their impulsive nature."

You can read about this article [here](#).



About IN-cube

IN-cube stands for Centre for Information Integrity and the Internet, a research centre at the Wee Kim Wee School of Communication and Information at Nanyang Technological University Singapore. It aims to contribute to promoting information integrity in online spaces, especially in an era of misinformation and disinformation, through timely, rigorous, and relevant research that links academics, policymakers, industry players, and the public. Learn more about IN-cube by visiting our website: ntu.edu.sg/incube