変わる時代の確かな視点

News Release

Impact of Face Masks on Smile Recognition and Emotional Contagion in Adults and Children

— Evidence from a Large-Scale Online Experiment in Japan —

December 1, 2025

NLI Research Institute conducted a large-scale online experiment involving 937 adults and 807 school-age children (elementary and junior high school students) to examine how face masks influence smile recognition and emotional contagion. The results showed that mask-wearing reduces smile recognition and that this effect is particularly pronounced among adults—especially adult men. In contrast, the effect of masks in hindering emotional contagion was found to be more prominent among children.

The findings of this study were published in the *Journal of Behavioral Economics and Finance* on December 1, 2025.

■ Background of the Study

In general, nonverbal cues such as facial expressions and vocal tone play an important role in communication. People also tend to unconsciously synchronize with others' emotional expressions, a phenomenon known as "emotional contagion." Following the widespread use of face masks during the COVID-19 pandemic, concerns were raised about their potential effects on communication and children's socio-emotional development. However, empirical evidence on how masks affect children has been limited, and the impact on emotional contagion in particular has been largely unexplored. To address this gap, the present study systematically examined how face masks influence both smile recognition and emotional contagion among adults and children (elementary and junior high school students).

■ Method

In this study, 937 adults and 807 elementary and junior high school students residing in Japan participated in an online experiment. Each participant was randomly shown one of 16 facial images (Figure 1), consisting of four expressers—an adult man, an adult woman, a boy, and a girl—displaying either a smiling or neutral expression, with or without a mask. Participants' smile recognition and changes in emotional states before and after viewing the image were then measured. The random assignment of stimuli allowed us to isolate the causal effects of mask-wearing on smile recognition and emotional responses. The experiment was conducted in October 2022.

株式会社 ニッセイ基礎研究所　102-0073 東京都千代田区九段北4-1-7｜Tel.03-3512-1800［代表］｜Fax.03-5211-1058｜www.nli-research.co.jp

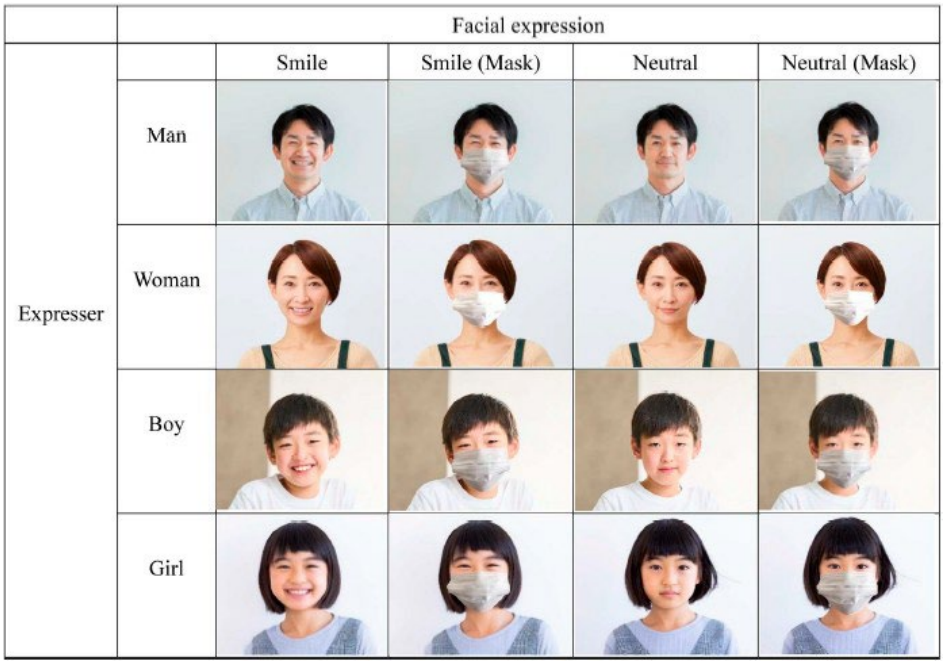

Figure 1. Photos used for the intervention
(Note: Photos by PIXTA. Face masks were digitally incorporated by authors)
Source: *Journal of Behavioral Economics and Finance*, Vol. 18 (2025), pp. 114–130

■ Key Findings

1. Masks impair smile recognition, especially among adults — and most notably adult men

Mask-wearing was found to impair smile recognition (Figure 2, Average). Furthermore,we found that adults were more sensitive than children to detecting subtle smiles from images prepared as neutral faces when the faces were unmasked. Consequently, when masks obscured part of the facial information, adults showed a notably larger decline in recognizing smiles in neutral faces (Figure 2, Comparison of adult and child perceivers, Average・Smile=0). Further analysis by gender revealed that this effect was particularly pronounced among adult male participants.

2. Masks can sometimes *increase* perceived smile recognition

Although masks generally reduced smile recognition for both adult and child perceivers, there were specific cases in which a neutral face was perceived as smiling. This effect was observed, for example, when both adults and children viewed the neutral expression of the girl expresser (Figure 2).

株式会社 ニッセイ基礎研究所　102-0073 東京都千代田区九段北4-1-7｜Tel.03-3512-1800［代表］｜Fax.03-5211-1058｜www.nli-research.co.jp

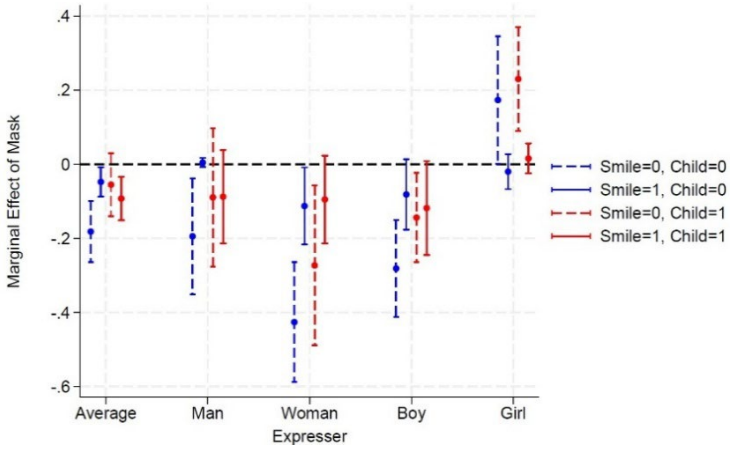

Figure 2. Impact of face masks on smile recognition

(Note: 95% confidence intervals are presented. Smile = 1 indicates that the expresser's facial expression is smiling, and Smile = 0 indicates a neutral expression. Child = 0 indicates an adult perceiver, and Child = 1 indicates a child perceiver. Here, the marginal effect of the mask indicates how much wearing a mask decreases (or increases) the probability that a face is perceived as smiling.)
Source: *Journal of Behavioral Economics and Finance*, Vol. 18 (2025), pp. 114–130

3. The dampening effect of masks on emotional contagion is particularly pronounced among children

Masks significantly reduced the boost in positive emotion that typically occurs when children observed certain smiling faces—for example, when viewing the girl expresser's smile (Figure 3). Moreover, even after accounting for the genders of both the perceiver and the expresser, the emotional impact of masks was observed only in child perceivers, suggesting that children are more susceptible to disruptions in emotional contagion caused by mask-wearing.

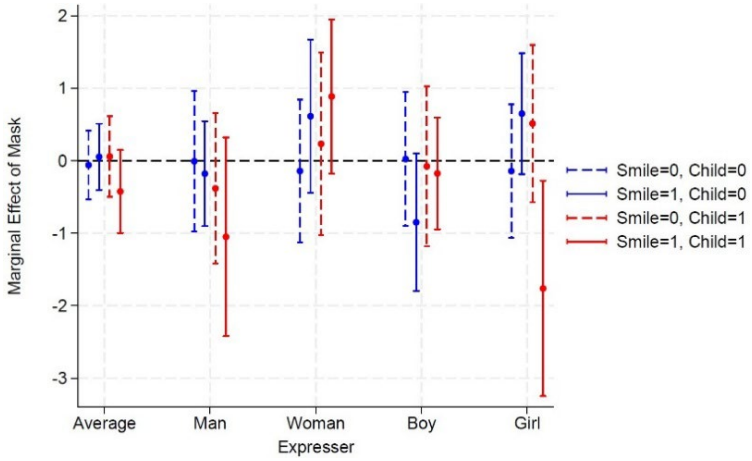

Figure 3. Impact of face masks on positive emotion

(Note: 95% confidence intervals are presented. Smile = 1 indicates that the expresser's facial expression is smiling, and Smile = 0 indicates a neutral expression. Child = 0 indicates an adult perceiver, and Child = 1 indicates a child perceiver. Here, the marginal effect of the mask reflects how much wearing a mask decreases (or increases) the observer's positive emotion.)
Source: *Journal of Behavioral Economics and Finance*, Vol. 18 (2025), pp. 114–130

■ Implications

Previous research has already shown that mask-wearing can hinder facial expression recognition. This study further suggests that face masks can affect adult and child perceivers in different ways. For adult perceivers, masks can hinder the detection of subtle smiles, implying that in workplaces and daily communication—particularly for men—verbal clarification and positive nonverbal cues may be especially important when masks are worn. In contrast, child perceivers appear more susceptible to mask-related disruptions in emotional contagion, indicating the need for environments that better support the development of socio-emotional and non-cognitive skills—such as empathy—when children interact while wearing masks.

■ Limitations

Because this study used facial photographs from only four individuals, it is possible that the specific facial features or expression characteristics of the photographed persons may have influenced the results. Furthermore, this study uses static images in an online experimental setting; therefore, it does not fully replicate face-to-face interactions or the dynamics of real-world emotional communication. In addition, because the analysis is based on responses voluntarily provided by online participants, the generalizability of the findings should be interpreted with caution. The results should not be taken as definitive on their own.

■ Research Team：Keiko Iwasaki and Yoko Muramatsu

■ Research Finding

This study was supported by KAMPO FOUNDATION (Public Interest Incorporated Foundation) in 2022.

■ Published Paper

Title: Impact of face masks on smile recognition and emotional contagion in adults and children
Authors: Keiko Iwasaki and Yoko Muramatsu
Journal: *Journal of Behavioral Economics and Finance*
Volume and Pages: Vol. 18, pp. 114–130
DOI: https://doi.org/10.11167/jbef.18.114
Publication Date: December 1, 2025

＜For Further Information＞

NLI Research Institute
4-1-7 Kudankita, Chiyoda-ku, Tokyo 102-0073 Japan.
www.nli-research.co.jp

Keiko Iwasaki, Insurance Research Department, Researcher
Tel.03-3512-1882｜kiwasaki@nli-research.co.jp