



# Why They Ignore English Emails: The Challenges of Non-Native Speakers in Identifying Phishing Emails

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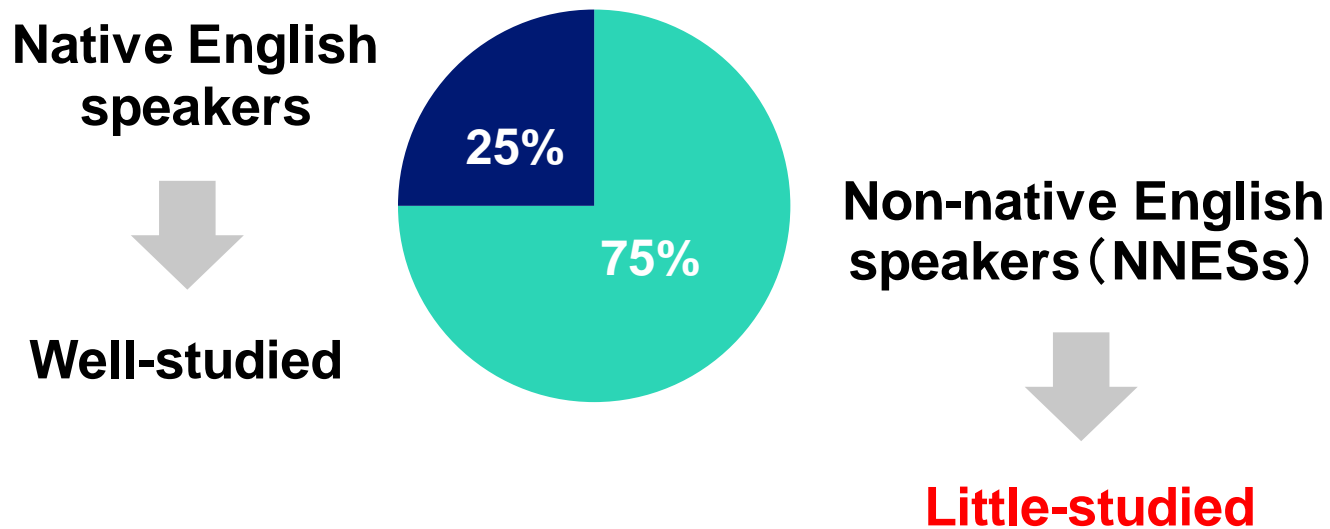
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# Motivation

## Users' phishing susceptibility



# Research Questions

## RQ1:

Do NNEs show different **behavioral tendencies** toward emails in their native language and English?

## RQ2:

What are the NNEs' **concerns** about identifying English phishing emails?

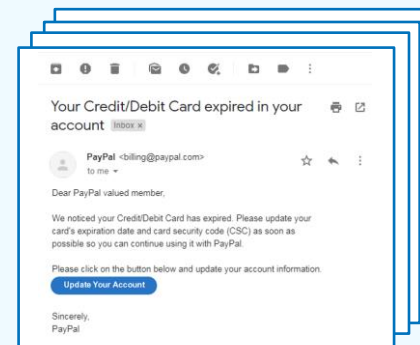
# Online Survey

- RQ1: NNEs' behavioral tendencies

## Role-play task (between-participants design)



In their native lang.



In English

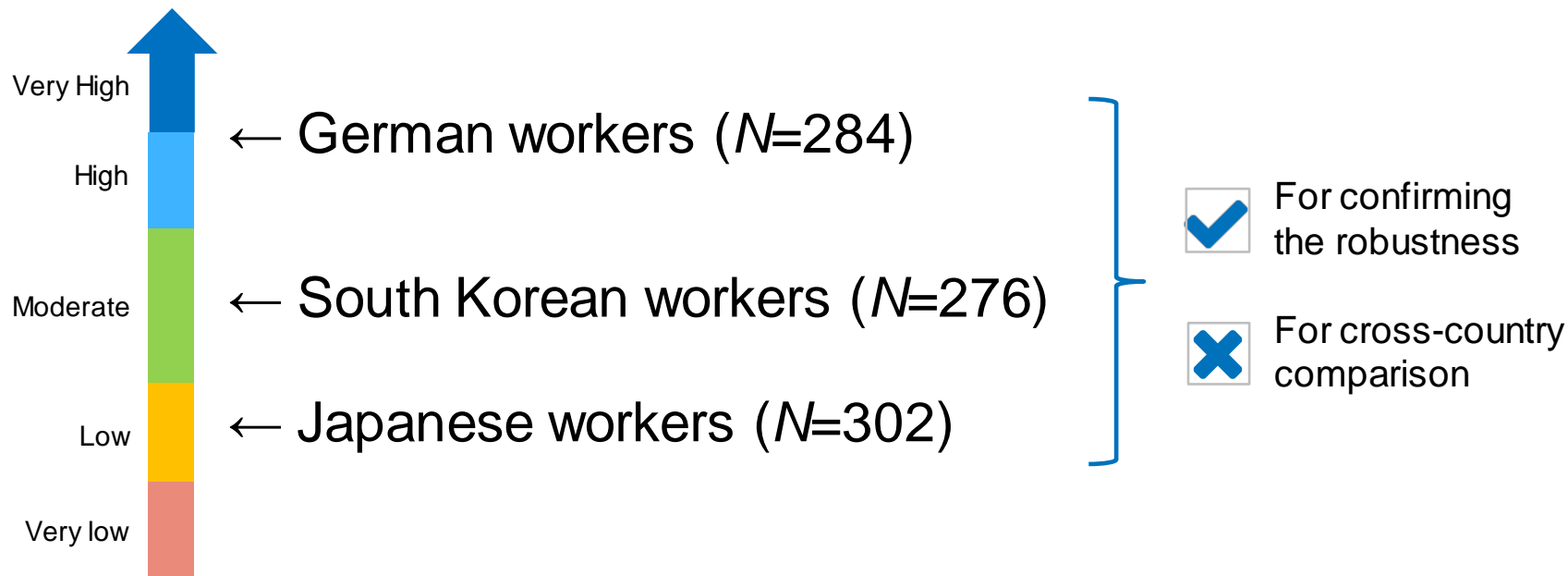
- RQ2: NNEs' concerns



Open-ended question

# Participants

English proficiency



# Findings (RQ1: NNEs's behavioral tendencies)

**NNEs are less likely to be phished but more likely to miss opportunities in English**

- Phishing

The diagram illustrates the behavioral tendencies of NNEs in phishing scenarios. On the left, under the heading "In their native lang.", four human icons are shown next to a screenshot of a Japanese phishing email from PayPal. The email text includes: "お客様のアカウントに登録されているクレジットカードの有効期限が切れました。", "PayPal (info@paypal.com)", "PayPalが安全な企業へ。", "お客様のPayPalアカウントに登録されているクレジットカードの有効期限が切れました。PayPalが安全な企業へ。", "以下のボタンをクリックして、お客様のアカウント情報を更新してください。", and a blue button labeled "アカウントを更新する". A large blue arrow points from this side towards the center. In the center, the text reads "Less likely to follow the instruction". On the right, under the heading "In English", four human icons are shown next to a screenshot of an English phishing email from PayPal. The text includes: "Your Credit/Debit Card has expired in your account", "PayPal (info@paypal.com)", "Dear PayPal valued member.", "We noticed your Credit/Debit Card has expired. Please update your card's expiration date and card security code (CVV) as soon as possible so you can continue using your PayPal.", "Please click on the button below and update your account information.", and a blue button labeled "Update Your Account". A large blue arrow points from this side towards the center.

- Genuine

The diagram illustrates the behavioral tendencies of NNEs in genuine scenarios. On the left, under the heading "In their native lang.", four human icons are shown next to a screenshot of a Japanese Zoom meeting invitation from "Masako Tanaka". The text includes: "定例会議", "Masako Tanaka (masako.tanaka@company.com)", "Zoom Meeting", "時間: 2025年7月30日 11:00 AM", "Zoom Meeting ID: 999 999 9999", "Zoom Meeting URL: https://zoom.us/j/9999999999", "Zoom Meeting ID: 999 999 9999", "Zoom Meeting URL: https://zoom.us/j/9999999999", "Zoom Meeting ID: 999 999 9999", "Zoom Meeting URL: https://zoom.us/j/9999999999", and a blue button labeled "Zoom Meeting". A large blue arrow points from this side towards the center. In the center, the text reads "More likely to ignore the instruction". On the right, under the heading "In English", four human icons are shown next to a screenshot of an English Zoom meeting invitation from "Masako Tanaka". The text includes: "Weekly meeting", "Masako Tanaka (masako.tanaka@company.com)", "Topic: weekly meeting", "Time: Jul 30, 2025 11:00 AM", "Zoom Meeting", "Zoom Meeting ID: 999 999 9999", "Zoom Meeting URL: https://zoom.us/j/9999999999", "Zoom Meeting ID: 999 999 9999", "Zoom Meeting URL: https://zoom.us/j/9999999999", and a blue button labeled "Zoom Meeting".

# Findings (RQ1: NNEs' behavioral tendencies)

- **When do NNEs follow/ignore the instruction in English emails?**
  - Follow: emails from coworkers
  - Ignore: emails from services
  
- **Who follows/ignores the instruction in English emails?**
  - Follow: younger participants with more confidence in reading English
  - Ignore: older participants with less confidence in reading English

# Findings (RQ2: NNEs' concerns)

## 1. Difficulty understanding English email content



*I'm not good at English. Even when I did roughly understand the email, I couldn't grasp its details in English.*

## 2. Difficulty identifying errors and unnatural language in English



*For Japanese emails, I can obviously identify incongruities caused by **grammar, nuances, and honorific expressions**. However, I cannot grasp any language nuances in English.*



## Findings (RQ2: NNEs' concerns)

### 3. Unfamiliarity with English phishing emails



*... All kinds of media deal with Korean phishing emails, so there are more chances to figure out if it's phishing compared to those in English...*

### 4. Decreased attention in English contexts



*... I can't understand the contents of English emails. Thus, I **practically panic** and worry that I won't make the right decision when I receive it.*

## Findings (RQ2: NNEs' concerns)

### 5. Difficulty finding similar cases in English on the Internet



*Even if I can search websites related to the phishing email, **it is difficult to determine which information is correct** in English contexts.*

# Findings & Design Implications

## Findings

NNESs (in English context)

- Have difficulty finding similar cases
- Are unfamiliar with phishing emails
- Have difficulty understanding content
- Ignore genuine emails (opportunity loss)

## Design Implications

- **Language-agnostic phishing database**
- **Anti-phishing training for NNESs**
- **Machine translation**
- **Auto follow-up mechanism**

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THANK YOU!