

# Pandemic Programming

## HOW COVID-19 AFFECTS SOFTWARE DEVELOPERS AND HOW THEIR ORGANIZATIONS CAN HELP

PAUL RALPH · SEBASTIAN BALTES · GIANISA ADISAPUTRI · RICHARD TORKAR · VLADIMIR KOVALENKO · MARCOS KALINOWSKI · NICOLE NOVIELLI · SHIN YOO · XAVIER DEVROEY · XIN TAN · MINGHUI ZHOU · BURAK TURHAN · RASHINA HODA · HIDEAKI HATA · GREGORIO ROBLES · AMIN MILANI FARD · RANA ALKADHI

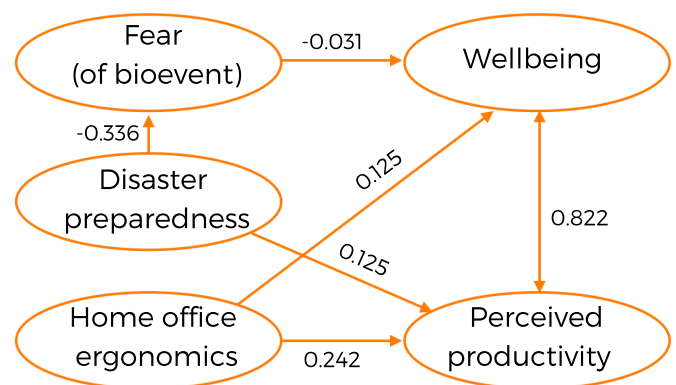
SUBMITTED ON MAY 04, 2020 ARTICLE PRE-PRINT: [CLICK HERE](#)

### BACKGROUND AND METHOD

- Little is known about working from home during major crises
- A questionnaire was designed to explore the effect of COVID-19 lockdowns on developers
- Over 2000 people from more than 50 countries completed the questionnaire
- Participants assessed their wellbeing and productivity before and while working from home
- Data was analyzed using structural equation modeling

### EFFECTS ON WELLBEING AND PRODUCTIVITY

- Developers' wellbeing and productivity are suffering
- Productivity and wellbeing are closely related
- Better home office ergonomics help wellbeing and productivity
- Women, parents, and people with disabilities may be disproportionately affected
- Different people need significantly different kinds of support



### RECOMMENDATIONS FOR SOFTWARE COMPANIES

- DO support developers' emotional wellbeing; it will help their productivity
- DO ask employees what they need (e.g., equipment, professional training)
- DO help employees improve the ergonomics of their home work spaces
- DON'T expect normal productivity during the pandemic; it's unrealistic
- DON'T pressure employees to be productive; it will make matters worse
- DON'T make any decisions (e.g., layoffs, promotions) based on productivity during the pandemic

**12**

#### LANGUAGES

Arabic, Chinese, English, French, Italian, Japanese, Korean, Persian, Portuguese, Spanish, Russian, Turkish

**53**

#### COUNTRIES

With region-specific advertising strategies

**2225**

#### DEVELOPERS

81% male  
94% employed full-time  
27% live with children  
8% have disability  
9.3 yrs mean experience

**~3**

#### WEEKS

Data collection from March 27, 2020, to April 14, 2020