

## Could artificial intelligence make human doctors obsolete? A survey based on public attitudes

Ye Li

YY Chen<sup>1,3</sup>, Y Li<sup>2,3</sup>, CJ Li<sup>1</sup>

<sup>1</sup>School of Management and Economics, Beijing Institute of Technology, Beijing, China

<sup>2</sup>Department of Quantitative & Technical Economics, University of Chinese Academy of Social Sciences, Beijing, China

<sup>3</sup>Hebei Public Policy Evaluation and Research Center, Yanshan University, Hebei, China

Contact: liye199203@126.com

### Background:

With the outbreak of pandemics such as SARS, MERS and COVID-19 etc., making full use of artificial intelligence (AI) become the focus of social discussion. Some experts think AI can reduce infection probability of medical staffs and improve medical efficiency, while opponents believe AI will increase unemployment and medical ethical crises. We try to answer the question: From public perspective, could AI replace human doctors?

### Methods:

According to occupational status and biological gender, we select four groups as respondents: on-job and retired men, on-job and retired women. We investigate their attitudes towards AI application in medical field. After collecting 400 anonymous questionnaires, we use sample statistics, ANOVA and cluster method (CFSFDP) to find out cognitive similarities and differences between different groups.

### Results:

Reliability (Cronbach's alpha coefficient) and validity (KMO test) of questionnaires are 0.740 and 0.875 respectively. To the four groups, there are significant ( $p < 0.01$ ) differences in answers of 7 questions but non-significant differences in the remaining 3 questions. By CFSFDP, questionnaires are automatically grouped into two clusters. Largest group in two clusters are on-job women and on-job men, respectively. Although 82.5% of respondents pay attention to news about AI, the overall average score for "public attitude to AI application in medical field" is 2.828 (full-score is 5.000), below neutral-score (3.000).

### Conclusions:

To AI application in medical field, cognitive differences among different groups are in existence, especially between on-job men and women. But in general, the public held a negative attitude towards the AI application in medical field, and trust human doctors more.

### Key messages:

- According to the survey, it seems that AI is lesser probability to replace human doctors in recent years.
- It is also necessary to consider the public attitudes when promoting medical AI.