

Additional File 1

Supplement to: Physicians' Preferences and Willingness to Pay for Artificial Intelligence-based Assistance Tools: A Discrete Choice Experiment Among German Radiologists

Supplementary Table 1. Long-list of attributes and attribute levels and exclusion process to arrive at short list

Attributes		Attribute levels
1	Provider	– Modality manufacturer – RIS/PACS software provider – AI-software startup – <i>University hospital</i>
2	Application	– Automatic marking of lung lesions in thoracic CT and liver and kidney lesions in abdominal MRI – Reduction of scan times for 2D & 3D abdominal MRI sequences via AI-based data manipulation – Presorting of mammographic screening reports into “100% normal” (BI-RADS 1&2) and “suspicious” incl. automatic lesion marking – <i>Automatic detection and marking of carcinoma of the prostate in MRI scans incl. contouring for potential biopsy</i> – <i>Automatic morphometry in MRI brain scans incl. volumetry and lesion detection</i> – <i>Probability of COVID-19 infection (in %) based on lung CT scan</i>
3	<i>Automatic differential diagnosis proposal?</i>	– <i>Yes</i> – <i>No</i>
4	<i>Automatic report creation?</i>	– <i>Yes</i> – <i>No</i>
5	Quality	– <i>Worse</i> – Same – Better
6	Time savings	– Low – Medium – High
7	Pricing	– €3 per study – €6 per study – €9 per study

Excluded attributes/levels

2/3D indicates two/three-dimensional; AI, Artificial Intelligence; BI-RADS, Breast Imaging Reporting and Data System; CT, Computed Tomography; MRI, Magnetic Resonance Imaging; PACS, Picture Archiving and Communication System; RIS, Radiology Information System

Supplementary Table 2. Experimental design and efficiency

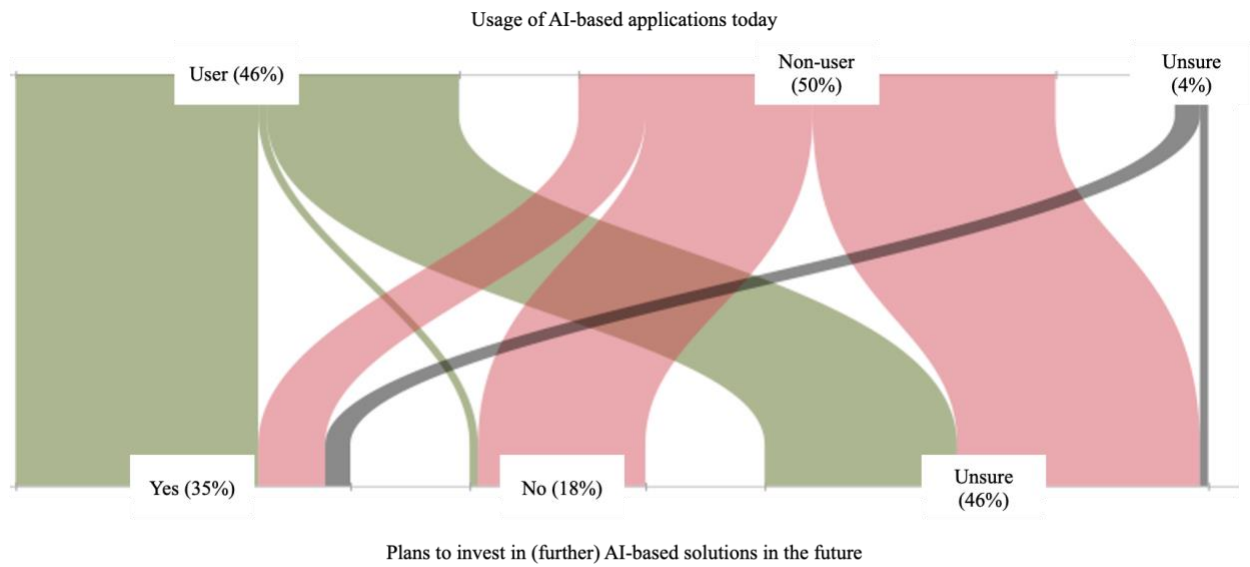
Choice set	Attributes				
	1	2	3	4	5
1	2	2	1	2	6
	3	1	2	3	3
2	1	3	1	2	3
	2	2	2	1	9
3	1	2	1	1	3
	3	1	2	2	6
4	3	3	1	1	9
	1	2	2	3	6
5	3	2	1	3	3
	1	3	2	2	9
6	2	3	2	3	9
	3	1	1	1	6
7	1	1	1	3	9
	3	2	2	2	3
8	2	3	1	3	6
	1	2	2	2	9
9	2	1	2	1	3
	3	2	1	3	9
10	1	3	2	1	6
	2	1	1	2	3
D-efficiency: 92.35%					

Supplementary Table 3. Overview of sample frame characteristics

Sample & sample frame characteristics		% sample	% sample frame
Gender	Male	78%	66%
	Female	21%	33%
Age	Mean	51	52.4
Job position	Total outpatient	74%	48%
	Total inpatient	25%	46%
	Employed in public authority	1%	1%
	Other	0%	5%
Specializations	Pediatric radiology	1%	2%
	Neuroradiology	7%	7%

Source: Ärzttestatistik zum 31. Dezember 2020, Bundesärztekammer (retrieved from: https://www.bundesaerztekammer.de/fileadmin/user_upload/downloads/pdf-Ordner/Statistik_2020/2020-Statistik.pdf)

Supplementary Figure 1. The relationship between current AI usage and plans for (further) investments in AI



AI indicates Artificial Intelligence; Note: figures rounded