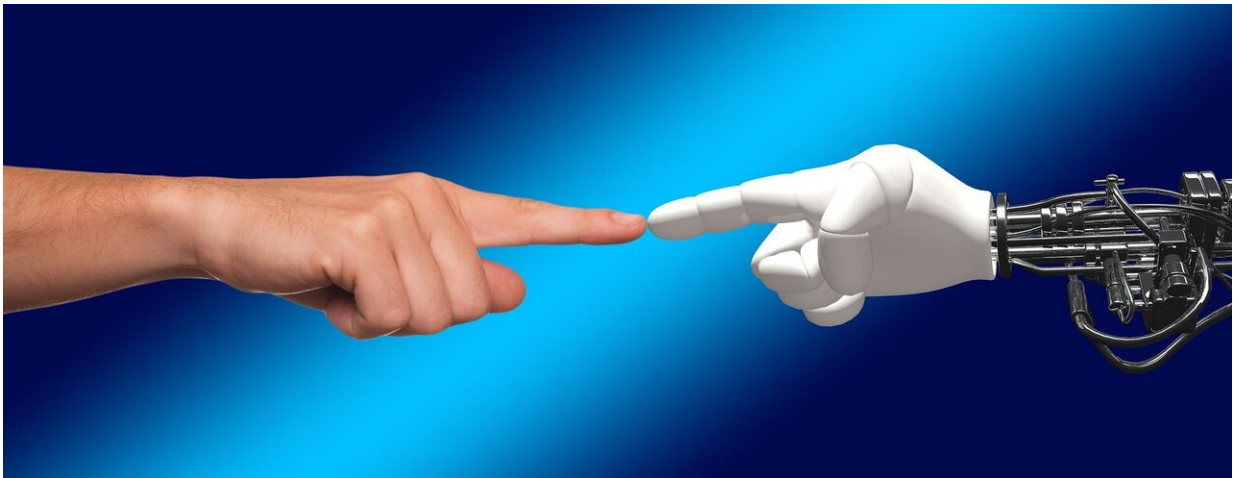


Europeans have doubts about robot-assisted surgery

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The implementation of robotics in various aspects of life is becoming increasingly widespread, but nevertheless leads to conflicting opinions. Positive factors and arguments based on innovation, efficiency, precision and cost reduction have not yet succeeded in breaking down negative connotations and aspects such as the destruction of jobs, the investment required, difficulties in implementation and the training necessary for its use. These controversies are heightened in the field of health, which is a reflection of this social trend of conflicting opinions.

A team of researchers from the Universitat Oberta de Catalunya (UOC)

analyzed people's primary motivations and their trust in these devices to find out European citizens' perceptions of the use of robotics in surgery. "We aim to provide new evidence from the social perspective, from patients and citizens, since at some point they could be asked to undergo surgery involving the use of robots," explained Professor Joan Torrent Sellens, from the UOC's Faculty of Economics and Business, lead researcher of the University's i2TIC group and the co-author of this study, together with UOC professors Ana Jiménez Zarco and Francesc Saigí Rubió.

After analyzing the opinions of around 28,000 citizens from 28 countries in the European Union, the results of this study present a broad spectrum of attitudes stemming from a lack of trust in robot-assisted surgery (RAS). Previous experience with the use of robots and the perception of user-friendliness are the only factors that foster trust in these techniques and devices. "We also found that, as people gain experience with using robots, the background of trust related to the information, attitude and perception of RAS becomes increasingly negative," said Torrent Sellens.

The analysis of the data shows that the arguments behind the motivations that create mistrust in these devices are not uniform. Experience also plays a crucial role. "Our research shows that citizens take rational issues into account in their assessments of trust, such as their [previous experience](#) with using robots and their perceived user-friendliness," he said. For example, experience has a greater effect on trust in RAS among men, people between 40 and 54 years of age, and those with a higher level of education.

Likewise, aspects such as general information about robotics and the general state of public opinion on its effects in the workplace, which are normally negative, are more emotional evaluation factors that also influence this perception of robotics in surgery.

Furthermore, many European citizens have been reluctant to use RAS since, in their opinion, it means that both the healthcare professionals and the institutions that adopt these new technologies must have new skills and training. This situation has led to some doubts in society. "The main issue is to work on the motivations behind this trust, so that the positive assessments and effects already identified by healthcare professionals are passed on to the public. The patient's opinion is vital in all the profound changes taking place as a result of the emergence of eHealth and telemedicine in healthcare practices," explained the UOC researcher.

The advantages of robotics: Fewer risks and shorter recovery times

The use of robotics in society is becoming increasingly widespread, and its implementation in the healthcare field is taking place more quickly than in other sectors. Moreover, the use of RAS has various advantages, since it uses minimally invasive techniques and is able to help surgeons with complicated surgical procedures. These include fewer risks and errors, shorter recovery times and lower financial costs.

Social research has so far emphasized the advantages of RAS for [healthcare professionals](#), such as fewer risks and errors, shorter recovery times and lower financial costs. However, the evidence available from the social perspective is limited. "Our study provides one of the first perspectives at a European level, which suggests attitudes to RAS that go beyond specific national customs, cultures or idiosyncrasies," said Torrent Sellens.

Healthcare policies to boost public trust

Faced with doubts and mistrust among European citizens, the authors point out that it is crucial to establish a robotic strategy that is aligned

with the objectives of the sector and its stakeholders. "Without a patient-aligned strategy, any robot initiative is likely to remain at the pilot stages," he said. Accordingly, knowing what the reasons are for people's trust in or mistrust of robots being used in the healthcare field makes it possible to develop more effective healthcare policies.

The results of this type of research are therefore very useful, since they enable public health policy strategies with objective criteria to be designed and implemented. In specific terms, this study presents various measures aimed at boosting trust in robotics in medicine in terms of patients' perceptions. "As in all other aspects of life, in the management of health technologies externalities—the unintended consequences of a decision on other aspects related to this decision—are important. Working on public trust in RAS is therefore entirely consistent with the idea of patients empowered through e-health."

In fact, the results suggest that failing to create a framework of security and trust for citizens could slow the implementation of future technological developments. For example, in the case of so-called 'social robots' used to care for people's health, the patient's opinion is fundamental in their implementation and proliferation.

"It's true that the opinion of professionals with regard to the usefulness of RAS is paramount in the design of strategies and policies for its implementation. However, at the same time, it's equally true that moving forward with these policies in a context of public [trust](#) or mistrust isn't the same thing," said Torrent Sellens, who recalled that the connection between robotics and many other digital technologies applied to health "has only just begun, so their combination for healthcare practice has countless applications."

The research was published in *International Journal of Environmental Research and Public Health*.

More information: Joan Torrent-Sellens et al, Do People Trust in Robot-Assisted Surgery? Evidence from Europe, *International Journal of Environmental Research and Public Health* (2021). [DOI: 10.3390/ijerph182312519](https://doi.org/10.3390/ijerph182312519)

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