

## **Analyzing the adoption, diffusion, and the technological stages of the medical imaging equipment: predicting the technological obsolescence in the Valencian Community.**

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**Abstract.** OBJECTIVE: Register, classify and assess the degree of technological obsolescence of medical imaging equipment in all health centers (publics and privates) in the Autonomous Communities of Valencia; also analyze the adoption, dissemination and identify the stages of technological equipment.

DESIGN: Observational, cross-sectional retrospective.

SUBJECT OF STUDY: The medical imaging equipment: Conventional radiography, remote control, mammography, angiography, CT, and MRI, installed in hospitals (public and private) of Valencia.

DATA SOURCES: The main source of information for obtaining the data is the web application developed by the research team to fill in with the information related to the technical variables about the medical imaging equipment provided by the medical centers.

ANALYSIS: 1. Assessment of technological sections using the scale accepted by agreement between the industry and the research group.

2. Evaluation of the technological adoption: analysis of factors influencing technology adoption. 3. Evaluation of the diffusion of technology based on certain explanatory variables.

4. Evaluation of life cycle and obsolescence of equipment with survival analysis and Kaplan-Meier estimator.

5. Design of predictive models to forecast technological jumps that imply obsolescence of the technologies in use.

RESULTS AND CONCLUSIONS: First study that estimates the obsolescence of the medical imaging equipment in Spain. The study allows the comparison of the technological diffusion and obsolesces between public and private medical centers in the Valencian Community, and also the comparison between medical centers of different size and specialization. Proposals derived from our study are focused on the development of Public Health Authorities technology renewal policies including common actions between medical centers; also, define the use