

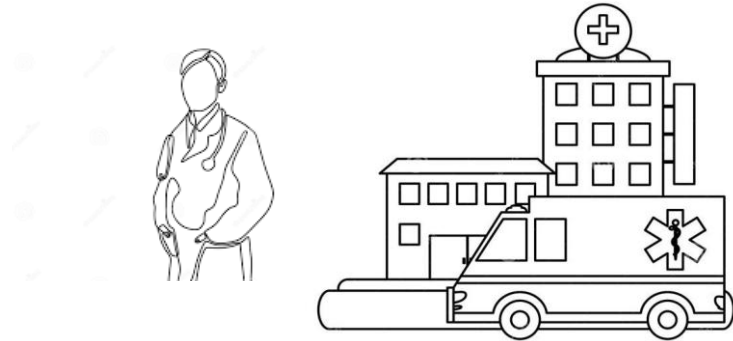


# Measuring “impact”: An Artificial Intelligence approach to evaluating performance of public healthcare organizations

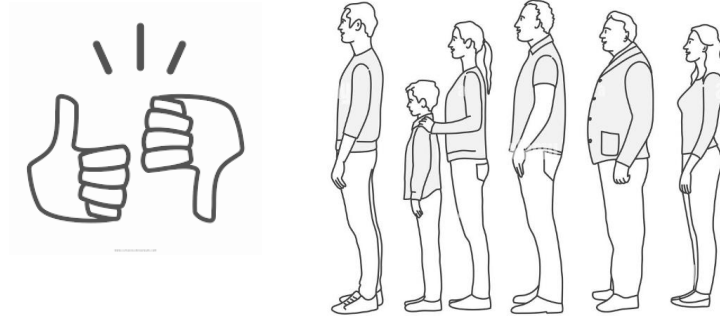
Guido Noto, Francesca De Domenico, Mariangela Barraco, Gustavo Barresi  
CREMS – University of Messina

# Public value created and recognized

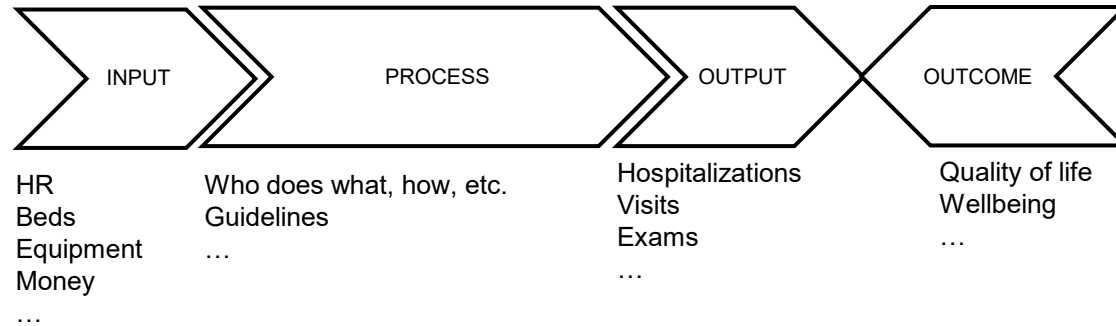
Public value generated – that is, the benefits embedded in the outcomes achieved by public organizations (e.g., reduction in mortality rates)



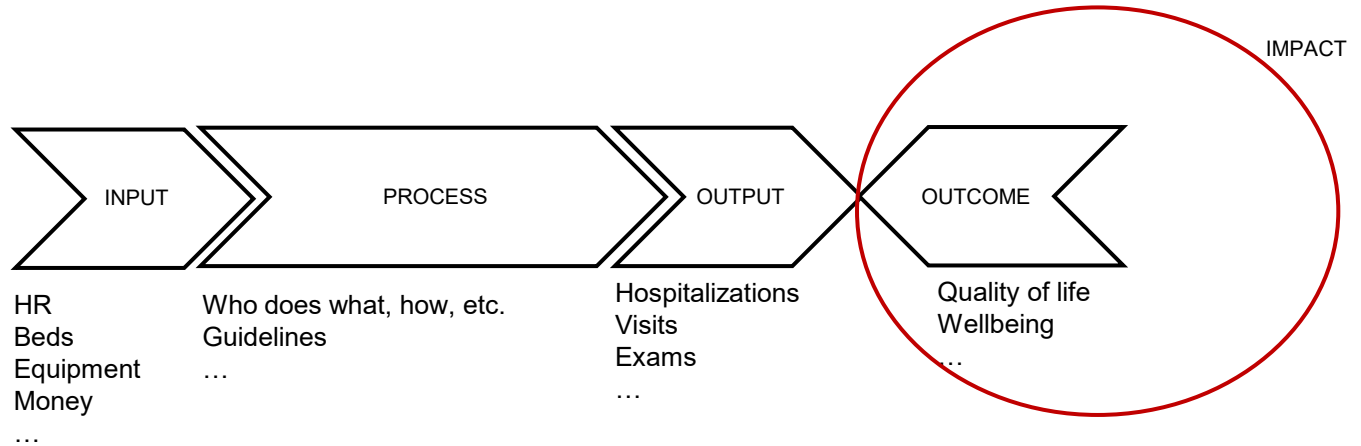
Recognized public value – that is, the positive assessment of outcomes in relation to the needs to be met, as provided by the community



# The instrumental view of performance measurement in public and healthcare services

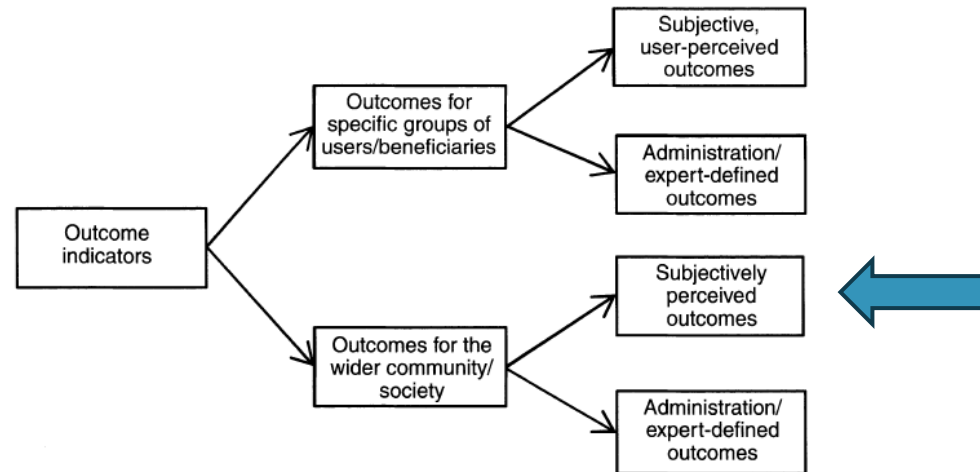


# The instrumental view of performance measurement in public and healthcare services



# The instrumental view of performance measurement in public and healthcare services

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**Figure 1. Framework for Classifying Outcome Indicators**

# Digital technologies and performance measurement in the healthcare sector

Arnaboldi et al. (2017):

- Development of new performance indicators
- Data management
- Alteration of decision-making processes

ICT	PMM phase	PMM function
EHR	Performance indicators	Production of new data
IoT		Production of new data
Telemedicine		Production of new data
AI	Measurement framework	Analysis of data
Big data		Collection and analysis of data
Platform	Management framework	Collection and analysis of data
BI		Management of data
Blockchain		Management of data
Cloud computing		Sharing and management of data
Dashboard		Use and reporting of data

Source(s): Table by authors

The impact of DTs on macro-categories

DT	Macro-category
IoT	Measuring

AI and machine learning	Knowledge development
Cloud storage & computing	Measuring
Big data & business analytics	Knowledge development
Social media	Informing
Blockchain	Measuring

Mauro et al. (2024)

Di Falco et al. (2024)

## Objective

This study aims to propose and critically reflect on the use of Artificial Intelligence (and specifically Sentiment Analysis) as a tool for measuring impact for Performance Measurement (PM) in public and healthcare organizations.

## Method

Action research (Eden & Huxam, 1996)

Delphi Analysis (Linstone & Turoff, 1975)

## Empirical setting

All public hospitals operating in Sicily (9)

Software: Brand24®

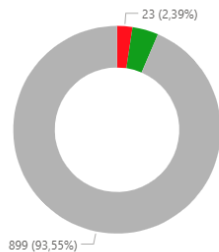
Time period: Jan – Mar 2025



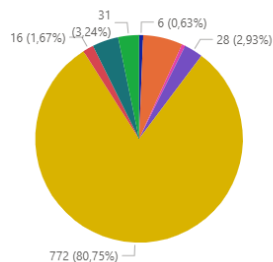


# Results 1/4

## AOU P. GIACCONE



- Negativo
- Positivo
- Neutrale



- Podcast
- TikTok
- Blogs
- Forums
- Instagram
- Facebook
- News
- Videos
- Web
- X (Twitter)

90  
Menzioni sui Social media

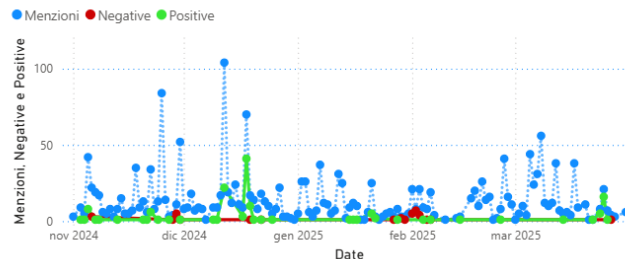
248K  
Copertura stimata sui Social Media

2003  
Likes sui Social media

2483  
Interazioni sui Social media

878  
Menzioni Non-social

4,16Mln  
Copertura stimata non-social



## Results 2/4

### AOU P. GIACCONE

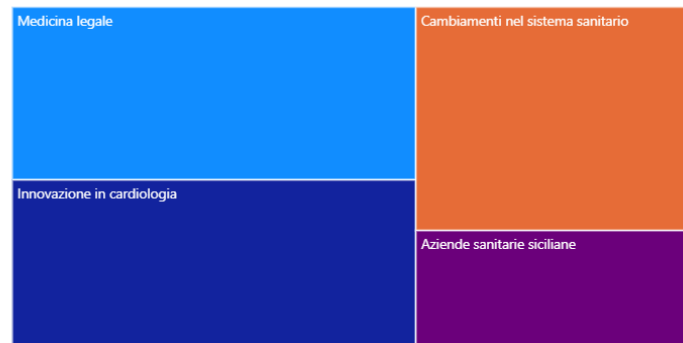
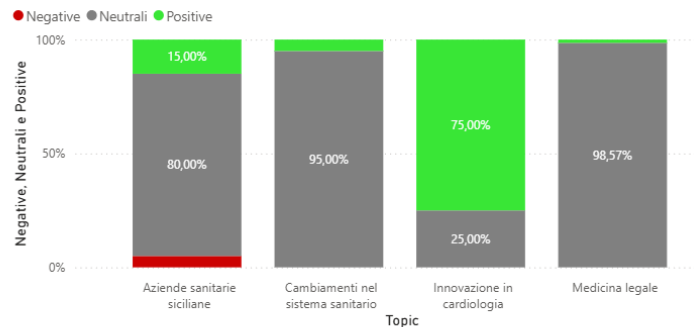
#### Topic:

**Medicina legale:** Autopsie e procedure medico legali al Policlinico di Palermo

**Innovazione in cardiologia:** Innovazioni e procedure in ambito cardiologico al Policlinico di Palermo.

**Cambiamenti nel SSR:** Problemi e collaborazioni nel sistema sanitario, tra cui ritardi nei risultati degli esami, violenza, denunce legali e accordi interspedalieri.

**Aziende sanitarie siciliane:** Interventi da parte delle istituzioni sanitarie ed episodi (negativi) in Sicilia e in particolare a Palermo



## Results 3/4

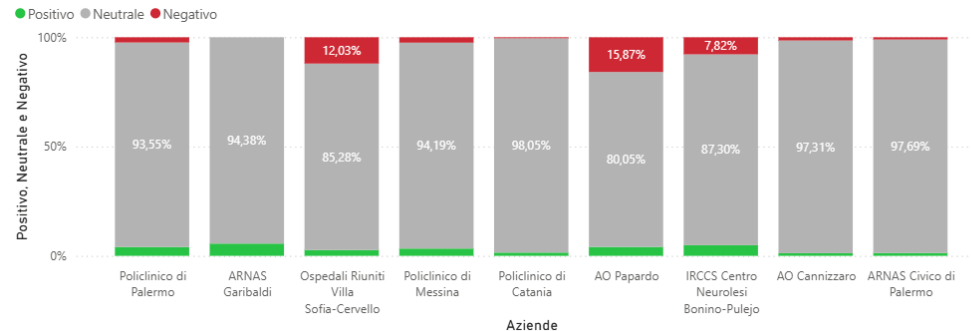
In less than two months since the announcement of the call, the “Paolo Giaccone” University Hospital in Palermo has regularised 34 temporary workers. (News)

Yesterday, at the Palermo University Hospital, Zazzà D’Anna’s art did something extraordinary: it brought people together. (Instagram)

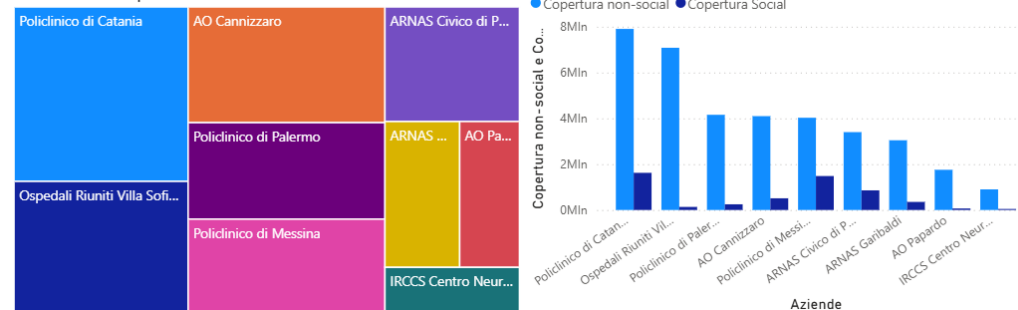
Operated on the wrong shoulder to remove a benign mass: “It was supposed to be on the left, but the scar is on the right.” (News)

The Palermo public prosecutor's office has ordered an autopsy: The body has been transferred to the Institute of Legal Medicine at the Palermo University Hospital. (News)

## Results 4/4



Totale Menzioni per Azienda



## Discussion

Sentiment Analysis (SA) contributes to measuring the **public value recognized** by the community by collecting evaluations and organizing them by topic.

Measuring the impact of public organizations on both beneficiaries and non-beneficiary stakeholders complements and enhances performance measurement and evaluation, especially with regard to the dimension of **equity**.

New digital technologies such as Artificial Intelligence (AI) enable the collection of new quantitative and qualitative information related to the performance of public organizations and the development of new performance metrics (Arnaboldi et al., 2017).



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e della Ricerca

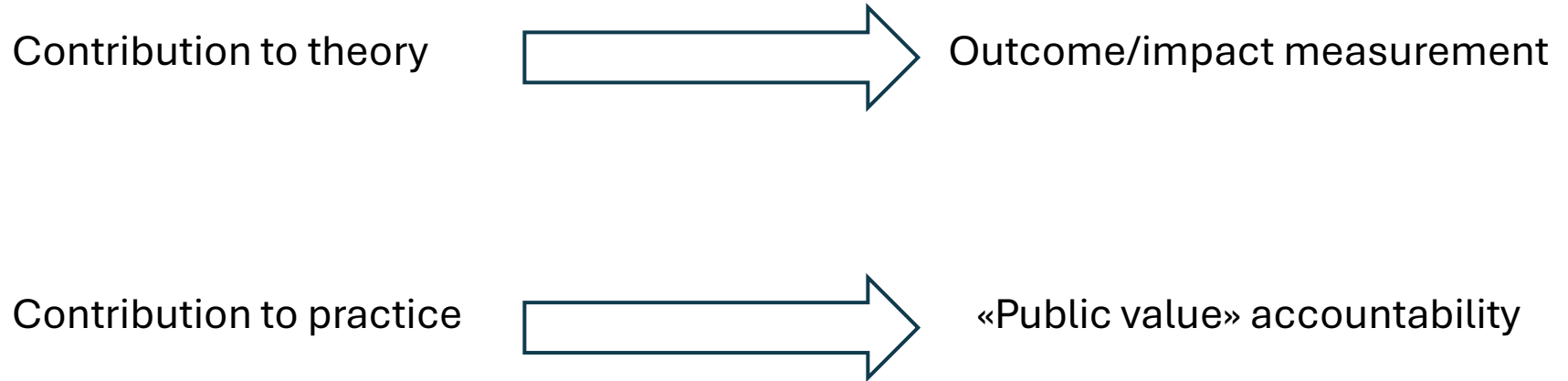


Italiadomani  
PIANO NAZIONALE  
DI RIPRESA E RESILIENZA



Università  
degli Studi di  
Messina

## Discussion



## Limits

Focus on a specific dimension of performance

Not every person use social network, not every social network user create contents and mentions

A cluster of colorful geometric shapes, including triangles and polygons in shades of pink, teal, and blue, positioned above the "THANK YOU" text.

# THANK YOU



[gnoto@unime.it](mailto:gnoto@unime.it)



# Advancing Performance Management in Healthcare: Harnessing Digital Technology for Knowledge Integration and Value Creation

Closes: 15 Jul 2025

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**Journal:** [Journal of Health Organization and Management](#)

**Guest editor(s):** [Guido Noto](#), [Francesca De Domenico](#), [Anna Maria Melina](#), [Rocco Reina](#)

