



Facility Management Costs for Hospital Infrastructures

Insights from the Italian Healthcare System

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AB

Background

Today, over 60% of hospitals in Italy have > 50 years. These facilities are often inadequate, energy inefficient, and lack the flexibility needed to adapt to evolving healthcare needs.

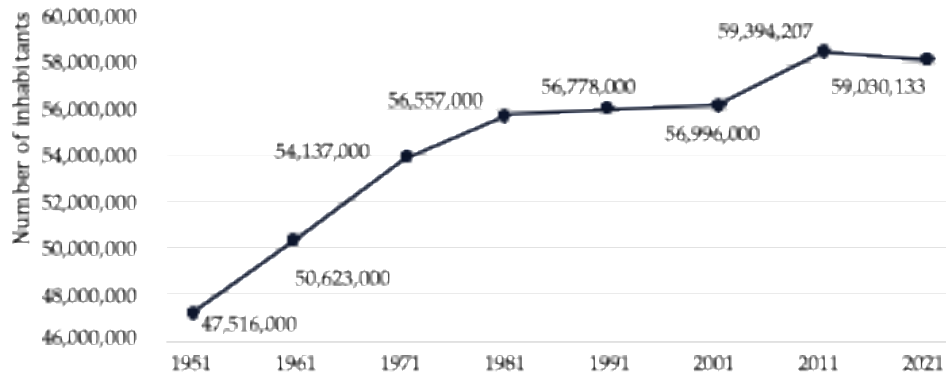
This study explores a critical yet under-investigated question: **How much does it cost to manage hospital facilities?**



60% ITALIAN HOSPITALS

**EXCEED THEIR OPTIMAL LIFE-CYCLE
ESTIMATED AROUND 50-60 YEARS**
(D&H LAB, 2022)

Evolution of the Italian Population (1951-2021)



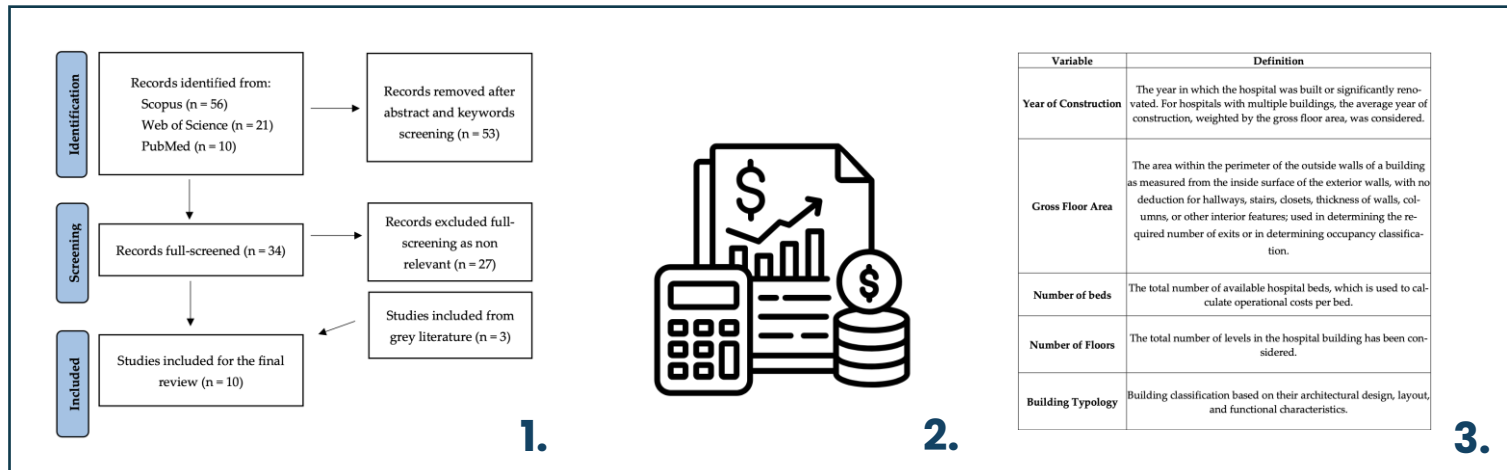
Evolution of public and private hospitals (1951-2021)




Methods

The study adopted a mixed-methods approach, combining a **systematic literature review**, financial data analysis from **hospital balance sheets**, and an interactive case study analysis using a validated **questionnaire** with a final response sample of (n=27 facilities | 20,4% response rate)

1. Theoretical Investigation – Literature Review
2. Practical Analysis – Balance Sheet Investigation
3. Interactive Phase – Survey

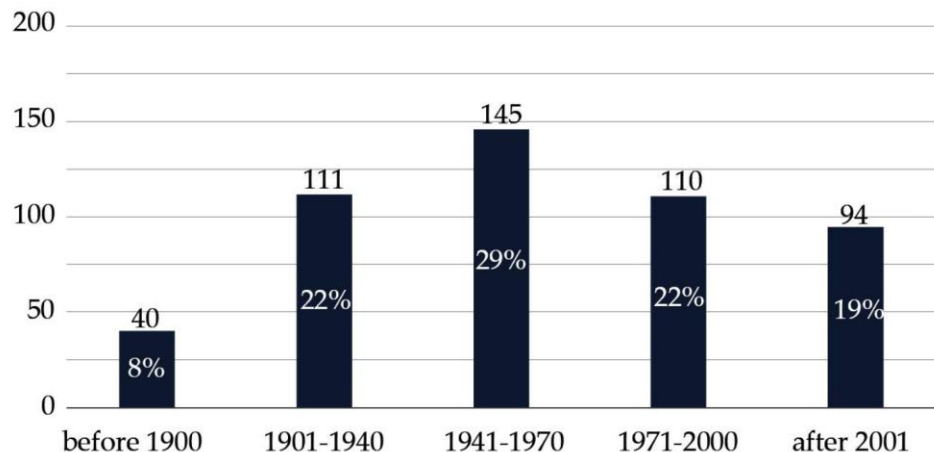


Results

 Prelimarily, we assessed the construction year of 500 hospital buildings across 132 facilities that received the survey.

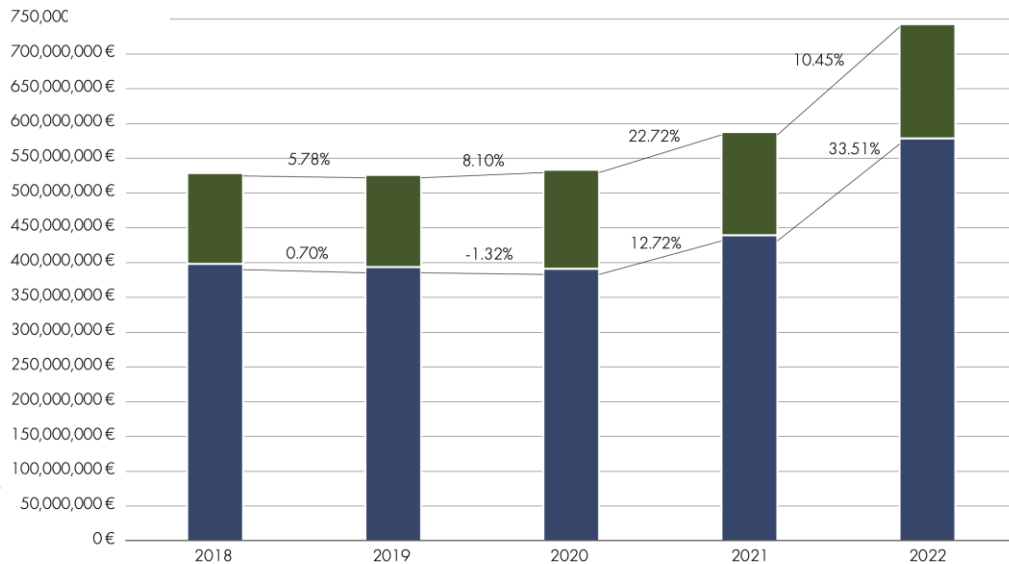
This distribution highlights the predominance of **mid-20th-century buildings** in the sample and may reflect broader post-war urban development trends.

59%
HOSPITALS BUILDINGS
HAVE BEEN BUILT BEFORE 1970



RESULTS

Trends



 Total Utilities Costs

 Total Ordinary Maintenance Costs

% Average Annual Variation Rate

*On a sample of (n=27) hospitals

6-8%
OPERATING COSTS ALLOCATED
TO FACILITY MANAGEMENT

+33.5%
ANNUAL INCREASE OF UTILITIES
FROM 2021-2022

RESULTS

Survey

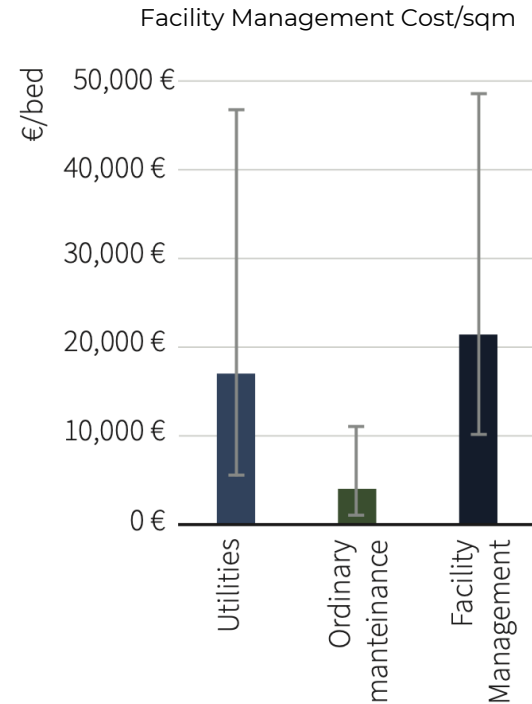
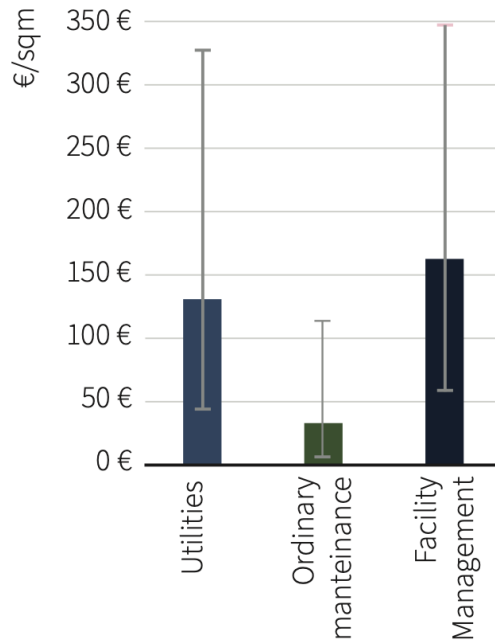
Parametric values
per square meter:

128,78€

Average value
for the utilities

32,8€

Average value
for maintenance



RESULTS

Survey

151.4€

Average mean value

340.9€

Maximum Value

35.458€

Average FM cost per bed
in high-complexity
hospitals

Hospital Typology	EUR/Bed*
Basic Healthcare Centres	€18,509.24
Level I Emergency Hospital ("DEA I° Livello)	€24,272.40
Level II Emergency Hospital ("DEA II° Livello)	€35,458.13

*On a sample of (n=27) hospitals

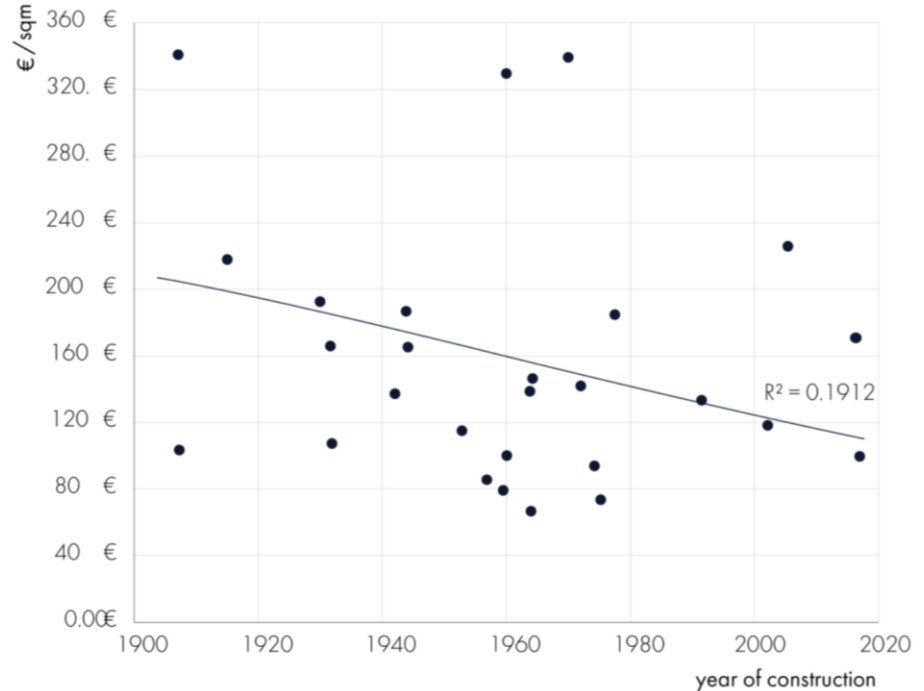
RESULTS

Relationship Between Building Age and Price per Square Meter

The scatter plot illustrates the relationship between the **year of construction** and the average price per square meter (**€/sqm**) of properties.

While there is considerable variability, a **weak negative trend is observed**: older properties tend to have slightly higher €/sqm values compared to newer constructions. This is reflected in the linear regression line and the coefficient of determination ($R^2 = 0.1912$).

This suggests that factors beyond age likely play a more significant role in determining facility management costs



THANK YOU

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Article

Facility Management Costs for Hospital Infrastructures: Insights from the Italian Healthcare System

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Abstract: **Background:** Hospital infrastructures account for a significant portion of health-care expenditures, yet the factors driving facility management costs (FMCs) remain under-explored, particularly in the Italian context. This study aims to analyze FMCs in hospitals, focusing on utility and maintenance expenses, while providing benchmarking values to support decision making. **Methods:** This study employed a mixed-methods approach, integrating a literature review, financial data analysis, and a case study of 27 hospital facilities in Lombardy. Data on utility and maintenance costs were collected from financial statements and supplemented with targeted questionnaires to enhance precision. Descriptive statistics and parametric cost indicators (e.g., EUR/sqm, EUR/bed) were analyzed to identify trends and disparities. **Results:** FMC increased by an average of 32.90% between 2019 and 2022, with utility expenses constituting 77.45% of total costs and maintenance accounting for 22.45%. Utility costs rose significantly (37.34%), driven by energy and cleaning services, while maintenance costs grew more moderately (18.66%). Cost variability was evident across hospital typologies, with Basic Healthcare Centers averaging 122.86 EUR/sqm compared to 232.66 EUR/sqm for Level II Emergency Hospitals. **Conclusions:** This study highlights significant variability in FMCs across Italian hospitals and underscores the need for benchmarking to optimize resource allocation. Future research should expand the dataset, incorporating extraordinary maintenance costs, and examine management models to enhance cost efficiency. These findings provide actionable insights for policymakers and healthcare administrators to improve hospital infrastructure sustainability and efficiency.



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