

Does the Surgical Technique have an impact on Unwarranted Geographical Variation for Benign Hysterectomy?

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Background

- Starting from our findings, we began discussing results with local health professionals.
- Professionals: hysterectomy surgeries performed with mini-invasive techniques are increasing and this leads to higher treatment rates and longer waiting lists



Is the surgical technique a source of geographical variation?

Methods

Geographical Area	Tuscany (Central Italy)
Number of inhabitants	3.7 million
Number of health districts	26
Years of the study	2016, 2017, 2018

Benign Hysterectomy

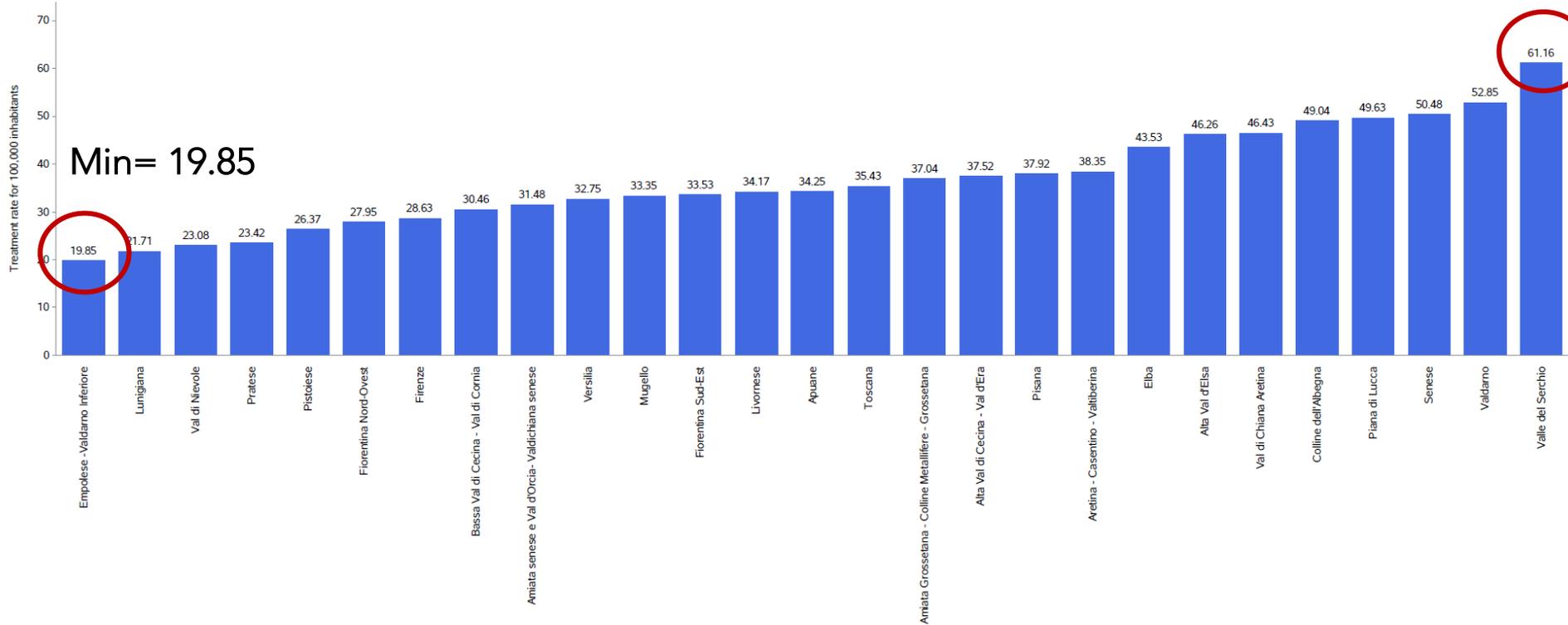
→ Traditional technique (open)

- Mini-invasive technique
- Laparoscopic surgery
 - Robotic surgery

Extent of variation for Benign Hysterectomy

Treatment rate for 100,000 inhabitants (std) – 2018

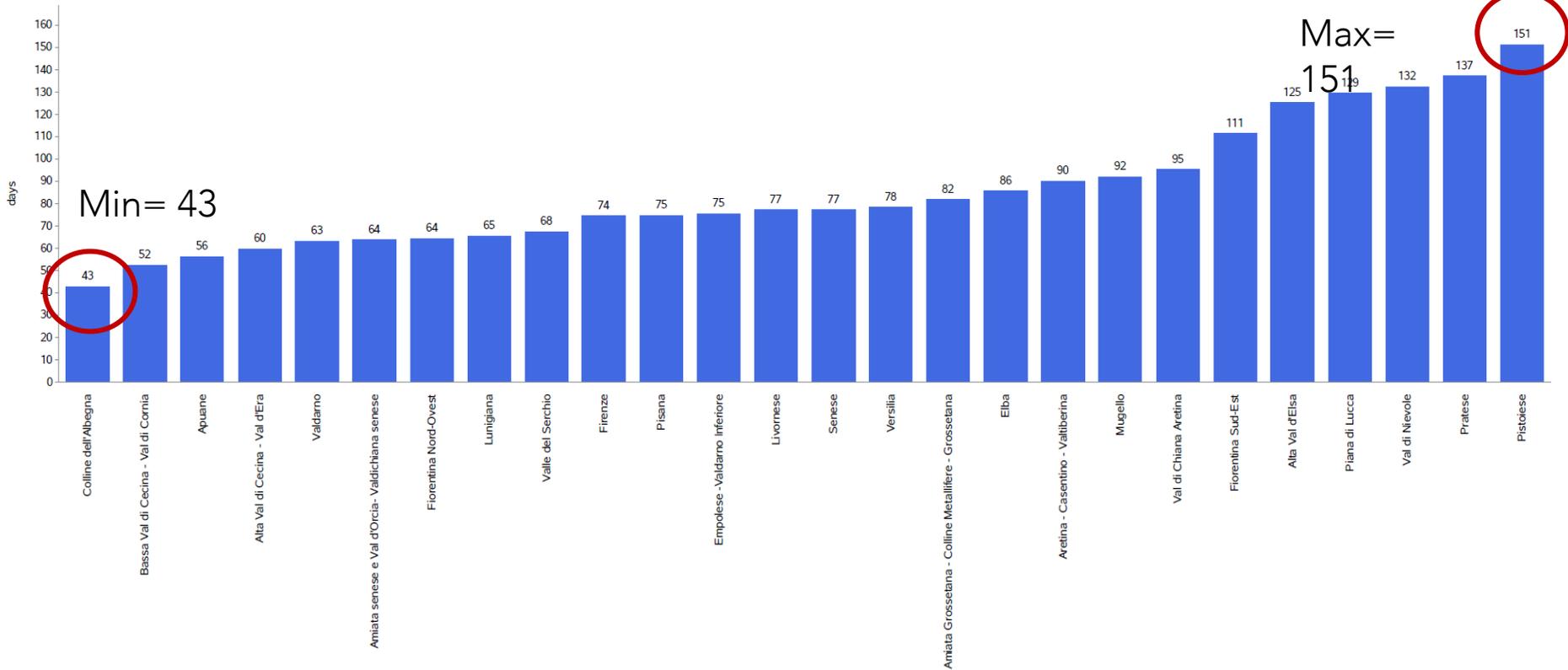
Max= 61.16



Mean	36.56
Standard Deviation	10.66

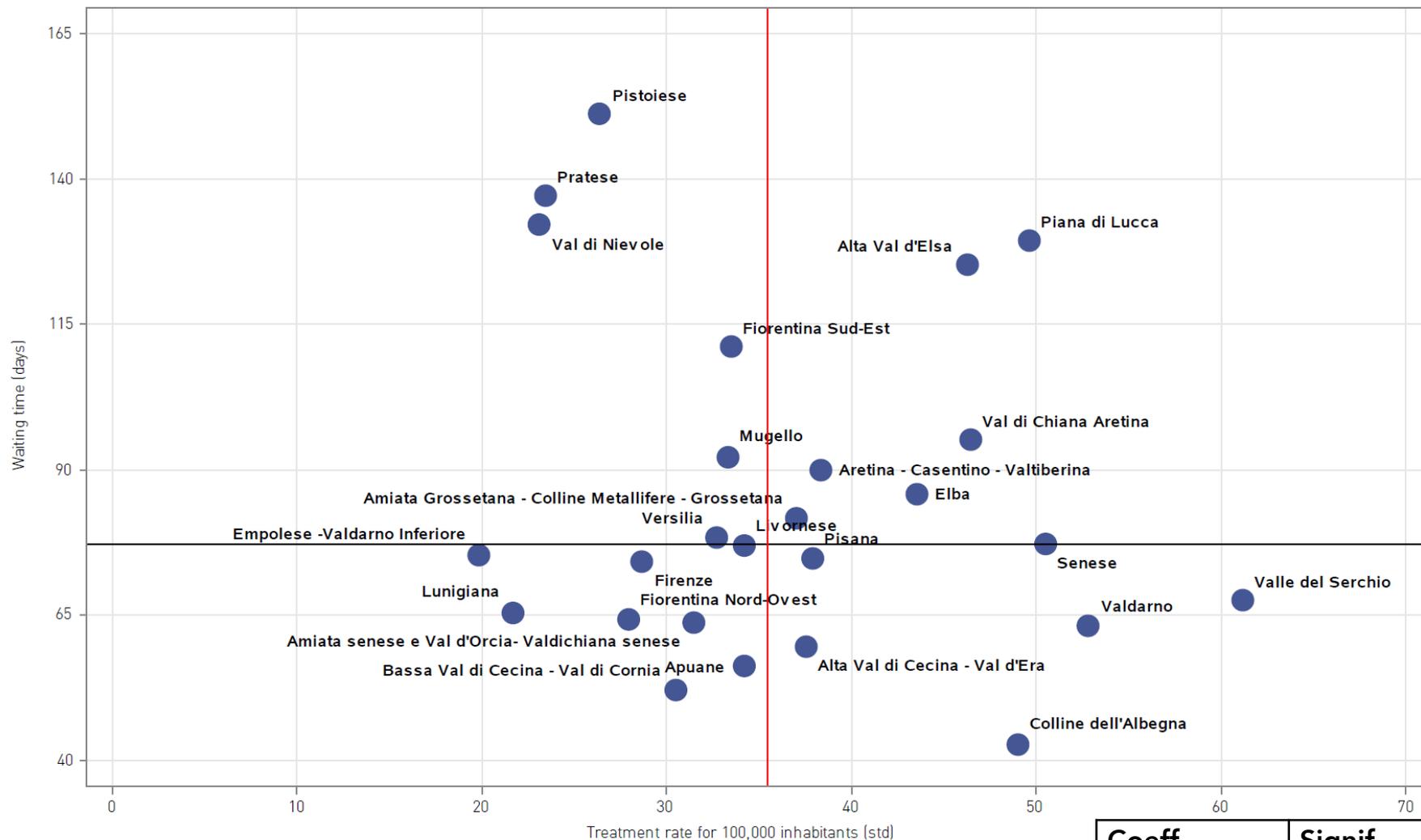
Extent of variation for Benign Hysterectomy

Waiting times (in days) – 2018



Mean	85.52
Standard Deviation	28.72

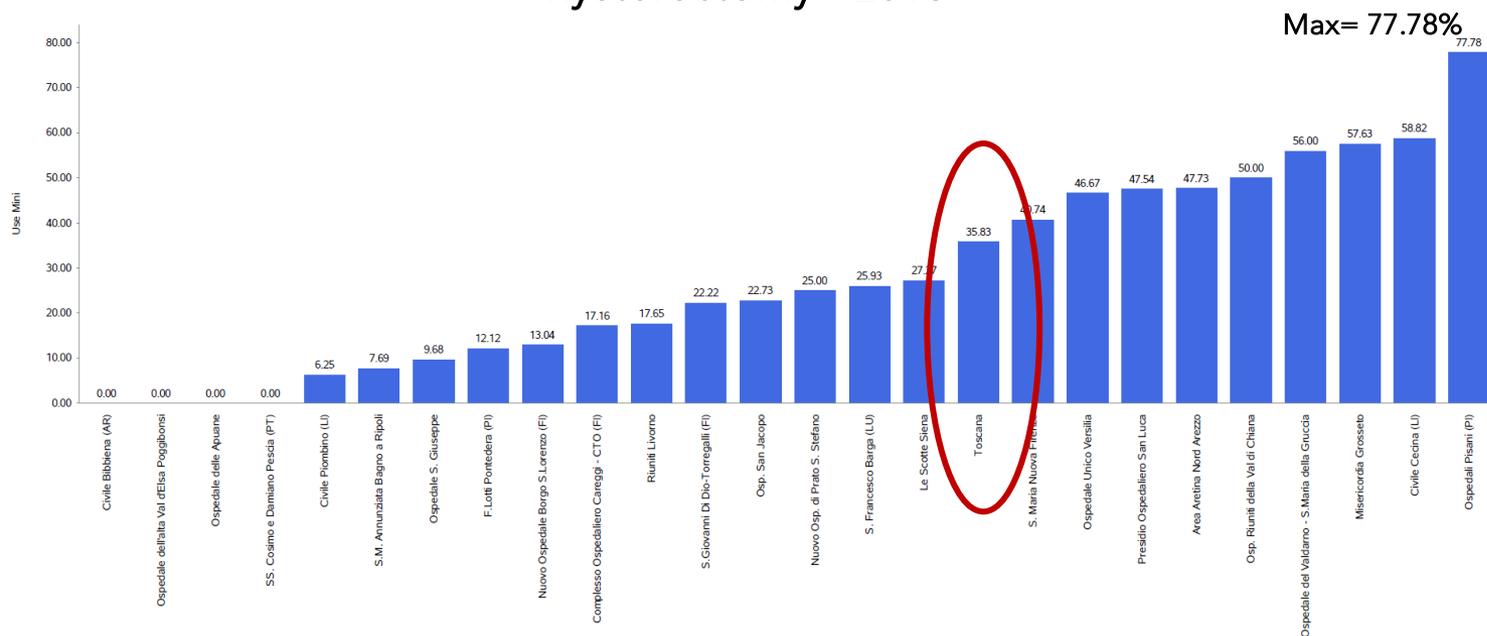
Extent of variation for Benign Hysterectomy



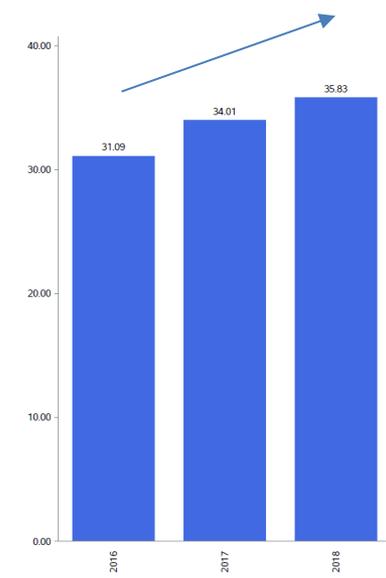
Coeff.	Signif.
-0.15	p = 0.46

Use of mini-invasive technique

Percentage of use of mini – invasive technique for benign hysterectomy - 2018



Trend 2016 - 2018



Items explored

Relationship between the percentage of mini invasive and:

1. treatment rates
2. waiting times
3. length of stay
4. outcomes (post-operative complications)

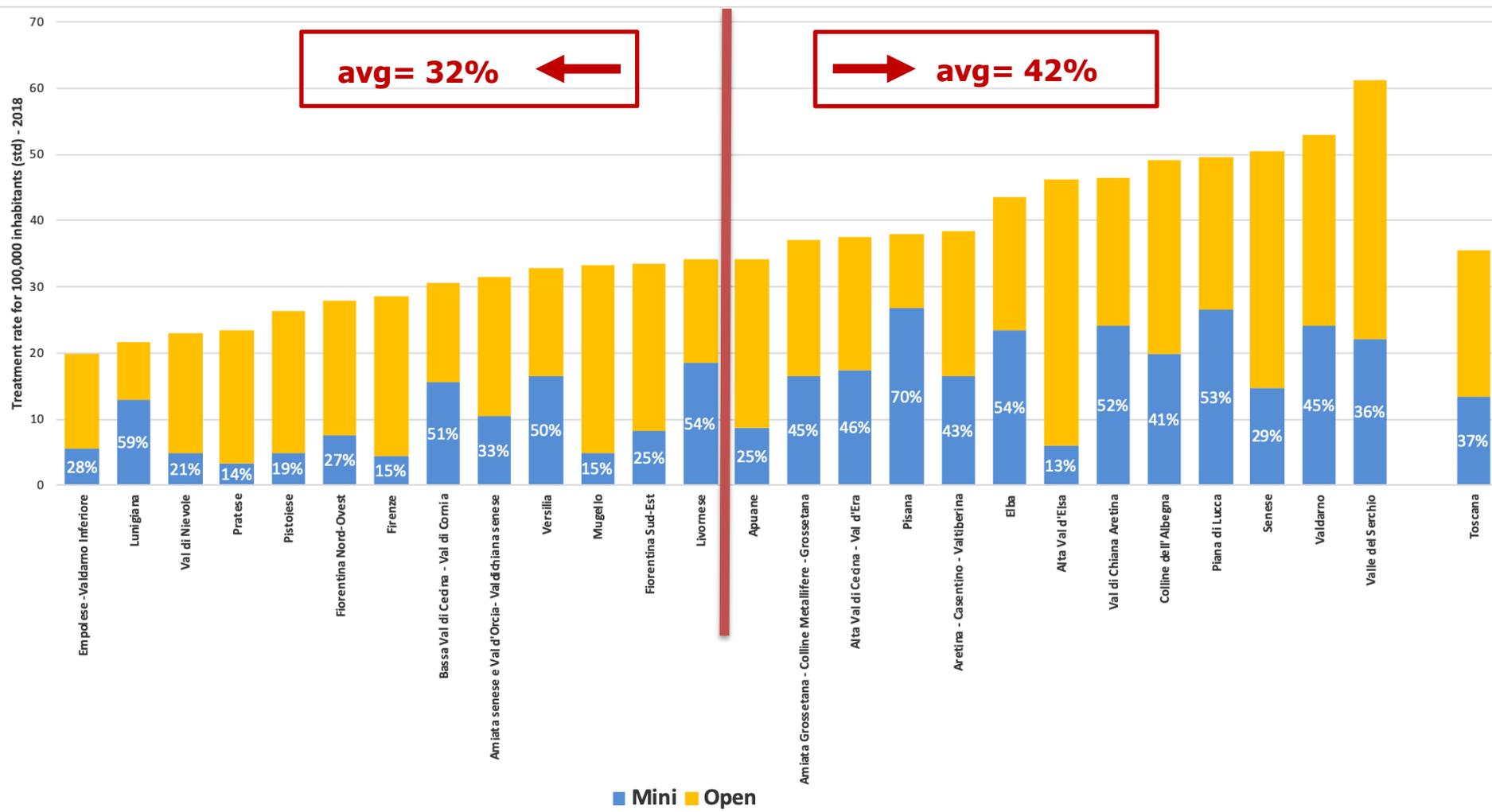
Items explored

Relationship between the percentage of mini invasive and:

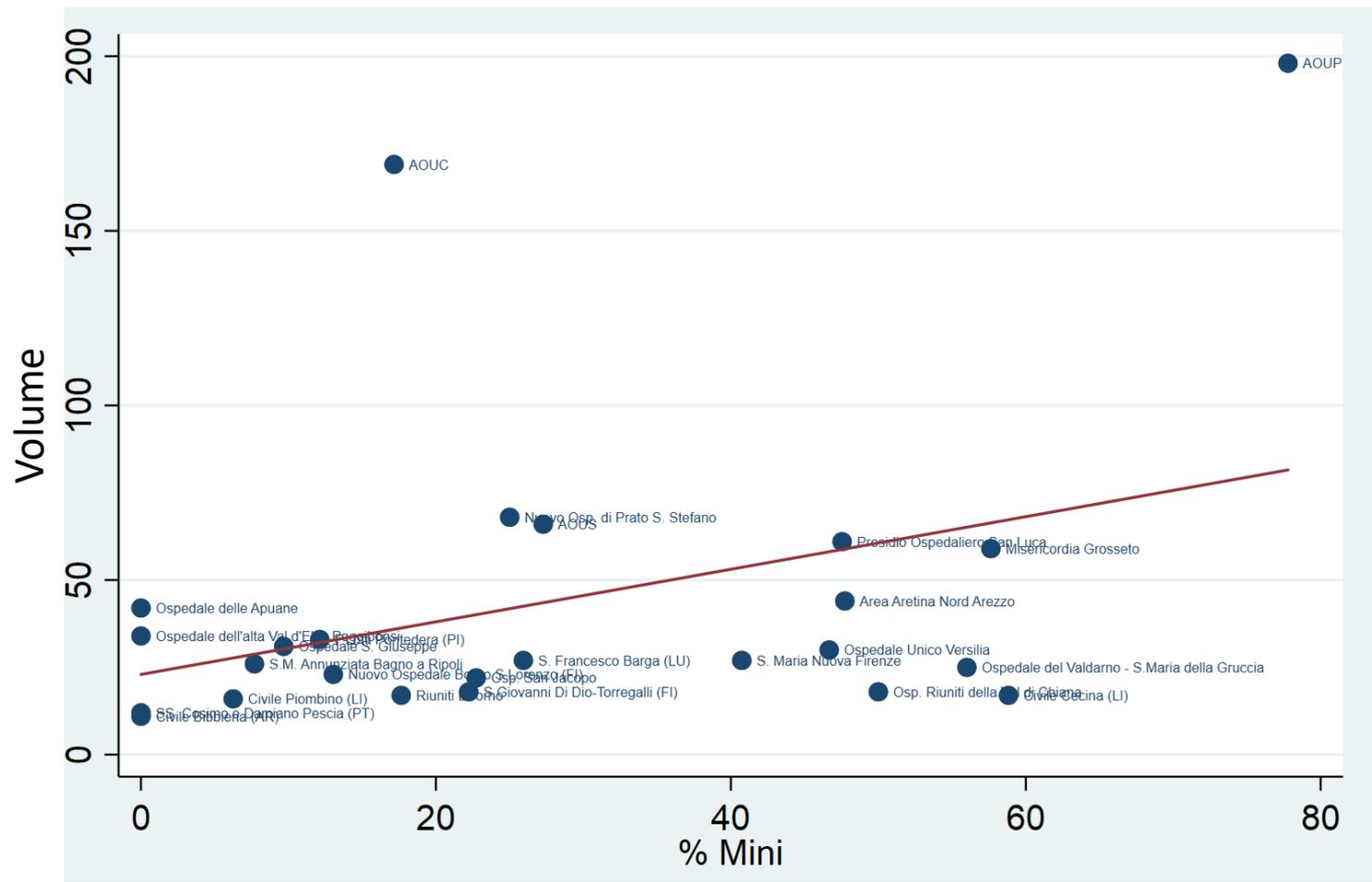
1. treatment rates
2. waiting times
3. length of stay
4. outcomes (post-operative complications)

Items explored - 1. treatment rates

Treatment rate for 100,000 inhabitants (std) – 2018



Items explored - 1. treatment rates



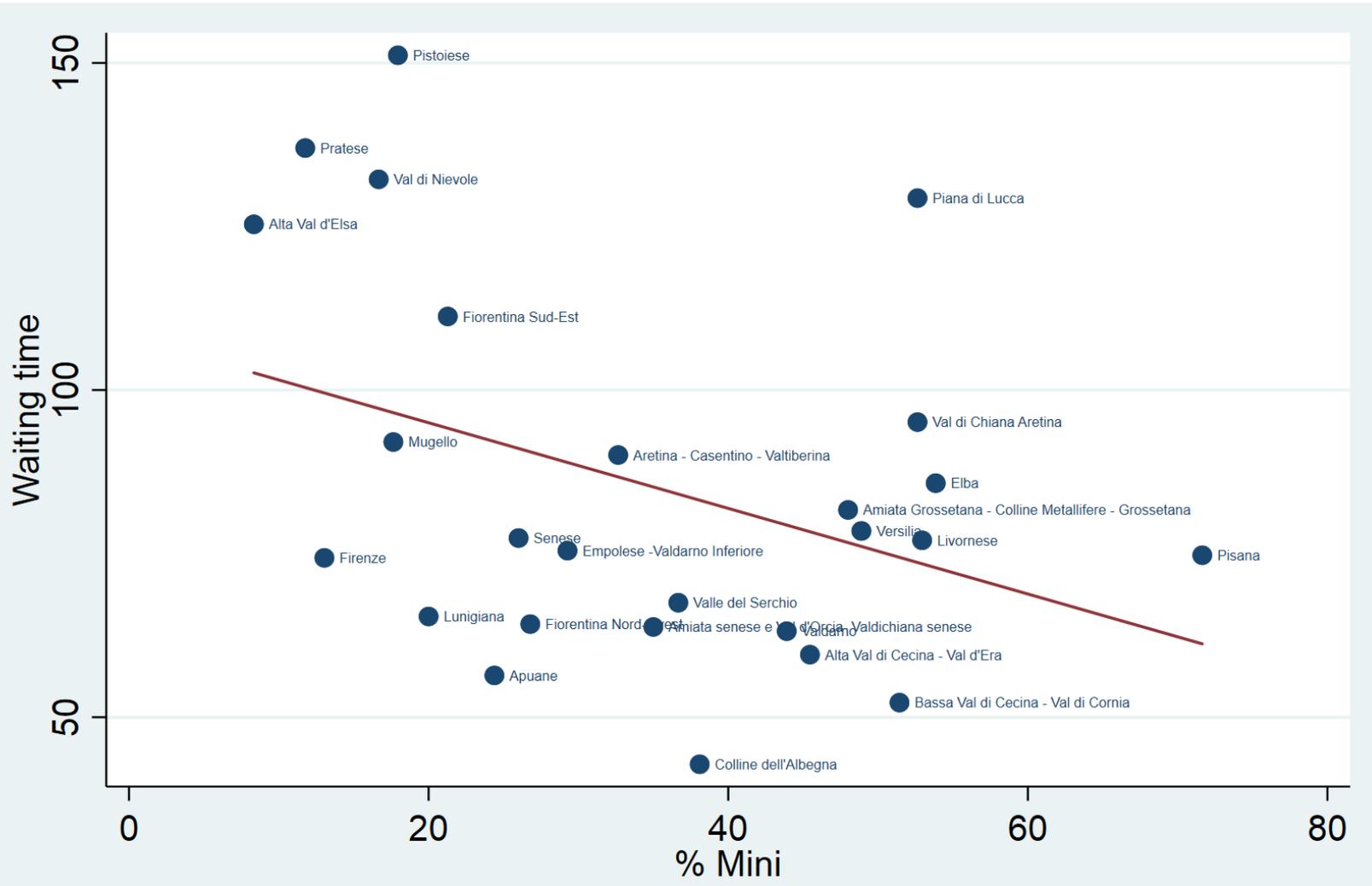
Coeff.	Signif.
0.371	P = 0.0681

Items explored

Relationship between the percentage of mini invasive and:

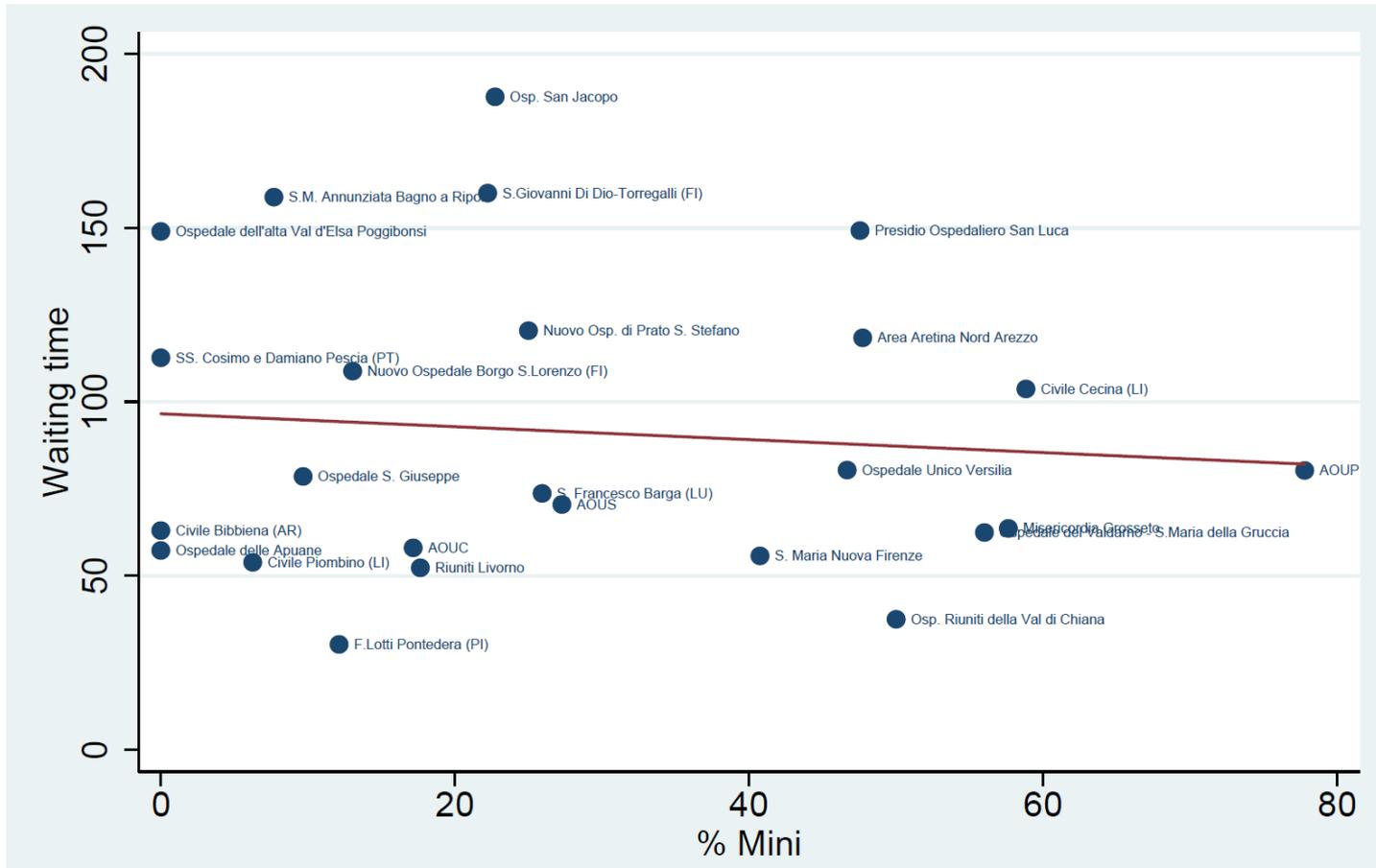
1. treatment rates
2. waiting times
3. length of stay
4. outcomes (post-operative complications)

Items explored - 2. waiting times



Coeff.	Signif.
-0.38	P = 0.058

Items explored - 2. waiting times



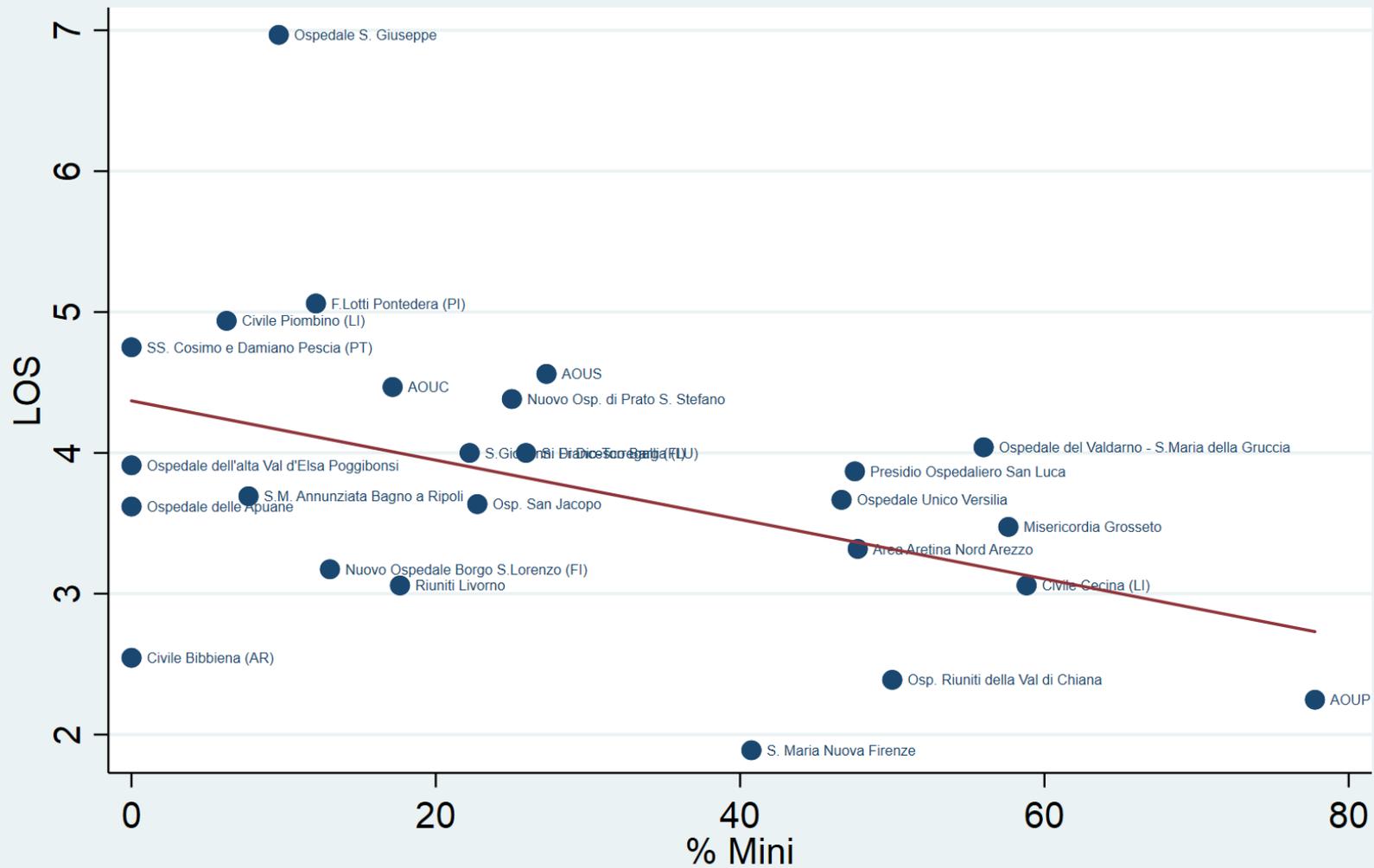
Coeff.	Signif.
-0.967	P = 0.6457

Items explored

Relationship between the percentage of mini invasive and:

1. treatment rates
2. waiting times
3. length of stay
4. outcomes (post-operative complications)

Items explored - 3. LOS



Coeff.	Signif.
-0.44	p = 0.02

Items explored

Relationship between the percentage of mini invasive and:

1. treatment rates
2. waiting times
3. length of stay
4. outcomes (post-operative complications)

Items explored - 4. complications

	2016	2017	2018
N° of mini-invasive procedures	324	366	392
N° open procedures	718	710	702
Total number of cases	1042	1076	1094
Percentage of mini-invasive procedures	31,09%	34,01%	35,83%

↑ + 21%

Clinical complications	2016	2017	2018
Complications (%)	2,02%	1,49%	1,46%
Complications for mini-invasive procedures	2,16%	1,09%	0,51%
Complications for open procedures	1,95%	1,69%	1,99%

↓
↓

Conclusions

Hypothesis	Verified
% mini invasive → treatment rates	Positive indication
% mini invasive → waiting times	Yes (but $p=0.058$)
% mini invasive → LOS	Yes
% mini invasive → outcomes	Yes (but small numbers)



Standardising the use of mini-invasive benign hysterectomy procedures could reduce geographical variation in terms of:

- treatment rates
- waiting times
- length of stay
- postoperative complications

Feedback time

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