1. Visual assesment

A close up of text on a white background

Description automatically generated

Zones under 0 indicate regions where observed values are lower than estimated. It means that in these regions there are some factors that reduce the actual value of variable compare to estimated.

Zones higher 0 indicate regions where observed values are higher than estimated. It means that there are some factors which contribute to fertility.

Zones near 0 indicate regions where estimated values are almost equal to observed.

Plot shows that there is positive autocorrelation between some regions.

1. Moran’s test

Global:

A screenshot of text

Description automatically generated

­­considering that p-value = 0.007 we reject null hypothesis and accept alternative one: there are spatial efects.

Local:

A picture containing text, green

Description automatically generated

A close up of a map

Description automatically generated

This moran’s plot indicates that there is only a small autocorrelation between regions because dots distributed on the whole plot

3) Geary’s test

A screenshot of a cell phone

Description automatically generated

Considering that Geary’s C test has the same set of hypothesis as Moran’s test we reject null hypothesis because p-value = 0.0002579 and accept alternative one: there are spatial efects.

Value of Geary C statistic tells about positive autocorrelation.

1. Join count test

A screenshot of a cell phone

Description automatically generated

* in case where residuals < 0 we observe presence of positive autocorrelation (clustering) because the number of same colour statistic is significantly higher than what we would expect by chance
* in case where residuals > 0 we observe null spatial autocorrelation (random pattern) because the number of same colour statistic is approximately the same as what we would expect by chance