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Research Note

Effectiveness of place-sensitive policies in tourism

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Rationale

The evidence-based evaluation of publicly funded socio-economic programs is increasingly widespread to support policymakers in future decision-making processes (Cerulli, 2015). Given the lack of public resources and the plenty of human activities to support (education, health, labor market etc.), it is difficult for policymakers to claim for additional resources in absence of certain and verifiable results deriving from previous policies (Murnane & Willet, 2011). Therefore, in order to demonstrate to have made good use of public resources, governments and policymakers need good and practical information about the impact of certain policies on the 'treated' subjects, and the counterfactual methods are increasingly considered as very powerful tools for individuating the causal effect of a policy on a group or a class of subjects, by simulating the impact on the 'potential outcome' under the construction of a 'quasi-experimental' design (Morgan & Winship, 2015).

While many large-scale policies start being evaluated also in tourism issues with such methods, like the effects of the tourist tax (Biagi, Brandano, & Pulina, 2017) and short-term rental regulation (Yeon, Song, & Lee, 2020) on hotel performances, or the impact of the blue-flag policy on the seaside tourism (Cerqua, 2017), as well as the effect of the single currency on the tourist flows in the Eurozone countries (Addessi, Biagi, & Brandano, 2019), little is yet known about the effects of micro-scale place-sensitive tourism policies on the peripheral destinations.

Since 2014 in Italy was funded a program aimed at recovering smaller remote destinations affected by lack of services and marked by spatial peripherality compared to the service centers. To do this, the 'National Strategy for the Inner Areas' program (hereinafter, Policy) leverages on the territorial capital of the selected areas (72 groups of municipalities, 20 of which – one per region – were designed as pilot projects), by exploiting the potential attractiveness of the places, which is tourist-related in most cases. This applies especially in the Casentino-Valtiberina – subject of this case study – which is the pilot area of the Tuscany region in Italy, formed by 17 municipalities of the Arezzo's province, 9 of which have been selected as eligible of the Policy's early transfers.

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The program can be considered place-sensitive because its implementation provides for a participatory approach, in which the local communities (private citizens, stakeholders, etc.) are called to participate in recognizing prioritized needs and determining suited interventions for their territories, together with local authorities (mayors) and higher-order bodies (provinces, regions), under the coordination of the national technical committee. The program officially started with the Stability Law 2014, which paid out the first 90 million euros to the selected pilot areas, later raised up to the overall 190 million euros for the period 2014–2018.[1]

As noticeable in the plan document[2] of the Casentino-Valtiberina, tourism is widely recognized as a pivotal axis to exploit for the area development. In particular, interventions have interested many forms of tourism, such as, for instance, sustainable (enhancement of forest, rural and park resources) through the creation of routes for cycle and trekking tourists and the institution of eco-museums; food-and-wine, through the recovery of local food specialties supply (cheese and cold cuts, above all); cultural, through the reinforcement of road networks and transportation between the ancient places that are plenty of religious and architectural attractions.

Along these lines, it may be of interest to deeper understand if such place-sensitive interventions really achieve the hoped-for objectives (in terms of tourist outcomes) for the areas selected by the Policy.

Research strategy

To evaluate the effectiveness of the Policy in tourism this study proposes a counterfactual semi-parametric approach by applying a Matching Difference-in-Differences to a panel data at municipality level, which is composed by 274 municipalities of the Tuscany region observed through the 14–year period 2005–2018, for a total of 3836 observations. The 9 eligible municipalities of the Casentino–Valtiberina pilot area have been set as the 'treated' units, while the other 265 have been used as the donor pool ('control' units) to randomize the research scenario on the basis of a selection of covariates. In appendix, a Synthetic Control was performed on each of the treated units to help results' visualization.

Data

The Policy has been evaluated employing three types of outcome variable and for each of them the effect has been computed, individually, by considering: all the types of accommodation facilities (hotel and extra-hotel), hotel (including only hotels ranging from 1 to 5 stars) and extra-hotel (including tourist campsites, holiday villages, rented holiday dwellings, farmhouses, youth hostels, holidays homes, mountain refuges, bed and breakfasts and other private accommodations).

With the aim to quantify the magnitude of the program's effect in terms of approximatively amount of nights spent on the treated municipalities, the first outcome variable refers to the raw number of nights recorded ($Y_{mt;o,h,e}$). The second type of outcome variable is modelled on the basis of the number of bed places, similarly to what is proposed by Koenig and Bischoff (2004), thus obtaining a measure of the occupancy rate, which is computed as follows:

$$Yor_{mt;o,h,e} = \left(\frac{Nights\ Spent_{mt;o,h,e}}{Bed\ Places_{mt;o,h,e} \times 365}\right) \times 100 \quad (1)$$

where Yor_{mt} is the occupancy rate in the m-municipality at a t-time, $Nights\ Spent_{mt}$ is the number of nights spent in the m-municipality at a t-time, $Bed\ Places_{mt}$ is the amount bed places available in the m-municipality at a t-time; o, h, e indicate, respectively, all types of accommodations, hotel and extra-hotel ones. The Eq. (1) does not take into account the price for accommodation, basically because the panel structure of data here proposed does not allow to control for the price, since the number of the accommodation structures are grouped by municipality; moreover, it relieves to know that the price may not be a key determinant of the occupancy rate (Leoni, Figini, & Nilsson, 2020).

The third outcome variable consists in the tourist intensity rate, because it allows to obtain 'a more realistic indication of the economic importance of tourism' (Jansen-Verbeke & Spee, 1995), since it balances the nights spent with the number of the inhabitants, as follows:

$$Yir_{mt;o,h,e} = \left(\frac{Nights\ Spent_{mt;o,h,e}}{Population_{mt} \times 365}\right) \times 100 \quad (2)$$

where Yir_{mt} is the intensity rate in the m-municipality at a t-time; $Population_{mt}$ is the resident population in the m-municipality at a t-time; $Nights\ Spent_{mt}$ and o, h, e are the same as in Eq. (1). In both Eqs. (1) and (2) the measures take into account the days of the year, since the time variable in the panel data is yearly.

As far as the set of covariates is concerned, they have been selected not to explain individually their coefficients on the outcome variables, but rather to provide the best set of confounding variables useful to randomize as much as possible the research scenario, thus allowing to find the optimal counterfactual for the treated units. Given that many determinants of the outcome var-

[1] The program is still ongoing, it has been refinanced in 2018 for another 3-year period 2019–2021.

[2] Available here: http://old2018.agenziacoesione.gov.it/opencms/export/sites/dps/it/documentazione/Aree_interne/STRATEGIE_DI_AREA/Strategie_di_area/Toscana/Strategia_Casentino_Valtiberina.pdf

Table 1
Matching difference-in-differences on *Y*.

	(i)	(ii)	(iii)
Outcome: *Y*	(*o*)verall	(*h*)otel	(*e*)xtra-hotel
Difference-in-differences	3296.98***	984.38	1593.35*
	(1299.07)	(601.33)	(964.22)
Controls	✓	✓	✓
R^2	0.53	0.32	0.42
Observations	1695	1533	1759

Table 2
Matching difference-in-differences on Y_{or}.

	(iv)	(v)	(vi)
Outcome: Y_{or}	(*o*)verall	(*h*)otel	(*e*)xtra-hotel
Difference-in-differences	1.969***	1.475	3.450***
	(0.519)	(1.071)	(0.627)
controls	✓	✓	✓
R^2	0.41	0.37	0.13
Observations	1690	1213	1759

iables can be unknown, the process known as the 'selection on observables' permits to control for everything is possible to control for. On such bases, three types of control groups were selected: *a*) tourism-related, with emphasis on the online reputation of the destination (Leoni et al., 2020) and on the importance of attractions (Vengesayi, Mavondo, & Reisinger, 2009), which are influential towards the destination's appeal; *b*) socioeconomic, which are found to be particularly sensitive to the Italian tourism (Massidda & Etzo, 2012); *c*) geographical, since it is recognized that certain environmental characteristics, such as altitude, surface and walkability, may relate to seasonality and carrying capacity issues (Mitchell & Murphy, 1991), but can also trigger tourist flows (Hall & Ram, 2019). Details about the descriptive statistics of the selected variables are in appendix (table A1).

Methods

Methods' specification section is in the appendix, together with the check for the parallel assumptions (tables A2–A4), which ensure that the trends would have gone in parallel in absence of the intervention. Results can never reject both the common pre-treatment dynamics and equal dynamics effects, so that they are to be considered satisfactory.

Results

Tables 1–3 (reduced) report the effect[3] of the Policy on the different types of tourist outcome (extended version is on Appendix).

Robustness

Placebo tests with fake treatment groups were applied to the other two designated 'inner areas' of Tuscany region (tables A5–A6), 'Garfagnana' and 'Mugello-Bisenzio-Valdisieve', which share very similar characteristics with Casentino-Valtiberina but that differ from the latter only for the treatment status of 'pilot project area'. Coefficients, as expected, are not significant, meaning that the results of Tables 1–3 are reliable and not biased by endogenous or exogenous effects. Moreover, further controls regarded the number of pre- and post- treatment periods (tables A7–A12) and the results stand.

Discussion and concluding remarks

The Policy reveals positive effects towards all types of tourist outcome. Nonetheless, whilst the effect is significant when all accommodation types are considered as outcome variable, the same does not occur when hotel and extra-hotel accommodations are tested individually: it seems that the program significantly impacts only on extra-hotel accommodations. This might be considered a good result, given that about the 75% of Casentino-Valtiberina's bed places are extra-hotel and considering that the program is particularly directed to those remote areas that are mainly marked by an extra-hotel supply (where the presence of hotels is scarce).

Specifically, the program increased comprehensive nights spent of around 3200 units per year in the treated area (around 1500 for extra-hotel ones); it has also boosted the overall occupancy rate of 2 pp. and the extra-hotel one of around 3.5 pp.; lastly,

[3] $^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$

Table 3
Matching difference-in-differences on Y_{ir}.

	(vii)	(viii)	(ix)
Outcome: Y_{ir}	(*o*)verall	(*h*)otel	(*e*)xtra-hotel
Difference-in-differences	0.549**	0.168	0.324*
	(0.251)	(0.125)	(0.174)
controls	✓	✓	✓
R^2	0.33	0.10	0.28
Observations	1690	1533	1769

overall tourist intensity increased by 0.5 pp. while extra-hotel one by 0.3 pp.

These results indicate that place-sensitive policies matter for enhancing tourist performances and suggest they may mitigate overtourism in certain areas by encouraging the tourists' dispersion from congested places towards lagging destinations.

Declaration of competing interest

The author declares that he has no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.annals.2021.103146.

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