DECODING ITALY'S COMMERCIAL DESERTIFICATION: CHALLENGES, CAUSES, AND SUSTAINABLE SOLUTIONS[1]

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Abstract. Commercial desertification—defined as the progressive decline of retail outlets—has emerged as a critical issue affecting urban and peripheral areas across Italy, with implications for local economies, social cohesion, and territorial equity. Between 2014 and 2022, while the total number of local units nationwide increased by 8.5%, the retail trade sector in non-specialised stores (NACE 47.1) experienced a marked contraction of 12.2%, reaching 18.1% in Southern regions. Paradoxically, employment in the sector rose by 5.6%, suggesting a structural shift in the composition and scale of retail activity.

This study investigates changes in the number of retail units at the municipal level across Italy by comparing percentage variations between 2014 and 2022, using data obtained from the Statistical Register of Local Units (ASIA-UL)[2] – that annually compiles structural data on business establishments operating in Italy, integrating administrative sources and statistical surveys to describe territorial distribution, economic activity, and local employment - and data from 'A misura di comune'[3] - an output of Istat's experimental statistics; this system disseminates municipal-level indicators across various thematic areas, drawing upon both official and non-official statistical sources - for the socio-demographic and economic indicators at the municipal level.

The results reveal significant spatial disparities, with smaller and inland municipalities exhibiting greater vulnerability to retail closures. Key predictors include demographic trends, income levels, accessibility, and sectoral performance. The findings underscore the need for place-based, inclusive policies to counteract commercial desertification and support the sustainable revitalisation of local commerce in the context of ongoing socio-economic transitions.

1. Introduction

Over the last years, several socio-economic studies have analysed the transformation of the retail sector, highlighting the processes of commercial desertification (Anquez, 1993) alongside urban gentrification (Hubbard, 2018). Both

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[2] https://www.istat.it/scheda-qualita/registro-statistico-delle-unita-locali-asia-ul/

[3] https://www.istat.it/statistica-sperimentale/aggiornamento-degli-indicatori-del-sistema-informativo-a-misura-di-comune/

phenomena substantially alter the urban structure and have a significant impact on social and economic ties in the area.

Several studies indicate a significant reduction in retail and wholesale activities, contrasted by growth in accommodation and catering activities (Confcommercio, 2024). The pandemic and high energy prices have accelerated this decline, although local commerce remains vital for urban liveability (Frago, 2021). Particularly affected by the commercial desertification are the inner and mountain areas (Clerici, 2025).

In Italy, over the past few decades, several significant events have had a profound impact on the retail sector's structure. The liberalisation of the commercial sector in 1998 accelerated the closure of several small retail outlets, undermining territorial cohesion, and the economic crisis of 2008 called into question the pillars of advanced capitalism, affecting the commercial sector and central and suburban urban spaces. The decline in consumption and changing spending habits have led to the closure of commercial activities, especially in city centres, often replaced by large commercial chains, such as outlets and suburban shopping centres, contributing to the crisis of traditional stores.

Commercial homogenisation, through the spread of franchising and fast fashion, has made the commercial offer less diversified, reducing the attractiveness of urban centres, while gentrification has transformed urban spaces, often excluding traditional and local commercial activities.

At the social level, we are witnessing a weakening of social and community ties, which encourages degradation and insecurity in central urban areas. The neighbourhood commercial activities provide the local population not only with an endowment of goods and services, but also generate “urbanity”, in the sense that they offer opportunities for interaction, aggregation and collective time (Tumini, 2024).

Using official statistics, this study examines changes in the number of retail units across Italian municipalities between 2014 and 2022 through percentage variation analysis. A subsequent multivariate approach explores the correlation between this decline and selected socio-demographic and geographical factors.

2. Data and methodology

The creation of statistical registers has profoundly transformed the methodology of producing official statistics. Sample surveys now play a renewed role in validating and supplementing archival sources. Business statistics were the first domain to extensively use administrative data, which contributed to the development of business statistical archives. As a result, official statistics offer comprehensive tools for analysing the production system by economic activity. However, to effectively capture the phenomenon at a territorial level and inform policy decisions, it is advisable to integrate the data from statistical archives with additional sources

accessible to policymakers. The statistical sources on companies used in this work are:

- the Statistical Archive on active enterprises (ASIA Enterprise), which considers the enterprise as the unit of observation for economic activity (5-digit NACE);
- the statistical archive on local units (ASIA-UL), which has the local unit as its unit of observation, and which is therefore better suited to territorial analyses;
- the Frame-SBS: structural statistics and the territorial structural statistics, based on the integration of administrative and statistical sources, provide a detailed overview of enterprises' economic variables, with a focus on financial statement data, associating economic variables with each local enterprise/unit.

The classification of economic activities enables the distinct identification of retail trade, both specialised and non-specialised, at the fifth digit of the NACE code, according to the type of commercial establishment. Enterprise structure variables were analysed using a Poisson model in conjunction with municipal data and indicators derived from the 'A misura di comune' indicator system.

The model, developed using 2022 municipal data, seeks to identify the factors associated with a variation within the sector *Retail sale in non-specialised stores* (NACE 47.1). The dependent variable is the number of local units (UL) in the sector in 2022. To model incidence rates rather than absolute counts, we included an offset term in the Poisson regression. Specifically, the logarithm of the number of UL in 2014 was incorporated as an offset, with its coefficient constrained to 1. This specification ensures that the estimated coefficients reflect changes in the rate of UL (and commercial desertification) per unit of baseline exposure, rather than changes in raw counts. By doing so, the model accounts for structural differences across municipalities, allowing for more accurate comparisons and a clearer interpretation of the covariates' effects.

The independent variables, qualitative and quantitative, refer to:

- population structure
- production system
- well-being of the population
- characteristics of the municipalities.

3. Results

The following section presents a multi-scalar analysis of retail transformations in Italy, observing the two time points, 2014 and 2022. It begins with a descriptive overview of employment and unit size across retail subsectors, then explores regional disparities in workforce distribution, structural shifts within non-specialised formats, and finally examines municipal-level patterns through both spatial mapping and regression modelling.

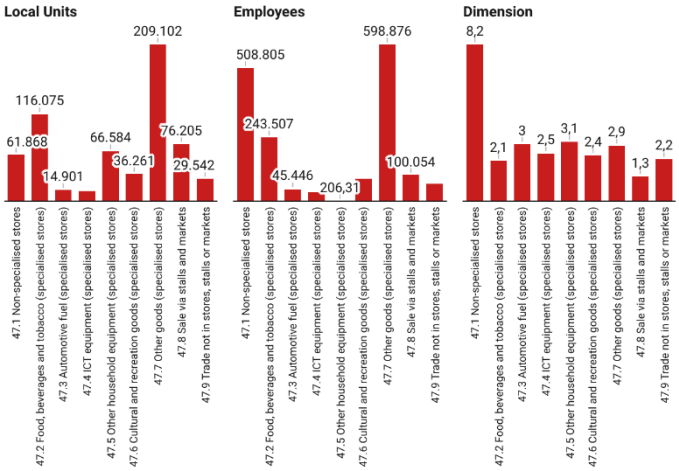
3.1 Descriptive analysis - distribution of employed ULs and average size

Retail trade represents a particularly significant component of Italy's production system. In 2022, it encompassed over 600,000 local units, accounting for 12% of the national total, and employed nearly two million individuals, corresponding to 10.4% of the total workforce.

It is the sub-sector of retail trade in specialised stores (NACE 47.7) that has the highest number of local units, followed by food stores (47.2). The largest number of employees is in the retail trade in specialised and non-specialised stores (47.7 and 47.1).

On average, local units within the retail trade sector employ three individuals. The non-specialised store sub-sector (47.1) comprises the largest establishments, whereas the food, beverages and tobacco sub-sector (47.2) is characterised by the smallest operational size (Figure 1).

Figure 1 – *ULs and employees' distribution in retail trade. Year 2022.*



Source: Authors' elaborations on Istat data. Created with Datawrapper.

Between 2014 and 2022, the sector has undergone profound transformations: small ULs shrink in favour of large ones, shops specialising in food and ICT have recorded an increase in terms of both ULs and employees, as well as trade non-stores (NACE 47.9), fundamentally e-commerce, which has recorded a rise of 72.5% of ULs and 56.4% of employees (Table 1).

Table 1 – *Percentage changes UL and employees in retail trade by subsector and class of employees. 2022 over 2014.*

NACE 3-DIGIT	CLASS OF EMPLOYEES									
	0-5		6-9		10-19		20+		Total	
	UL	Empl	UL	Empl	UL	Empl	UL	Empl	UL	Empl
47.1 Retail sale in non-specialised stores	-21.1	-19.6	6.1	6.6	16.4	17.3	27.0	12.0	-12.2	5.6
47.2 Retail sale of food, beverages and tobacco in specialised stores	0.9	2.7	53.1	54.8	69.4	72.2	107.2	81.9	2.5	10.5
47.3 Retail sale of automotive fuel in specialised stores	-31.5	-30.0	-2.4	-0.9	16.5	19.1	53.6	78.9	-28.4	-16.7
47.4 Retail sale of information and communication equipment in specialised stores	9.1	9.5	33.5	31.6	31.6	30.3	30.4	30.7	10.6	15.9
47.5 Retail sale of other household equipment in specialised stores	-19.2	-15.0	19.3	20.3	22.9	24.7	13.4	25.6	-16.5	-0.3
47.6 Retail sale of cultural and recreation goods in specialised stores	-24.5	-23.3	-3.6	-4.2	6.8	10.3	52.6	59.9	-23.2	-9.6
47.7 Retail sale of other goods in specialised stores	-16.3	-13.4	14.0	14.9	28.3	28.1	55.3	71.3	-13.4	1.7
47.8 Retail sale via stalls and markets	-18.6	-19.8	14.5	15.5	41.2	43.0	225.0	167.4	-18.4	-18.4
47.9 Retail trade not in stores, stalls or markets	73.0	52.9	74.4	76.7	58.6	59.9	53.1	56.3	72.5	56.4
RETAIL TRADE	**-12.7**	**-11.5**	**15.9**	**16.6**	**24.1**	**24.8**	**33.8**	**25.0**	**-10.3**	***2.6***

Source: Authors' elaborations on Istat data.

3.2 Regional-level analysis of changes in employee class distribution, 2014–2022

Building on the descriptive analysis conducted at the national level, a territorial examination proves valuable in highlighting regional disparities. Between 2014 and 2022, small non-specialised stores (NACE 47.1) declined across all regions except Lazio, whereas larger establishments increased throughout the country, with a more pronounced growth in the Southern regions. Small local units experienced a 20% reduction in employment, with the steepest losses (exceeding 30%) recorded in Molise, Marche and Umbria. Large ULs register a 12% increase in employees, with the largest increase in Campania (+81%) and Puglia (+48%).

Between 2014 and 2022, the food retail sub-sector (47.2) recorded positive developments, with increases in both the number of local units and employees, particularly among smaller establishments. Significant territorial differences emerged, with small stores maintaining their presence in Southern regions while declining in the North-East. In terms of employment, Basilicata and Lazio registered the highest growth, at 14% and 13%, respectively. Large-scale food retailers expanded across all regions, except Lazio.

Conversely, the household equipment retail sub-sector (47.5) experienced a general decline in both employment and the number of local units, most notably among small stores. The expansion of major retail chains appears to have significantly contributed to the decline of smaller outlets offering furniture, home essentials, and do-it-yourself supplies. Notable employment gains, exceeding 50%, were observed in Calabria, Sicilia and Lazio.

The cultural and recreational goods sub-sector (47.6), including books and sporting equipment, also witnessed a contraction of small businesses in favour of large retailers. The most substantial reductions in small outlets occurred in northern regions, while employment in large establishments doubled in Puglia, Calabria, Sardegna, Trentino and Umbria.

3.3 Structural shifts in non-specialised retail formats

One of the most significant transformations is related to non-specialised trade. At the national level, between 2014 and 2022, there is a crisis in hypermarkets (>2,500 m²), which lose more than 10% of employees; on the other hand, there is an increase in ULs and supermarket employees (>400 m² and <2,500 m²), which increase by 20% and 18% respectively. Discount stores, department stores and non-specialised appliance stores also increase.

Minimarkets experienced the most pronounced decline during the period under consideration, with a reduction of nearly 30% in employment and a loss of approximately 40% of local units (Table 2).

Table 2 – *Percentage changes UL and employees in retail trade in non-specialised stores by subsector. 2022 over 2014.*

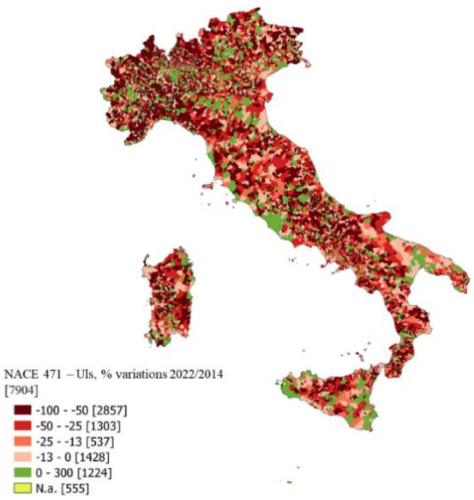
NACE 5-DIGIT	Local Units	Employees
47111 – Hypermarkets	-0,2	-10,9
47112 – Supermarkets	19,2	17,6
47113 - Discount food stores	6,0	36,7
47114 - Minimarkets and other non-specialized miscellaneous food stores	-41,1	-28,7
47115 - Retail sale of frozen foods	0,3	22,0
47191 - Department stores	88,0	7,4
47192 - Retail sale in non-specialized stores of computers, peripherals, telecommunications equipment, audio and video consumer electronics, household appliances	27,8	20,4
47199 - Emporiums and other non-specialized stores of various non-food products	120,3	151,2
TOTAL	***-12,2***	***5,6***

Source: Authors' elaborations on Istat data.

3.4 Municipal-level analysis

Focusing once again on the non-specialised retail trade sector, a widespread decline in local units is evident at the municipal level. In contrast, increases in local units are generally concentrated along coastal areas and within major urban agglomerations, such as Rome (Figure 2).

Figure 2 – *Retail sale in non-specialised stores. Percentage changes in ULs. 2022 compared to 2014.*



Source: Authors' elaborations on Istat data.

Once the data on enterprises and local units had been restructured at the municipal level, a Poisson regression model was developed to identify the factors associated with changes in ULs within the non-specialised retail trade sector (NACE 47.1) between the two time points.

Building on the descriptive patterns observed across regions and store sizes, the following covariates were selected to capture demographic, economic and spatial heterogeneity (Table 3).

Table 3 – *List of covariates and acronyms.*

Covariates	Acronyms
Population changes between 2014 and 2022, %	popchg_14_22
Old-age index, 2022 *Ratio between the population aged 65 and over and the population aged 0-14, multiplied by 100*	oldage_idx
Average taxable income per taxpayer, 2022, euros	tax_income
Population density, 2022, people/km²	pop_density
Municipality in an inland area *1: central areas; 0 = inner areas*	inland_muni
Travel time to the nearest hub, minutes	time_to_hub
Change in sector employment between 2014 and 2022, %	empchg_sector
Value added per employee, 2022, euros	va_sector

We estimated a Poisson regression model to examine the territorial determinants of the number of local units (UL) in sector 47.1 in 2022, using the logarithm of UL in 2014 as an offset to model incidence rates rather than absolute counts (Cameron and Trivedi, 2013; Long & Freese, 2014). This specification allows for the interpretation of coefficients in terms of changes in the expected rate of UL per unit of baseline exposure, controlling for structural differences across municipalities. The model is statistically significant overall (LR $\chi^2(8) = 2052.80$, $p < 0.001$), with a pseudo R^2 of 0.0715, indicating a modest but meaningful explanatory power for a count-based specification. As expected in count-based models, the pseudo R^2 value is relatively low and should not be interpreted in the same way as in linear regression. Instead, model adequacy is better assessed through the global significance test, with the likelihood ratio chi-squared statistic (LR χ^2) providing a more reliable measure of overall model fit (Table 4).

All covariates included in the model are statistically significant at the 1% level. Recent population growth is positively associated with the rate of UL, suggesting that municipalities experiencing demographic expansion tend to retain or attract more commercial activity. In contrast, the old-age index exhibits a negative effect, indicating that demographic ageing may be linked to commercial contraction. Socio-economic conditions also play a significant role: higher per capita tax income and greater population density are both positively associated with UL rates, reflecting

the influence of economic vitality and urban concentration. Accessibility factors show penalising effects, with municipalities located farther from urban hubs exhibiting lower rates of UL. Of relevance is the variable *inland_muni*: it is a binary indicator where 1 corresponds to central areas and 0 to inner areas. The negative and statistically significant coefficient (–0.079, $p < 0.001$) implies that, holding other factors constant, municipalities classified as central areas exhibit a lower expected rate of local units (ULs) in the non-specialised retail sector (NACE 47.1) compared to inner areas. Since the reference category is inner areas (coded as 0), the negative sign indicates that central areas are associated with a relative disadvantage in terms of UL presence.

Table 4 – *Parameter estimates from the generalized linear model with Poisson distribution and log link function.*

Covariates	Coefficient	St.Err.	t-value	p-value
popchg_14_22	0.009986	0.001	7.76	0.000
oldage_idx	-0.000224	0.000	-2.71	0.007
tax_income	0.000012	0.000	10.08	0.000
pop_density	0.000027	0.000	10.69	0.000
inland_muni	-0.078965	0.015	-5.30	0.000
time_to_hub	-0.003517	0.000	-9.54	0.000
empchg_sector	0.000529	0.000	23.05	0.000
va_sector	0.000003	0.000	8.98	0.000
_intercept	-0.307953	0.032	-9.49	0.000
log_UL_2014	1 (offset)			
Mean dependent var	9.953	SD dependent var		55.368
Pseudo r-squared	0.071	Number of obs		6200
Chi-square	2052.797	Prob > chi2		0.000
Akaike crit. (AIC)	26690.636	Bayesian crit. (BIC)		26751.227

Source: Authors' elaborations on Istat data.

This result challenges conventional assumptions about retail concentration in central zones and suggests that inner areas—often considered structurally weaker—may display unexpected dynamism or resilience in maintaining retail activity. Such findings underscore the importance of revisiting territorial classifications when designing place-based commercial policies.

Finally, sectoral dynamics are strongly predictive: both employment change and value added in the sector are positively associated with the outcome, confirming the relevance of economic performance indicators in explaining territorial variation. The constant term is negative and statistically significant, as expected in log-linear count models.

Overall, the results highlight the interplay between demographic, economic, and spatial factors in shaping the geography of commercial presence and support the use of exposure-adjusted models for territorial analysis.

4. Conclusions and policy implications

Between 2014 and 2022, the Italian retail sector underwent a profound transformation marked by the decline of small-scale retail units and the simultaneous expansion of larger commercial formats. This shift, consistent with broader international trends, has seen large-scale distribution (GDO) consolidate its dominance, often acting as a "category killer" by enlarging sales areas and concentrating market power. While traditional sub-sectors experienced significant setbacks, specialised food and ICT retailers demonstrated greater resilience, and the growth of e-commerce continued unabated. A central paradox emerges from the analysis: despite the contraction in the number of local units (ULs), employment in the sector increased, suggesting a reconfiguration of retail structures rather than a net loss of jobs.

This evolution reflects deeper demographic, economic, and spatial dynamics. The steady reduction in the number of Labour Market Areas signals a growing concentration of activity in metropolitan centres, reinforcing their attractiveness and reshaping territorial balances. Within the non-specialised retail trade sector (NACE 47.1), the contrast is particularly stark: hypermarkets registered sharp employment losses, while supermarkets expanded both in number and workforce. Minimarkets experienced the steepest decline, yet discount stores, department stores, and appliance retailers gained ground. The overall stability in employment figures is largely attributable to the transition of former micro-enterprise owners into wage employment within larger retail structures, indicating a shift in occupational status rather than a disappearance of labour.

Municipal-level changes in ULs show statistically significant associations with selected socio-economic and geographic variables, although no causal inference is drawn. Interestingly, inland areas—often marginalised in previous development models—display unexpected dynamism in retail growth. Demographic factors, such as population ageing, contribute to stable demand, while higher taxable income and improved accessibility, measured by reduced travel times to urban hubs, further support retail activity. Sectoral indicators, including employment change and value added, also reinforce commercial vitality, underscoring the importance of economic performance in shaping territorial outcomes.

Environmental considerations could add further complexity. The expansion of large-scale retail formats entails increased land consumption and a reliance on private transportation, raising concerns about sustainability. In contrast, neighbourhood shops offer environmental advantages by integrating into existing

urban fabrics and supporting soft mobility modes such as walking and cycling. This divergence highlights the importance of environmentally conscious planning in shaping the future of retail, in line with the priorities of the United Nations' 2030 Agenda, particularly Goal 11 on sustainable cities and communities (OECD, 2020).

The Poisson regression results offer clear policy insights for addressing commercial desertification. The positive association between recent population growth and UL rates suggests that demographic vitality is a key enabler of retail resilience. Conversely, the negative effects linked to ageing populations and peripheral location point to the need for targeted interventions in structurally disadvantaged areas. Municipalities with limited accessibility and weaker sectoral dynamics may require tailored support measures, including incentives for business retention, improved connectivity to urban hubs, and strategic alignment of local development plans with sector-specific trends. The strong predictive power of employment change and value added further highlights the importance of integrating labour market intelligence and economic indicators into regional programming. Overall, the findings support a place-based approach to commercial policy (Barca, 2009), one that recognises and responds to demographic, economic, and spatial asymmetries to promote inclusive and sustainable territorial development.

Addressing the decline of small retailers requires a multifaceted strategy that involves coordinated action between public institutions and private stakeholders. Several Italian regions have introduced economic incentives to sustain local commerce, including support for complementary services such as home delivery. Initiatives like the "Cities" project, led by Confcommercio and ANCI, promote urban regeneration by revitalising historic shops through collaborative efforts between business communities and local governments. In some urban contexts, shop owners have formed commercial districts, fostering a shared identity and enhancing the attractiveness of retail environments through events and improved offerings. Digitalisation programmes further empower small shops to compete in a changing market, enabling them to establish an online presence and adopt omnichannel strategies. At the municipal level, regulatory frameworks are being revised to protect neighbourhood retail, recognising its role as a public interest service and a pillar of social cohesion.

As Zanderighi and Orsi (2020) emphasise, fostering the resilience of proximity-based commerce requires a holistic approach that transcends economic efficiency. What emerges is the need for a balanced model that strengthens urban liveability while supporting the positive externalities generated by local retail ecosystems. Considering demographic transitions, environmental pressures, and digital transformation, the future of retail lies in strategies that combine competitiveness with inclusivity and sustainability. Neighbourhood retail should be recognised not

only as an economic actor, but as a form of social infrastructure essential to urban cohesion.

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