

OPTITRANS PGI01997

Baseline Study



Abruzzo Region



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1. Abruzzo Region: population and territorial characteristics

1.1. Geography and territory

Abruzzo is a small region of Central/Southern Italy. It occupies an area of 10,862 km² and has a population of 1,332,689 inhabitants, being one of the least populated Italian administrative Regions.

Its territory has an irregular shape, whose maximum diameter is about 150Km. The coastal strip stretches for 130 Kms from the Tronto to Trigno Rivers and forms the eastern border of the region. Other borders are Marche region in the north, Molise in the South and Lazio in the West. This western border lies 80 km East of Rome.

7,027 sq km of its territory (out of 10,862, 65% of total), are occupied by the mountains, which in Abruzzo includes the 3 highest peaks of the Apennines Chain and Gran Sasso e Monti della Laga and the Majella and Morrone National Parks. That makes the region as one of the most mountainous in Italy - 34.9% of the territory is occupied by the hills, while the percentage of flat areas is practically non-existent – but also the “greenest region” in Europe. In its mountainous areas one third of its territory (34%) is set aside as natural parks: there are three national parks, one regional park, and 38 protected natural reserves.



Figure 1: Administrative and physical Map of Abruzzo.

The Apennines chain divides Abruzzo in longitudinal direction, North to South, in two different sections: the Western, internal mountainous area, with a medium altitude of about 500 metres on the level of the sea and several plateaus; the Eastern part, the hill and coastal area from the Apennines to the Adriatic Sea. These two wide physical sections are connected by the valley bottoms of the rivers Aterno-Pescara, in the central part of the region, and Sangro, in the south. Apart from Aterno, that runs in the internal section north to south, all the rivers flow from mountains to the Adriatic sea in the eastern section (the main are Tronto, Tordino, Vomano, Pescara, Sangro and Trigno) in West-East direction. These bottoms of valleys, as well as and the coastline are the seats of all historical and modern roads and rail transport connections (Fig. 1; also see chapter on infrastructure).

Abruzzo is considered culturally, linguistically, historically, and economically a region of Southern Italy, although geographically it is considered central.

From the administrative point of view, the region is divided in four provinces. L'Aquila is the capital of the and second largest city (pop. about 73,000) of Abruzzo Region, and its province is wholly in the internal mountainous area. Teramo, Pescara, and Chieti cover respectively the northern, central and southern parts of the Adriatic section of the region. Pescara is in central position on the Adriatic coast and is the largest city of Abruzzo, with about 120.000 inhabitants.

1.2. Economic profile

Historically, Abruzzo has always been a poor region. With its economy based on sheperds and poor, unspecialized agriculture it lived many decades of strong population migration between the end of 18th century and the end of 1960s.

In the reconstruction period after the II World War, it has been part of the Mezzogiorno, the South of Italy in which national governments concentrated public resources for regional development in building basic infrastructure for specialized agriculture and industry. Such a policy was relatively successful in Abruzzo, that lived two decades of strong industrial development in 1970s to 1980, and became one of the most industrialized regions in Italy.

The industrial structure of the region is a mix of large and medium branch plants of multinational enterprises in high technology, automotive and components industries, with also important local firms from one side, and of small and medium local enterprises in the "Made in Italy" (agrofood industry, textiles, clothing and accessories, etc.) and in building and construction sectors.

The most dynamic industrial sites are still now in the Adriatic part of region, where industrial districts of local SMEs and highly concentrated industrial areas, large branch plants of exogenous industries and small firms producing customized components live together in good synergy. In the internal Abruzzo, the three main industrial poles, with important branch plants of multinational sites in electronics and automotive industries, did not manage to generate such a synergy

As the rest of the country, Abruzzo is being experiencing substantial socioeconomic stagnation since the early 1990s. Despite that, its economic performance continues to stand significantly above the

Mezzogiorno average in term of activity rate, employment rate and GDP per capita, but outperforming those of central and Northern Italy.

This is also due to the relative development of tourism and commerce. Traditional tourism is still concentrated on the coast towns in summer and many important skiing sites in winter. In the last years, many public investments have been done on cultural, archaeological and historical sites, in natural parks, with an important differentiation of touristic targets. As a result, tourism is growing in parks and environmental interest places and in cultural sites, and it is becoming less seasonal, due to the proximity of big market basins, like Rome and Naples.

In the last ten years, a great effort of building investments has been done for internal Abruzzo region, which is struggling to recover from the devastating earthquakes that hit its capital city of L'Aquila and the surrounding area in 2009, 2016 and 2017.

This part of the territory is characterized by internal mountain, "areas subject to natural disadvantages" for the agricultural sector. Most of this territory is now protected for its naturalistic importance. This fact on the one hand this creates opportunities for tourism development and the offer of typical quality products, but on the other hand calls for policy actions to promote their economic integration in the rest of regional territory.

All the internal territories present elements of weakness and lack of integration of the productive system, insufficient levels of qualification of human capital and a substantial isolation from the large networks. Demographic impoverishment, aging of agricultural entrepreneurship, organizational and structural weakness of farms, lack of services for firms and population, low diffusion of broadband which creates a condition of significant infrastructural digital divide, are all elements which make the growth of these areas more difficult and call policy makers to an effort in improving the sustainability of local development, enhancing environmental heritage, increasing employment, reducing labor market imbalances and improving governance processes.

1.3. Transport infrastructures

The endowment of transport infrastructures in Abruzzo is quite satisfactory, even if compared with the one of Italian regions with similar characteristics.

The territorial design of infrastructure networks follows the morphologic lines of the territory. Abruzzo is crossed from West to East by two highways A24 Rome- L'Aquila-Teramo and A25 Rome-Pescara, and one railway Rome Pescara and the traditional State Steer 5 Rome Pescara. The last three follow, more or less, the same path along the old Tiburtina Valeria - State Road no. 5 (i.e. Strada Statale - SS 5).

Abruzzo is also touched on its coast and crossed from North to South by the Adriatic Highway A14, the Railway and SS 16.

RICOGNIZIONI

RETI INFRASTRUTTURALI DI TRASPORTO

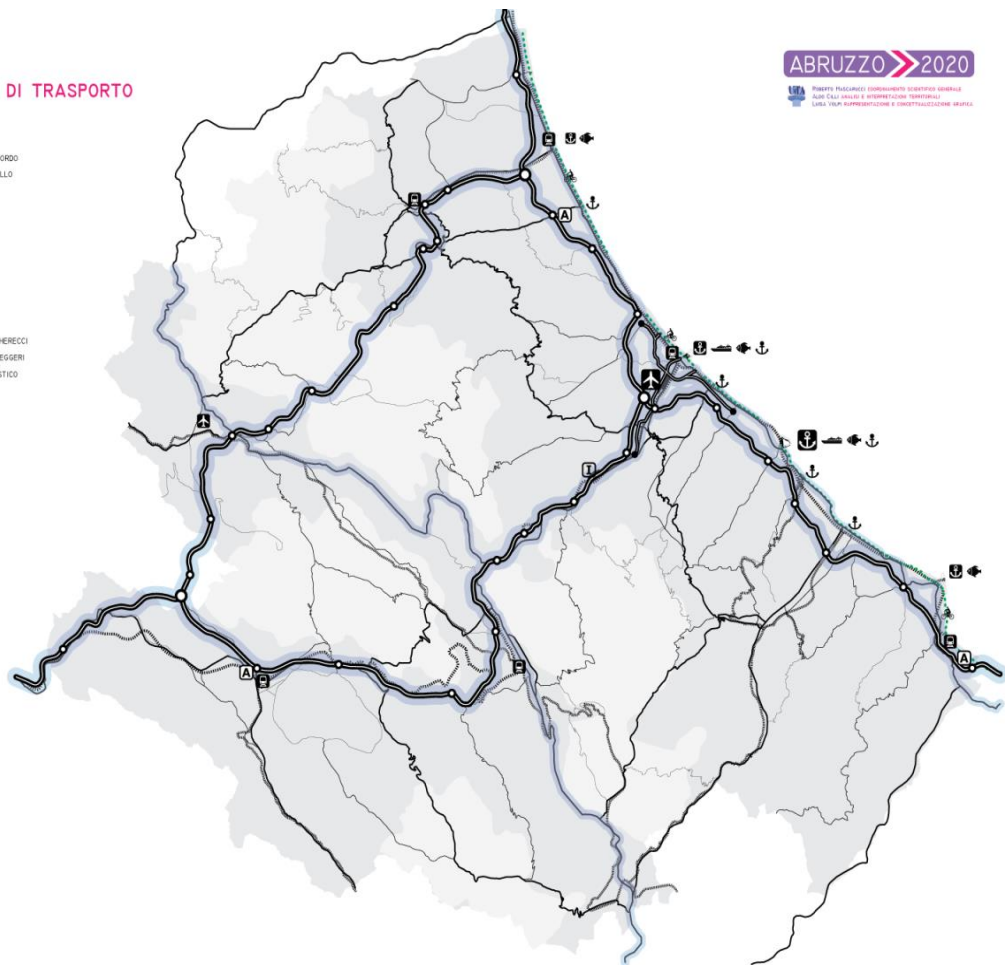


Figure 2: Transport main network infrastructures of Abruzzo (source Abruzzo 2020)

1.4. Transport investment in infrastructures

As part of the Abruzzo Region Development Pact for the 2014-2020 programming period, resources amounting to 753.4 million euro have been allocated for the implementation, among others, of interventions aimed at improving and completing road infrastructures, railway, port and airport, united by the intent to modernize and optimize the freight and people transport network, encouraging sustainable and integrated mobility.

As part of these interventions, although of interest here, with exclusive reference to the “infrastructure” priority axis, numerous strategic interventions aimed at modernizing and optimizing are highlighted, also in terms of environmental sustainability, both in the road network and in the road network. railway, as well as the completion and promotion of the network of cycle paths.

As far as the railway network is concerned, the Abruzzo Regional Development Pact has assigned resources for:

- modernizing and upgrading the so called Sulmona “suspender” (in Italian “bretella”) to connect the railway network
- speeding up of the railway connection between Pescara and Rome and doubling of the line between Pescara and Chieti
- connection between the Port of Vasto and the national railway network
- completion of the railway infrastructure serving the Port of Ortona
- completion of the Chieti trolleybus system
- construction of the funicular linking the city center of Teramo and the university campus
- realization of the funicular linking the center of the city of Chieti and the university campus.

As far as the road network is concerned, also in the service of the regional industrial system, the Pact for the South has provided resources for:

- expansion of the intermodal logistics plate of the Val di Sangro industrial area
- connection of the port of Ortona with the A14 motorway exit
- completion of the 4th lot of Teramo-mare
- adaptation of the “Mausonia” consortium road in the territory of the Municipality of L’Aquila (L’Aquila town bypass junction between Municipal Road i.e. Strada Comunale - S.C. “Mausonia” and SS 17 ter trunk road – L’Aquila-Navelli segment)
- construction of the overpass ramps for alternative roads to the Teramo-Mare railway underpass
- realisation, modernisation and redevelopment of the regional system of bus stations / facilities / areas serving the local public transport for the rubber-rubber and rubber-iron modal exchange (L’Aquila - Teramo, Mosciano S. Angelo, Vasto, Avezzano, Pescara, Lanciano, Montesilvano)
- extraordinary maintenance of the Fucense road.

Alongside the railway and road interventions included in the 2014-2020 programming, the projects funded under the 2007-2013 seven-year period, through the Regional Implementation Program of the Development and Cohesion Fund resources, including the *Bike to Coast* macro-project, are worth mentioning, as far as they are of interest. Thanks to such measures, Abruzzo Region has equipped itself with a coastal cycle path from the northern border of the Region to the South border (Martinsicuro (TE) - San Salvo (CH), for a total investment of 60,700,000.00 EU.

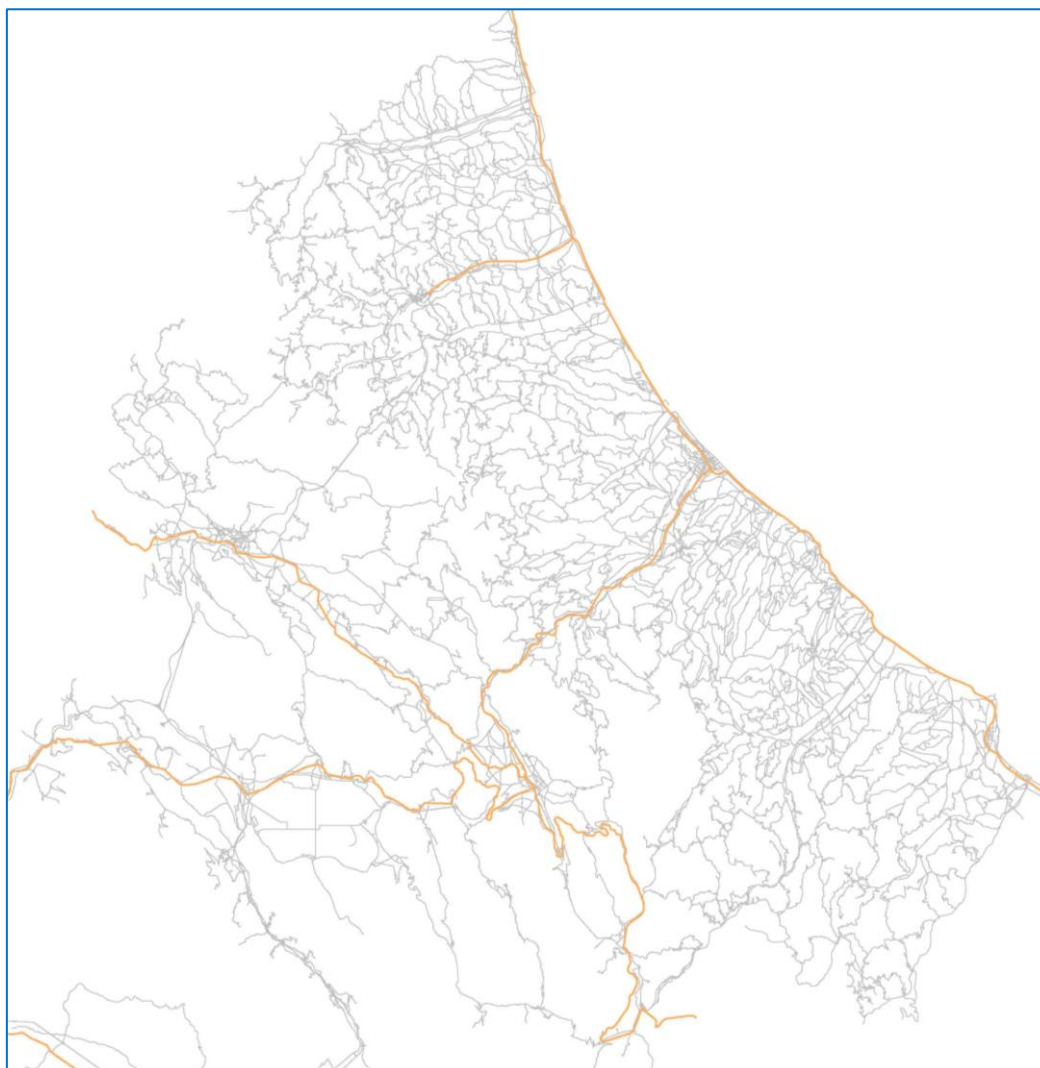


Figure 3: Transport detailed network infrastructures of Abruzzo (source Internet)

Province	Highways (1)	State Roads (2)	Region and Province Roads (3)	Municipal Roads (4)	Total ext. of Roads
	km	Km	Km	Km	km
Chieti	89	215	1.814,34	9.573	1.1691,34
L'Aquila	131	433	1.829,16	10.300	1.2562,16
Pescara	58	104	766,65	4.069	4.997,65
Teramo	89	238	1.511,24	5.762	7.600,24
Total	366	991	5.921,39	29.704	3.6851,39

TABLE 1: Distribution by province of the Highway road extension and other National, Regional, Provincial and Municipal Roads.

(1) Source: Provision of road infrastructure on the Italian territory "by the ACI – Automobile Club of Italy - Professional Statistical Area updated to 2011.

(2) Source: Provision of road infrastructure on the Italian territory "by the ACI – Automobile Club of Italy - Professional Statistical Area updated to 2011 and e directly cross-checked with ANAS S.p.a. (National Road Organization) Abruzzo Compartment data.

(3) The overall extension of the roads of Regional interest (source Regional Integrated Transport Plan, 2011) amounts to Km.1.286,41. Data relating to the extension of the provincial roads (Regional roads and provincial roads), km. 5,921.39, have been inferred from the statements of the Provincial Roads sent by the four Provinces of Abruzzo. From the difference between the total extension of the provincial roads (Regional and provincial roads) Km 5,921.39 and the roads of Regional interest, Km.1.286,41, it can be deduced that the roads of provincial interest extend for Km .4.634,97

(4) Source: "Regional plan for the planning of forecasting activities, prevention and active fight against forest fires", Part One, Years 2011-2012.

Province	Municipal Roads Km
Chieti	176
L'Aquila	3.800
Pescara	790
Teramo	1.000
Total	5.766

TABLE 2: Extension of municipal roads in the provincial capital municipalities - Year 2011

Source: Elaboration from Ministry of Infrastructure and Transport data on a survey conducted in the Municipalities Province-Capital and Autonomous Provinces - Tab. V1.1.5A National account Infrastructure and transport 2012 (Cnit 2011 -2012).

1.5. Population, settlement and urban poles

After the economic boom of 70s and up to 90s, when Abruzzo population grew, in the last two decades the demographic balance of the Region showed a slight positive growth rate, with a reduction in natural dynamics offset by the positive migration. This second component has been prevailing since the beginning of the 2000s, when foreign workers started to come to the Region, growingly employed in family assistance for elderly persons or persons with disabilities and also in construction sector and as seasonal employees in agriculture.

The increase of ageing of population and the reduction of birth rate and young population for temporary migration to other regions for example for study reasons, determined that the level of substitution among generations gradually became imbalanced between the elderly and the young, a crucial aspect in the productivity. The ageing rate reached 1.76 in Abruzzo in 2015 – which means that in the Region there are more than 176 over 64-year-olds for every 100 people under the age of 15.

At the same time, people moved toward the sites of economic and social activities, generally located in the main cities and along the coastal areas, which also became the centre of services, both basic such as health and education, and advanced, such as technology.

These changes gradually created a strong *dualism* in territorial distribution of population.

In the internal Abruzzo, population concentrates only in a few main centres, located in the three main plateaus and heart of the main economic and administrative activities: i.e. L'Aquila, Avezzano and Sulmona. In this area, considered as a whole, which suffered economic stagnation over the last decades, a combination of factors such as low population density, increasing ageing and low birth

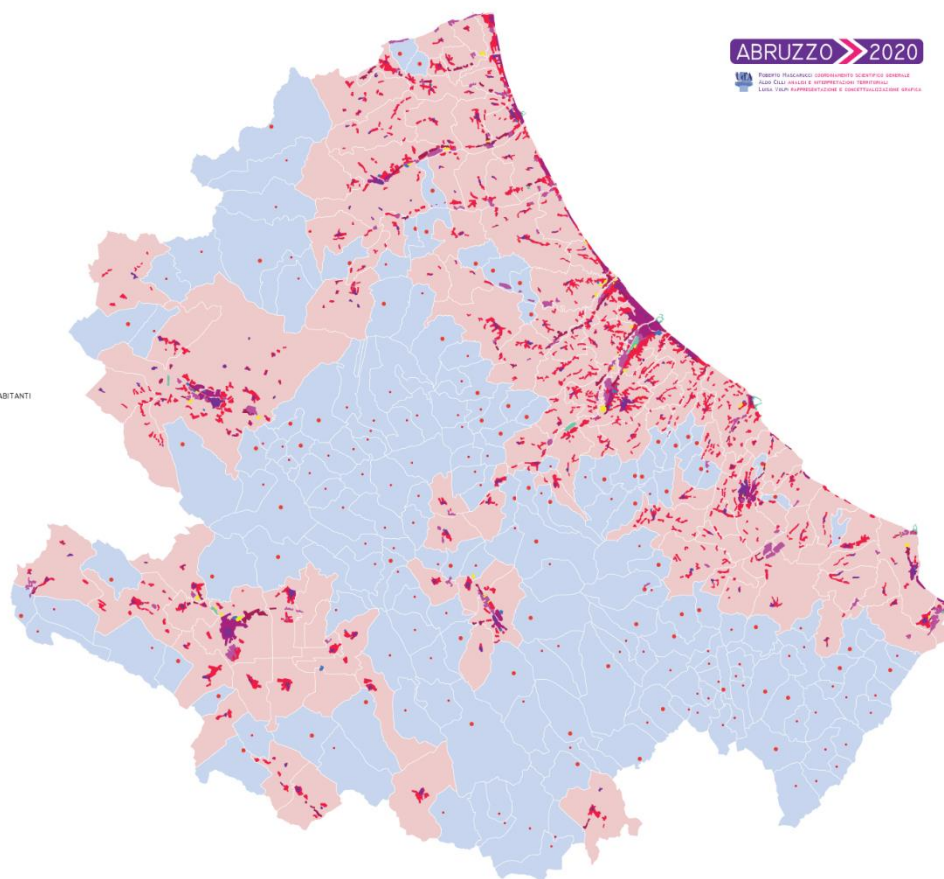
rate, generated outcomes in the need for renewed health services and/or the adaptation of existing ones.

Towards the Adriatic, hills and coastal areas, Abruzzo Region, on the contrary, has a growing rate of population and this causes a higher demand of services and/or an increased use.

Therefore, in general, it should be noted that in Abruzzo Region, towns with population over 20 thousand inhabitants are only 14 out of 305. Figure 4 shows the resident population and its density by Municipality in 2016 and gives an idea of the relative dispersion of the population on the entire regional territory. The figures also show how the population thickens in coastal municipalities and hill, and along the lines of the main rivers.

RICOGNIZIONI
SISTEMA INSEDIATIVO

- TESSUTO URBANO STORICO
- ESPANSIONE DELL'INSEDIAMENTO STORICO
- INSEDIAMENTO DENSO COMPATTO DI RECENTE FORMAZIONE
- INSEDIAMENTO DI FONDIVALLE O LUNGO STRADE MERCATO
- INSEDIAMENTO PRODUTTIVO
- INSEDIAMENTO COMMERCIALE
- GRANDE ATTREZZATURA
- PORTO/AEROPORTO/INTERPORTO
- COMUNI CON POPOLAZIONE SUPERIORE AI 2000 ABITANTI
- COMUNI CON POPOLAZIONE INFERIORE AI 1000 ABITANTI
- COMUNI CON POPOLAZIONE COMPRESA TRA I 1000 E I 2000 ABITANTI



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Figure 4 – Settlement system in Abruzzo (source: Abruzzo 2020)

1.6. The demand for mobility

Daily commuting in Abruzzo

The analysis of systematic mobility for study and work – daily commuters – carried out by ISTAT¹ using census data (2011) as elaborated by the Statistics Office of the Abruzzo Region (see Abruzzo Region - Sistan, 2016) – shows that in Abruzzo a population of 601,776 (i.e. 46% of total residents) move daily to the place of study or work. Two thirds of them (399.409, that is 66%) moves daily for work reasons, one third (202,637) for study.

A large majority of commuting (360,944 people 60% of the systematic trips) in Abruzzo takes place within the same municipality (urban mobility). On the other hand, the daily systematic trips to a city different from the origin one (suburban or extra-urban mobility) are 240.832 (40% of the total).

	Within the same municipality		Toward another municipality		Total		
	Study	Work	Study	Work			
L'Aquila	88.695	31.716	56.979	44.703	32.531	12.172	133.398
Teramo	84.722	33.550	51.172	59.482	14.541	44.941	144.204
Pescara	83.130	35.912	47.218	63.670	15.436	48.234	146.800
Chieti	104.397	42.426	61.971	72.977	16.614	56.363	177.374
Abruzzo	360.944	143.604	217.340	240.832	58.763	182.069	601.776

TABLE 3 - Systematic mobility in the provinces of Abruzzo: number of trips by reason and destination

Source: Elaboration of data from surveys available on Internet.

Three quarters of the extra-urban systematic trips (182.069 equal to 75.6%) are for work reasons and about a quarter (58.763, equal to 24.4% of the total) for study; this percentages are different if we consider urban movements: 143,604 of them (39.8% of the total) are for study and 217.340 (60.2%) for work.

Systematic trips in Abruzzo take place mainly with private means of transport. Transport by private cars, buses or other means involves 404,838 people (67.3% of the total). The percentage, which is growing in recent years, is also higher than the national one, and is substantially uniform in all the provinces of Abruzzo (oscillating between 65.7 and 70%),

¹ ISTAT (Istituto Nazionale di statistica) is the Italian National Institute of Statistics, a public research organisation that provides all national official statistics, included national Censuses. It promotes the study and development of statistical methods and data operating in complete independence and interaction with the academic and scientific communities.

Commuters using daily public transport are only 70.025, that is a very small number, both in absolute and in relative terms (11-12% of total commuters).

	Buses, rail vehicles	Private bus (corporate or school)	Private car (as driver)	Private car (as passenger)	Bike or on foot	Other means	Total
Absolute values							
L'Aquila	16.387	5.005	69.207	24.486	17.596	658	133.339
Teramo	16.900	11.707	75.219	19.553	18.362	2.446	144.187
Pescara	15.477	7.088	73.025	25.036	21.765	4.369	146.760
Chieti	21.261	8.979	90.230	28.082	25.500	3.239	177.291
Abruzzo	70.025	32.779	30.761	97.157	83.223	10.712	601.577
Percentage values							
L'Aquila	12,3	3,8	51,9	18,4	13,2	0,5	100,0
Teramo	11,7	8,1	52,2	13,6	12,7	1,7	100,0
Pescara	10,5	4,8	49,8	17,1	14,8	3,0	100,0
Chieti	12,0	5,1	50,9	15,8	14,4	1,8	100,0
Abruzzo	11,6	5,4	51,1	16,2	13,8	1,8	100,0

TABLE 4 - Systematic mobility in the provinces of Abruzzo by transport means used.

Source: Elaboration of data from surveys available on Internet.

Not surprisingly – as we saw through data on population density, spread of cities, dimensions and number of commuters – a large part of regional territory is characterized by weak demand for mobility².

As shown in Figure 6, that is the mirror of Figure 5, the area of weak demand - the red municipalities – include all peripheral, mountainous areas of the Apennine and some small towns in the internal valleys of coastal hills.

² We refer here on the administrative definition of “*weak demand*” based on the criteria set forth in Annex 2 of the Authority for Regulation of Transport (ART) 48/2017. These parameters refer to the “temporal, subjective and socio-economic territorial characteristics” of the potential user, and have to be identified by the Resolution (period 2 of Measure 2) according at least to 4 parameters - a) population density; b) degree of urbanization; c) age of the resident population; d) altimetric altitude” - defined, where possible, “at the level of the general census section of the population and of the dwellings and the related elaborations of the National Institute of Statistics”

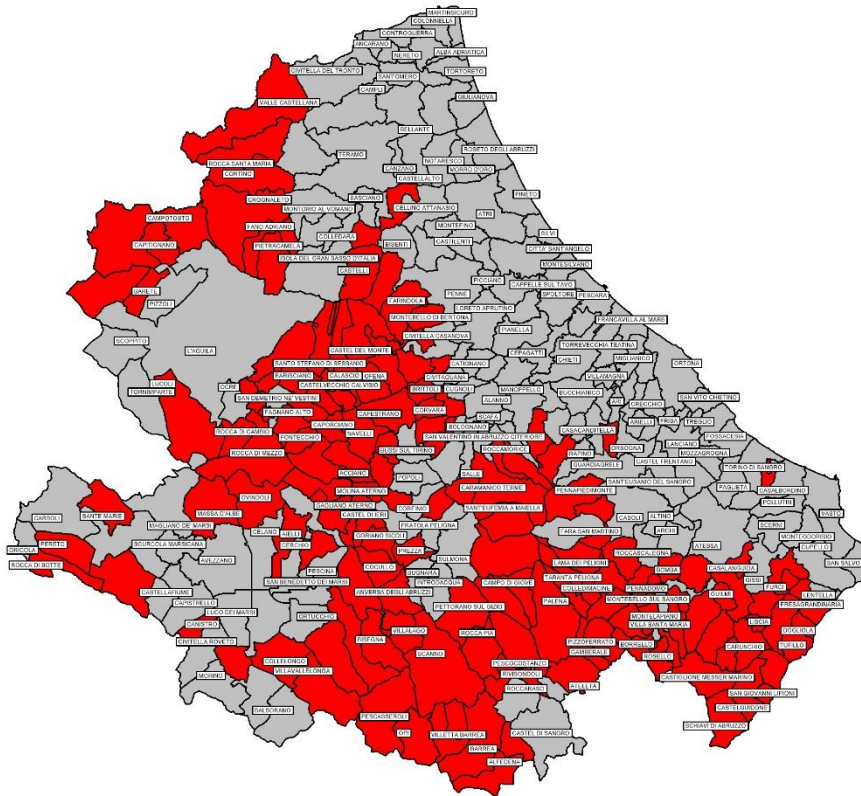


Figure 5 – Weak demand area

In the rest of the Region (the grey area in Figure no. 5), 1,7 million persons (77% of the regional population) live and work.

In this area, that include all medium and small cities, there are more than 471 thousand daily commuters (almost 80% of the total commuters – which is 601 thousands).

The weak demand area is a great challenge for LPT (Local Public Transport) because offering the service without considering its highs and lows means not to be able to cover the costs and to optimise the service by customizing it to the real demand of the territory requires a deep knowledge of the population and needs assessment preliminary evaluation.

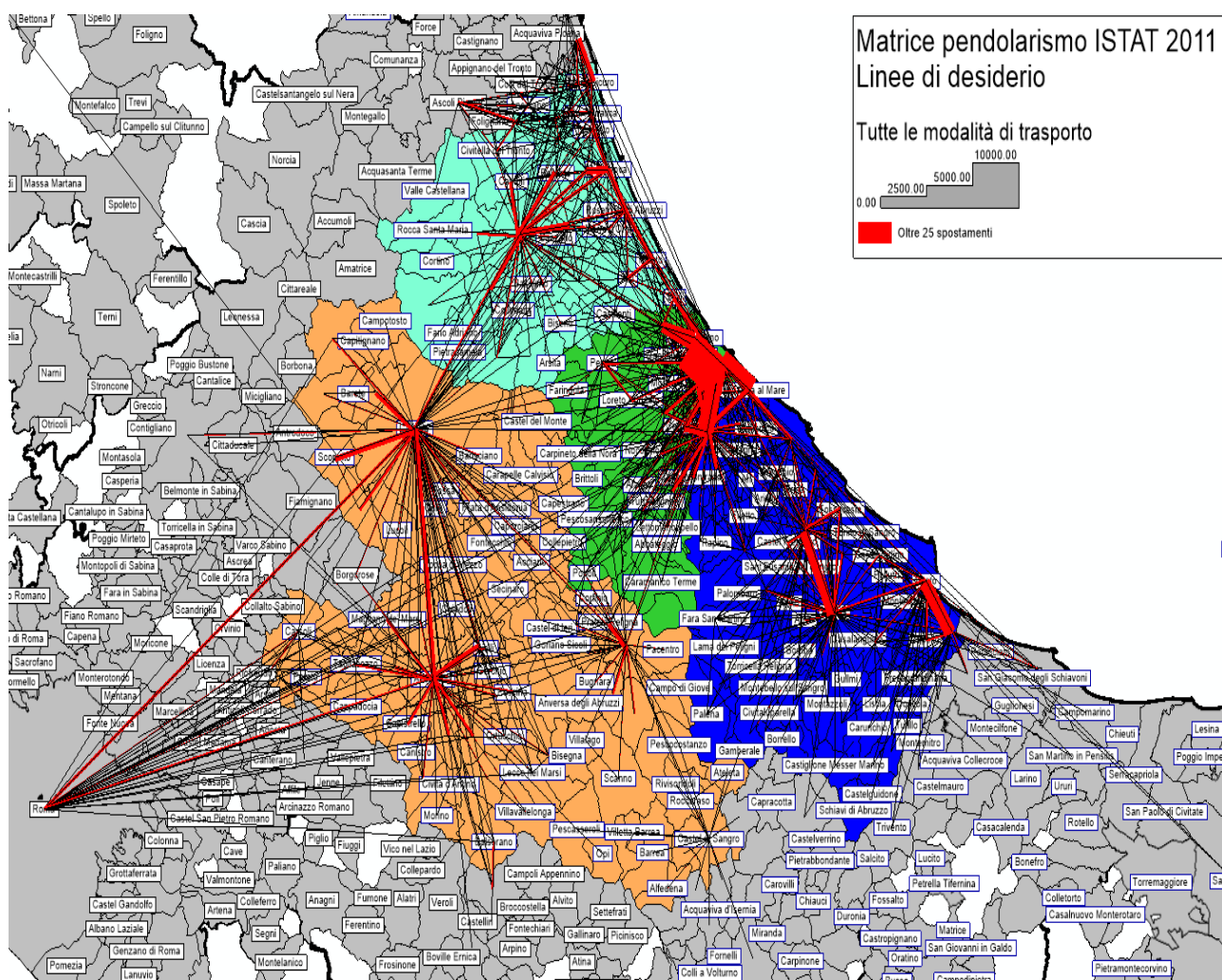


Figure 6 – “Wish lines” (in Italian Linee di desiderio) and demand of mobility

Commuting Model and the Mobility Basins

The above commuting model can be effectively summarized by the definition of Local Labour Systems (LLSs) or Local Labour Areas (LLAs)³, based on which local planning has recently defined the operational concept of *Mobility Basins*.

In Abruzzo, ISTAT defined 18 Local Labour Areas - LLAs, 6 of large size (over 100 thousands inhabitants), located in the 4 provincial capitals and main industrial sites (L’Aquila, Avezzano, Teramo, Pescara, Chieti,

³ Recent Regional transport planning makes use of Local Labour Systems or Local labour Areas (LLAs) calculated by ISTAT, the National Institute for Statistics. LLAs are defined starting from the concept of *systematic mobility* or commuting, and describe functional areas shaped by the daily flows of commuters for work and study reasons. This definition is also strongly coherent with the administrative definition of mobility Basin given by the National Authority of Transport Regulation (ART) in its Act no. 48/2017.

Atessa); 7 of medium size (40 to 70 thousands of inhabitants, located around medium cities (Sulmona, Penne, Vasto, Teramo area, Martinsicuro, Giulianova, Pineto); 5 SLLs Small Local Labour markets in the provinces of L'Aquila and Chieti (Celano, Castel di Sangro, Pescasseroli, Guardiagrele, Ortona, San Salvo).

Following the geomorphological characters of territory, interactions and their historical cultural dimension, size and territorial proximity, these systems can be grouped into 8 Mobility Basins.

Table 4 shows, for each of them, the main structural features - number of municipalities, population and commuting flows.

Basin	Number of Communes	Total Population 2011	Number of flows			(B) / (a) *100
			Total flows (a)	Internal to the poles (urban)	Internal to the system (b)	
L'Aquila	32	96.422	53.655	29.256	42.892	79,9
Avezzano	35	125.993	45.805		33.860	73,9
Sulmona - Alto Sangro	42	78.254	24.415		19.637	80,4
Val Vibrata	13	78.384	24.913		13.118	52,7
Teramo	26	178.875	68.438		45.779	66,9
Area Chieti-Pescara	69	504.024	190.345		117.825	61,9
Atessa-Lanciano	58	144.494	53.168		37.039	69,7
Vasto-San Salvo	28	94.775	38.013		21.243	55,9
Abruzzo Region	305	1.301.221	498.752		331.393	66,4

TABLE 4 - Urban systems/Mobility basins (as LLSs revised) and their structural characters

Source: Elaboration of data from ISTAT survey 2011 available on Internet.

Each basin is characterized by its specific mobility needs and urban /rural configuration and interaction model.

From this point of view, three models can be outlined.

Model 1 - Internal and Southern Abruzzo: polarized systems

The 3 local urban systems of internal Abruzzo (L'Aquila, Avezzano and Sulmona-Alto Sangro) have a strongly polarized model of interactions between small towns and their cultural, educational, economic and tertiary poles activities (with population among 70 thousands and 25 thousands and the towns and the local basins are strongly self contained (closed systems).

These systems, especially the first two, also show a strong mobility demand toward Rome.

At the same time, in two systems of Southern Adriatic Abruzzo (Atessa-Lanciano and Vasto-San Salvo), the borders of such urban system are the same. It is clear that, in the case of Local Labour Systems near L'Aquila and the Val di Sangro area, the geomorphological structure and in particular the orography of the territory has been performing a crucial role in the past, as well as at the present times, in shaping the relationships among urban centres.

Southern Abruzzo counts on 2 Local Labour Systems, characterised by a strong industrial presence around the two industrial sites of Vasto - San Salvo and Atesa. In these two systems there is a strong interaction between the two main poles.

Model 2- Adriatic Abruzzo: diffused systems

The situation on the coast and on the coastal hill is extremely varied, in which the LLS have a considerable degree of opening and a system of strong reciprocal interrelations, which is evident by the high percentage of flows in-and-out and the relatively low weight of the internal movements, that, however, becomes relevant when considered in absolute terms.

Northern Coastal area is defined by the local basins located along the coastal line and the hill area from the Adriatic Sea westbound to the Apennines at the North of Pescara. There are medium sized cities between 40 to 60 thousand inhabitants that can be grouped by such characteristic; all coastal cities between 10 and 25 thousands inhabitants show a strong interaction between centres, and diffused polarisation due to the economic structure of strong agricultural vocation, small and medium industrial enterprises and wide diffusion of tourism activities.

The Municipalities of Martinsicuro (a system of 9 Municipalities of the Val Vibrata), Giulianova (4 Municipalities of the lower Valle del Tordino, plus Roseto), Pineto (the 3 municipalities of Cerrano) are all intertwined and, due to the intensity of relations, are also placed in continuity by one side with the Teramo system (which includes the 21 remaining hilly Municipalities of the province of Teramo, for a total population of 110 thousand inhabitants, strongly connected with Giulianova on the axis of the Tordino River) and above all, for intensity of relations, with LLS of the Pescara valley.

The Local Labour System of Teramo handles an internal flow for 30,429 units (which constitute approximately 73.5% of the flows) and an external flow in-and-out, with a balance of approximately 5 thousand and 500 units. The LLS privileges relations with the area of LLS of Giulianova (about 3 thousand flows per day from Teramo and about 2,500 from Giulianova to Teramo) and Val Vibrata (to and from Martinsicuro a thousand and approximately 800 units flows).

The LLS of the Teramo coast have very high values of potential demand, and strong reciprocal exchanges of workers. The Martinsicuro LLS, which includes 9 Municipalities in the Val Vibrata, exchanges 13,118 workers a day, is very open to the outside of the Region, but in strong connection with the Teramo and Giulianova systems. The latter, with only 5 Municipalities and more than 15,000 daily internal movements, presents a high interaction rate with the LLS of the south (Pineto, Penne, Pescara, which together absorb 91% of travel). A similar degree of openness characterizes the LLS of Pineto (3 Municipalities of Atri, Pineto and Silvi) with respect to the area of Pescara and Teramo, where 50% of daily trips are directed.

Model 3 - Regional metropolitan area and system of Chieti - Pescara

The latter, in turn, include the two large LLS of Pescara (9 Municipalities of the Pescara conurbation for 252 thousand inhabitants), of Chieti (37 Municipalities in the so called Theatine area to the right of the Pescara River for 133 thousand inhabitants). That large area, with strong internal exchanges, is interrelated with small-medium LLS (between 30 and 40 thousand inhabitants) of Penne (14 Municipalities in the so called

Vestina area, to the left of the Pescara River), of Guardiagrele (21 Municipalities of the Majella Orientale) and Ortona (6 Municipalities). These systems are relatively “closed” in terms of internal flows, but have a strong outgoing flow of workers to the Municipalities of the two large-scale labor markets mentioned above (Pescara and Chieti), suggesting a role of satellite systems with respect to the latter.

Overall, the LLS of the coastal Municipalities and of the Pescara valley constitute areas of very high and medium-high population density: the former experienced a period of strong population growth in the 2000s (population growth rates of between 5 and 10) %, compared to a reduction at the regional level and in each of the 4 provinces - are LLS with a low degree of polarization, or with a productive structure characterized by relatively widespread economic activities in the territory and very intense commuting relations towards relatively dispersed poles on the territory.

Relevant characteristics for the purposes of transport planning are high mobility and interchange between one and the other of these five LLSs (the middle three of Teramo and the two large ones of the Pescara-Chieti area) and between them and the three medium-small size satellite systems (Penne, Ortona, Guardiagrele).

The area of Pescara is obviously a unique case in the regional panorama. The Local Labour System of Pescara has more than 252 thousand 700 inhabitants, and is composed of 9 Municipalities of the Pescara conurbation, (in addition to Pescara, from Cappelle sul Tavo, Città Sant’Angelo, Montesilvano, Moscufo, Spoltore, Pianella, Francavilla al Mare and San Giovanni Teatino), all connected in continuity by urbanization and by about 64 thousand daily movements inside the system (67% of the total movements, a relatively high percentage compared to the “open” systems of the coastal area).

Of the more than 31,000 daily journeys leaving LLS, almost 90% are oriented towards the neighboring LLS of Chieti (about 7,500), Penne (around 3,000), Ortona and Pineto, confirming the strong belt that binds the entire conurbation coastal with the Val Pescara. Chieti LLS is composed of 37 Municipalities on the left of Pescara River, between Majella and Morrone mountains, the river and the inner land, for a total of over 133.600 inhabitants. Most of the movements leaving the system go towards Pescara and the LLSs of Ortona Guardiagrele and Penne.

In conclusions, some general features of mobility demand can be summarised as follows:

- ✓ there is high demand for urban mobility, particularly in medium and large cities (over 20 thousand inhabitants). As seen (table 1), at the urban level concentrates about 361.000 (60%) of the total regional commuting, mainly (84%) in municipalities over 20 thousand inhabitants;
- ✓ there is a strong demand for interregional mobility to Latium, due to daily flows of students and workers towards Rome;
- ✓ in the internal area of the Region (L’Aquila province and the Appenines area), there are long and short distance flows toward the main poles (L’Aquila, Avezzano and Sulmona); and, in the northern to Teramo;
- ✓ in the whole coastline, there is a strong interaction between all centres, where there is a cluster system of poles and industrial and tertiary activities;
- ✓ a very strong and complex interaction sistem of short daily mobility flows in the central “regional metropolitan area” Chieti-Pescara, where about half a million people live;

- ✓ In the southern part of the region there are strong interactions from internal areas towards the main industrial poles (Atessa and Vasto-San Salvo) and between them and tertiary complementary poles (Atessa and Lanciano, San Salvo and Vasto).

3. Public transport

3.1. Sustainable Urban Mobility Plans – SUMP in Abruzzo Region

The Urban Sustainable Mobility Plan (SUMP in Italian PUMS) is a strategic planning tool established by art. 22 of the law no. 340 of 24 November 2000, which, in a medium-long time period (10 years), develops a vision of urban mobility system, proposing the achievement of environmental, social and economic sustainability objectives through the definition of actions oriented towards improve the effectiveness and efficiency of the mobility system and its integration with urban and territorial development and developments.

This new approach to strategic planning of urban mobility takes as a reference basis the “Guidelines. Developing and Implementing a Sustainable Urban Mobility Plan”, approved in 2014 by the European Commission’s Directorate-General for Mobility and Transport (Eltis, Bruxelles January 2014) and it is in line with what is expressed in the Annex “Connecting Italy: infrastructure needs and projects” to the 2017 Economic and Financial Document. The decree of 4 August 2017 of the Ministry of Infrastructure and Transport - MIT, published in the Official Journal n. 233 of 5 October 2017, contains the guidelines for the preparation of SUMP throughout the national territory, according to the provisions of art. 3, paragraph 7, of Legislative Decree no. 257 of 16 December 2016; the application of such guidelines is an unquestionable prerequisite for access to state financing of infrastructures for mass rapid transport.

The guidelines include:

- a) a uniform procedure for the preparation and approval of the SUMP;
- b) the identification of the reference strategies, the macro and specific objectives and the actions that contribute to the concrete implementation of the strategies, as well as of the indicators to be used for verifying the achievement of the SUMP’s objectives.

The four areas of interest of the SUMP and the relative minimum mandatory macro-objectives that Cities will have to pursue include:

A. Effectiveness and efficiency of the mobility system

- ✓ A1. Improvement of local public transport;
- ✓ A2. Modal rebalancing of mobility;
- ✓ A3. Congestion reduction;
- ✓ A4. Improving the accessibility of people and goods;
- ✓ A5. Improvement of the integration between the development of the mobility system and the planning and development of the territory;

- ✓ A6. Improvement of the quality of road and urban space.

B. Energy and environmental sustainability

- ✓ B1. Reduction in consumption of traditional fuels other than alternative fuels;
- ✓ B2. Improvement of air quality;
- ✓ B3. Reduction of noise pollution.

C. Safety of road mobility

- ✓ C1. Reduction of road accidents;
- ✓ C2. Significant decrease in the general number of accidents involving deaths and injuries;
- ✓ C3. Significant decrease in social costs resulting from accidents;
- ✓ C4. Significant decrease in the number of accidents with fatalities and injuries among weak users.

D. Socio-economic sustainability

- ✓ D1. Improvement of social inclusion;
- ✓ D2. Increased satisfaction of citizenship;
- ✓ D3. Increase in the employment rate;
- ✓ D4. Reduction of mobility costs (connected to the need to use the private vehicle).

Although SUMPs are prepared on a ten-year time horizon, their updating is carried out at least every five years and they are also subjected to a two-year monitoring, aimed at identifying any deviations from the objectives set and the related corrective measures, in order to verify consistently the compliance of the actions undertaken with the indicators of achievement of the objectives.

The procedural steps necessary for the preparation and approval of the SUMP:

- a) Definition of the interdisciplinary / inter-institutional working group;
- b) Preparation of the cognitive framework;
- c) Start of the participated path;
- d) Definition of objectives;
- e) Participatory construction of the Plan scenario;
- f) Strategic environmental assessment (Vas);
- g) Adoption of the Plan and subsequent approval;
- h) Monitoring.

In the context of mobility planning at the municipal level, hierarchically placed under the SUMP, the UTPs (Urban Traffic Plans) deserve a special mention, different from the instrument in question but strongly interacting with it. If SUMP deals with mobility problems requiring “investments”, financial resources and technical times for realization, as well as the implementation of complex and intersectoral urban / metropolitan policies, the UTP is essentially a management plan, a short-term plan.

From this point of view, SUMP's identify criticalities to be addressed by UTPs and need to be revised when available infrastructures change. The SUMP may also include interventions in variant to existing urban planning instruments that will be updated according to law procedures. In case the Administrations approves the SUMP following the procedures for the approval of the urban / territorial Plans, it is configured as a variant to be implemented in the existing instruments. The SUMP's procedure includes also a public participatory process in order to involve all stakeholders in defining the objectives.

As far as the main Abruzzo cities are concerned, all main cities have adopted SUMP's:

- ✓ Pescara – adopted 2017
- ✓ L'Aquila – adopted 2018
- ✓ Teramo - in adoption 2018/19
- ✓ Chieti – in adoption 2018/19

More in detail, **PESCARA** was the first Abruzzo City to adopt its own SUMP by Municipal Council Resolution no. 358 of 01/06/2017. The strategic guidelines for the urban reorganization of the City contained in the SUMP aim at increasing the efficiency and cost-effectiveness of the transport of people and goods, in order to guarantee adequate accessibility to jobs and urban services, while reducing the causes of air pollution and increasing the safety level of the urban context. The SUMP of the City of Pescara provides for the creation of an electric trolleybus system on its own, the integration between private motorized mobility and public transport, the establishment of large areas with conditioned traffic (pedestrian areas, zones 30, restricted traffic areas, in Italian ZTL: Zona a Traffico Limitato), the development of a cycle lane and network, the creation of a certification and exchange parking system and, finally, the development of urban micro-logistics. The achievement of a progressive reduction of the share of motorized private traffic over the total is ensured by a more efficient and hybrid/electric public transportation system (trolley lines). Along these lines is the provision of integrating public transport and cycling through systems that favor the transport of bicycles in the urban buses, as well as the complete transposition and implementation of the provisions of Regional Law no. 8/2013 ("Interventions to promote the development of cycling mobility"). Another direction of the SUMP is creating systems to promote an efficient city logistic through alternative systems to the traditional vans that carry out door-to-door deliveries. Solutions like "cycling", i.e. bike messenger and pedal-assisted cargo-bike are encouraged. A series of 6 strategic indicators are set for measuring the impact of the implementation of the measures envisaged by the SUMP: 1. trips made by bike, 2. average commercial speed of public transport, 3. overall extension of cycle paths, 4. days in the year of exceeding the fine dust limit, 5. overall extension of limited traffic areas, 6. number of urban road accidents.

L'AQUILA, the regional Capital, has approved its SUMP by City Council Resolution no. 327 of 16/07/2018. Mobility transport planning plays a central role in the urban strategy of the City and therefore the document considers all peculiarities typical of the City, also deriving from the 2009 earthquake, whose consequences caused a severe distortion of urban mobility imposing to redesign the entire infrastructural and organizational structure of the city transport system. The new settlement structure, distinctly multipolar, is the result of the realization of a huge and varied real estate system called Progetto C.A.S.E. and M.A.P., located throughout the municipal territory.

All services, public offices, schools and universities as well as commercial and recreational activities were also affected by the earthquake and local public transport services had to readapt consequently.

In Teramo and Chieti adoptions are ongoing at the time of the present Report.

TERAMO as a City has to address both its specific needs of a strong student population and also, as already mentioned, a rather intense Local Labour System activities, but also it needs to focus on functional redevelopment of the Roman Theater and enhancement of its archaeological area.

In planning terms, such priorities are tackled in models, approaches, and methods that include introducing soft measures for the promotion of bicycle use, and to implement the urban cycle network (so called Bi-ciplan). The SUMP final approval process is ongoing and the Municipality of Teramo is also adopting a series of concrete measures for sustainability: installation of a network of sensors for monitoring air quality and purchase of new low-emission buses; creation of “smart” stops in order to improve public transport services, and promotion of alternative mobility solutions, by new cycle lanes, paths and stations with e-charging points for bicycles and electric cars. This activities are all addressed in the SUMP that is under development also within the participatory process foreseen by law.

In recent years, the Municipal Administration of **CHIETI** has implemented numerous projects with specific objectives, mainly using community and regional financial channels, for example by purchasing, since 2011, new trolleybuses serving the largest and most “green” public transport line in Abruzzo. In order to pursue the gradual elimination of all oil-fired boilers serving the city’s schools, a programme has been launched for transforming them into methane. The SUMP is along the lines of the Sustainable Urban Development Programme, which granted a loan (Regional Implementation Plan of European Regional Development Funds 2014-2020) for the purchase of 14 Euro 6 buses, the installation on the entire city of assisted bike stations with electric motors, vehicle charging stations, together with other eco-sustainable projects. All measures are coordinated by the Urban Strategic Plan and the SUMP, characterized by eco-environmental sustainability, future-proof.

3.2. Data on usage

A series of Tables below show a synthetic view of transport coverage, needs and usage by several indicators. The aim is to show with data what is the actual functioning of the Public Transport System of the Region.

In Abruzzo Region, public transportation services are quite different from more homogenous territories, according to the peculiarities of a coastal line far more traffic intensive than the internal areas, except the L’Aquila – Roma line that, in terms of services, is similar to a metropolitan line than an interregional one. As national and regional contribution for local public transport is continuously decreasing, most of the services need rethinking according to the difficulties in funding resources, and this implies new ways of providing services that are able to remain at the same level of users’ expectations and to comply with economic efficiency requisites.

Although the set of data available below is outdated, it is however significant to give an outline of the long-term trend of public transport usage in the Region, in comparison with the national framework. The tables are also to be compared with data from the Report on environment in 2018, which is being addressed further on in this Study.

	Year											
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Abruzzo	2,4	2,3	5,7	5,6	5,4	5,3	21,2	21,2	21,1	17,4	22,9	32,5

TABLE 6: Equipping parking lots in the provincial capital municipalities (number per thousand cars circulating) - these are parking lots located near stations or stops of local public transport or rail transport, to facilitate intermodality.

Source: Elaboration of data from ISTAT survey 2011 available on Internet.

Municipalities province Capitals	Anni											
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
L'AQUILA	70,7	69,9	64,4	61,7	61,5	60,5	66,8	69,7	65,6	44,8	48,2	48,9
TERAMO	45,8	45,9	46,9	46,2	45,7	45,8	45,3	44,5	43,8	43,7	43,7	34,6
PESCARA	63,0	63,5	62,5	62,7	64,2	67,7	69,4	73,4	73,2	73,1	77,9	80,8
CHIETI	75,5	81,2	82,1	86,8	85,0	82,6	85,1	85,8	91,2	91,2	67,4	76,2
REGION	64,2	65,2	63,7	63,8	64,0	65,0	67,5	69,6	69,3	64,3	62,8	64,1

TABLE 7: Passengers transported to the provincial capital cities per inhabitant and average on a regional basis (passengers transported by bus, tram, trolleybus, underground and funicular, as well as other modes of urban public transport such as vaporetto, escalator, lift, etc.).

Source: Elaboration of data from ISTAT survey available on Internet.

	Years											
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
ABRUZZO REGION	3,0	3,0	3,0	3,0	2,9	2,8	2,9	2,9	2,8	2,9	3,1	3,1
ITALY	4,5	4,7	4,8	4,8	4,8	4,8	4,8	4,9	4,9	4,9	4,9	4,7

TABLE 8: Places per km offered by Local Public Transport in the Province Capitals (given on a regional basis and comparison with national data).

Source: Elaboration of data from ISTAT survey available on Internet.

Data REGION	Years											
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Female	23,8	25,4	22,4	23,9	-	24,9	21,0	22,4	24,9	23,2	23,1	24,9
Male	15,0	15,4	13,9	15,0	-	15,4	16,4	14,7	12,7	9,5	15,8	15,6
TOTAL	18,4	19,5	17,4	18,6	-	19,2	18,3	17,8	17,7	15,6	18,9	19,6

TABLE 9: Use of public transport means Abruzzo

Source: Elaboration of data from ISTAT survey available on Internet.

The reference population is composed of: employees aged 15 and over, students up to 34 and nursery school students who leave home to go to work, university or school.

Data ITALY	Anni											
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Female	26,2	24,5	25,3	24,7	-	25,5	24,1	25,0	25,2	24,5	24,4	24,6
Male	15,4	15,0	14,5	14,8	-	14,5	14,9	15,6	14,9	15,2	15,8	15,3
TOTAL	19,7	18,9	18,8	18,9	-	19,0	18,7	19,5	19,2	19,1	19,4	19,3

TABLE 1: Use of public transport vehicles Italy.

Source: Elaboration of data from ISTAT survey available on Internet.

	Buses	Bus - Km	Average annual distance	Seats offered	Travelers transported Seats	Places - Km served
Urban Services	433	14.259.987	32.933	35.391	33.545.818	1.208.452.902
Extraurban Services (1)	987	40.892.598	41.431	64.693	23.933.558	2.742.662.609

TABLE 2: Local public transport (bus services) Urban and extra-urban service - Main traffic data - Year 2011.

Source: Processing data of the Ministry of Infrastructure and Transport on a survey conducted at the companies - Tab. V.5.5A National account Infrastructure and transport 2012 (Cnit 2011 -2012).

(1) Extra-urban service includes data passengers, Km transported which appear to be in 2011 a total of 529.551,598.

Number of employees (classes)						
Total	1-5	6-10	11-20	21-50	51-100	Oltre 100
42 (1)	22	4	6	3	2	5

TABLE 3: Local public transport (bus lines) Separate companies by region and by number of employees - Urban and extra-urban service - Year 2012.

Source: Processing of Regional Transport and Mobility data provided by the Transport Operator Companies.

(1) In addition to the 42 management departments, there is the direct management of the Municipality of Sulmona (with 11 employees who do not apply the collective labor agreement but the Personnel Local Authorities contract) and the management of the Municipalities of Torrebruna and Pineto, whose companies manage the urban service respectively with an employee.

4. Environmental vision and data

An ideal picture of the fleet in 2015 based on available data and estimations, shows the state-of-the-art at that moment in time concerning environmental protection and sustainability in public transportation.

Municipalities												
	2015				2016				2017			
	Euro 6 (a)	Euro 5	Euro 4 or below	Totale	Euro 6 (a)	Euro 5	Euro 4 or below	Totale	Euro 6 (a)	Euro 5	Euro 4 or below	Total
L'Aquila (1)	7,5	3,8	88,8	100,0	7,5	3,8	88,8	100,0	7,5	3,8	88,8	100,0
Teramo	-	45,5	54,5	100,0	-	45,5	54,5	100,0	-	45,5	54,5	100,0
Pescara (2)	43,8	2,7	53,6	100,0	43,8	2,7	53,6	100,0	43,8	2,7	53,6	100,0
Chieti	-	2,4	97,6	100,0	7,1	2,4	90,5	100,0	7,0	4,7	88,4	100,0

TABLE 13 - Buses used for local public transport in the provincial capital / metropolitan city by emission class - Years 2015-2017 (percentage compositions)

Source: ISTAT, Environmental data in cities

(a) Including all-electric or other zero-emission buses, considered to comply with the highest standard.

(1) Estimated 2017 data.

(2) Estimated 2016-2017 data.

The concern for environment is one of the drivers for policy decisions. In Abruzzo Region there is a strong traditional green-oriented mentality, favoured by the extension of agriculture and other territory related economic activities, but it is also true that the big metropolitan area of Chieti and Pescara is often a source of air pollution due to heavy private car traffic.

Another relevant indicator of environmental cautiousness is the presence of taxi licences, to see how the public bus-trolley-tram systems are combined with the private taxi services. Available data are both real and estimated values, but they are significant to portrait the present situation of the main Cities in Abruzzo, i.e. the Province Capitals.

MUNICIPALITIES	2013	2014	2015	2016	2017
L'Aquila	19	19	19	19	19
Teramo	3	3	3	3	3
Pescara (1)	40	40	40	40	40
Chieti	14	14	14	14	16

TABLE 14 - Taxi licenses active in the provincial capital / metropolitan city - Years 2013-2017 (absolute values).

Source: ISTAT, Environmental data in the cities

(1) Estimated 2017 data.

On the other hand, no car-sharing or bike-sharing were detected by ISTAT during the same timeframe, from 2013 to 2017, while at the present time there some initiatives are starting to develop, especially as tourist-oriented services during summertime.

To have a comprehensive vision of the environmental approach of Abruzzo Region, it is important to refer to the Report by ARTA Abruzzo, the Regional Environmental Protection Agency on the state of environment 2018. The documents helps us understand the situation of transport in the wider framework of sustainability and environmental protection.

One important aspect of environmental protection is in the context of modernization and implementation of the European strategy on infrastructural corridors, after the enactment of Regulation (EU) no. 1315/2013 of the European Parliament and of the Council. The radical change of scenario is responsible for a new mobility concept, allowing forms of modal rebalancing in favor of sustainable modes of transport, intermodality, and a reduction in road travel fees.

Along these lines, Abruzzo Region, in the last five years, has made policy decisions and oriented investment choices in such direction: less polluting energy sources, CO2 reduction, protection of biodiversity, protection of landscape and, as we mentioned above, promoting the drafting of Urban Plans for Sustainable Mobility. Railway and maritime modalities are set as priorities for traffic on a national and international scale.

At regional and local level, large investments are supported in the urban area of sustainable mobility, with a promotion of intermodality, of the development of systems of control and information, cycle-pedestrian mobility and sharing mobility through the following actions:

- updating of the corridors of the trans-European transport network (Ten-T networks) with reference to the inclusion of missing links and the removal of bottlenecks, in particular, to the extension of the high-speed rail network to the Ancona-Pescara-Termoli-Bari section, to strengthening of freight transport with the extension of the Baltic-Adriatic corridor in the Ravenna-Ancona-Pescara-Termoli-Bari-Brindisi section of the terrestrial route;
- strengthening of railway infrastructure in urban and metropolitan areas of connection to national and European railway axes;
- development of the maritime and port dimension relating to the motorways of the sea and the cruises;
- combined transport of road-sea-road goods in an east-west direction through the system port of Abruzzo as a gateway to functional access to the Balkans;
- re-modulation of the Local Public Transport transportation programs in pursuit of efficiency and sustainability goals also through the purchase of methane and electric vehicles and the use of innovative technologies.

Both at administrative and political level, Abruzzo Region adopted the following relevant acts:

- Integrated Regional Transport Plan;
- Abruzzo Masterplan Alliance for the South;
- Dossier on regional intermodality approved with Regional Executive Act (Deliberazione di Giunta Regionale) no. 831/2017.

Abruzzo Region through the policy instrument of the Operational Programme ERDF 2014-2020 - Axis VII, has allocated 23 million euros to the implementation of 4 sustainable urban development projects. The projects presented aim to improve the livability and quality of mobility in the 4 provincial Capitals of Abruzzo (Pescara, L'Aquila, Teramo and Chieti) based on a sustainable urban strategy. The funds serve interventions over existing infrastructures, for renewal of rolling stock, redevelopment of the poles of attraction and for the purchase of structures for the use of vehicles with low environmental impact.

The Report observes also data on the implementation of such policies in the past years.

As an example, it is interesting to see the current scenario of mobility in terms of use of public transport on rail and road and private transport, and therefore the vehicular traffic both public and private, in order to return an information framework on the status and trends in public service and mobility in general on which they depend in measure the quality of life and the urban environment.

Following the previous paragraph on data on usage, but with the perspective of environment, we have to observe that the size of the vehicle fleet has increased in the last five years as the rate of motorization has also increased. At the same time, however, it is important to note the first positive effects of the reorganization of the train service carried out in 2016 by the Region, as the train utilization rate has increased, although it is still below below the national average which in 2017 amounted to 5.5.

The trend relating to the use of public transport is also on the increase, which stands at the average national. Despite this, the use of the private car is still predominant over the use of public transport.

	Year					
	2012	2013	2014	2015	2016	2017
Abruzzo	1.125.725	1.131.214	1.131.837	1.134.723	1.144.525	1.160.608

TABLE 15: Vehicles circulating in the Abruzzo Region goods and passengers (excluding motorcycles) - Years 2012-2017.

Source: ARTA 2018 Report, data from National Infrastructure and Transport Account 2016-2017 – Ministry of Infrastructure and Transport.

MUNICIPALITIES	Autovehicles			Motovehicles		
	2014	2015	2016	2014	2015	2016
L'Aquila	670	676	685	84	85	85
Teramo	647	653	661	106	106	106
Pescara (1)	592	593	600	121	120	120
Chieti	636	640	649	114	114	115
ABRUZZO	636	640	648	107	107	107

TABLE 16 - Motorization rates by province / metropolitan city and Region - Years 2014-2016 (cars or motorcycles circulating per 1,000 inhabitants).

Source: ARTA 2018 Report, data from ISTAT, data processed from Public Automobile Registry.

	Year					
	2012	2013	2014	2015	2016	2017
Abruzzo	2,7	2,8	3,6	2,0	2,3	4,2

TABLE 17: Index of use of rail transport (Trainers, students and students aged 3 and over who use the train usually to go to work, asylum or school on the total - percentage).

Source: ARTA 2018 Report, data from ISTAT.

	Year					
	2012	2013	2014	2015	2016	2017
Abruzzo	17,9	18,2	17,5	16,9	19,1	20,1

TABLE 18: Use of public transport by employees, students, students and public transport users (No. of employees, students, schoolchildren and users of public transport who have used public transport vehicles on the total number of people who move for work and study reasons and used means of transport).

Source: ARTA 2018 Report, data from ISTAT.

5. SWOT Analysis

This part of the Baseline Study is intended to analyse elements of strength and weakness of the territorial transport system.

According to the methodological approach, the SWOT analysis aims at identifying the operational strategies to be based on the reprogramming plan in order to achieve the general and particular efficiency objectives (criteria of the Prime Ministerial Decree of March 2013), both in terms of the organization of services and in terms of sustainability economic sector.

The analysis was conducted assuming as a reference area the entire segment of LPT (Local Public Transport, in Italian Trasporto Pubblico Locale TPL) services, a system on which the reprogramming plan is called to intervene directly and whose internal variables - demand and supply of public transport, but also economic factors, organizational and managerial competence of the regional policy and intrinsic to the sector - they must represent the real objects of the efficiency improvement action.

All the factors that characterize the sector, from the instrumental equipment (with the exception of the rolling stock for what will be said below), to the policies of orientation of the demand, to the ability to attract users or, in short, all the results from which the current exercise part, have been analyzed to recognize in each of them a point of strength or weakness that the Plan will have to enhance or, on the contrary, modify to try to remove it.

The external variables that can positively influence (opportunity) or negatively (threats) the LPT services sector and that the analysis has derived directly from the cognitive framework on transport supply and demand concern first of all the perspective structure of infrastructures and rolling stock; these factors, considered "contextual" because they cannot be directly controlled by the service reprogramming plan but, in fact, contiguous to it in the ordinary transport planning processes, will

have a decisive role on the capacity to make the system more efficient; the Plan will have to clearly define the strategies to be implemented both in the face of possible scenarios for improving the offer in order to make the most of the upgraded assets, and in the face of scenarios that on the contrary could negatively affect the functioning of the overall system due to worsening dynamics of unresolved demand-supply interaction, to prepare temporary or structural solutions based on a different organization of services.

Other external variables taken into consideration by the analysis derive from the socio-economic context, from the interaction between the settlement structure and the transport system, from the conditions of the regulatory-institutional framework defined at national level.

Finally, the analysis was carried out trying to maintain a synoptic reading of the different sectors (railways, suburban and urban automobiles) while identifying the specific potential and criticalities of each.

Strengths – OVERALL SYSTEM	Weaknesses – OVERALL SYSTEM
Regional regulatory framework conducive to the establishment of IT procedures / standards (protocols) for the transmission of data for reporting (Regional Law 9/2012) (1).	Regional regulatory framework which, for some themes in the transport sector, is stratified with a consequent loss of certainty and regulatory clarity (14).
Provision of data analysis tools for demand-offer interaction (2).	Failure to set up a regional mobility agency. (15).
Web portal dedicated to the Transportation sector for access and institutional and service communication. Through a connection of the portal, the project aimed at allowing the organization of the journey through the identification of the route and the LPT managers that carry it out has been started - experimentally. (Http://www.trasporti.regione.abruzzo.it/)	Delay in the full operation of the web functions of the Transport Portal and the absence of centralized information systems for users.
Reorganization of the archive of concession deeds and exercise programs; update of the specifications attached to the concessions and computerization of the data.	Absence of tariff integration (16).
Tariff integration since 2004 in the area with the highest regional population density index (Chieti / Pescara) with agreement between four LPT operators (3).	Failure to switch from the concession regime to the service contract (17).
Possible mileage recovery through the reprogramming of the services on public holidays, with consequent possible recovery of work shifts and reduction of the vacation mountain.	Failure to construct a standard service cost model to which the cost of the various regional services can be parameterized so as to establish the regional needs and the cost involved in the assignment.
Punctuality in payments and compliance with the deadline established by the L.R. 9/2012.	Excessive fragmentation of the production of LPT supply (weakness for the organization of services) (18).
Identification of the Region as governing body of the C and D Basins (4).	Regional regulatory framework which, for some themes in the transport sector, is stratified with a

	consequent loss of certainty and regulatory clarity (14).
Containment of operating costs in some areas of the internal areas due to the presence of local carriers. (5)	Significant decline in transport demand, especially in the automotive sector, on holidays.
Strengthening of the role of the Regional Administration Programmer of the LPT (6).	Functional overlaps between modes (rail-car) and competences (urban-extraurban) (19).
	Rigidity and non-renegotiation of existing credit lines (20).
	Poor attitude to co-planning by Local Authorities (21).

Strengths – RAILWAY SYSTEM	Weaknesses – RAYLWAY SYSTEM
Cooperation agreements with neighboring regions (eg: Lazio for line-time scheduling in Rome) (7).	Low perception and degree of satisfaction of rail service users (Source: Istat) (22).
Reliability and punctuality of services (8).	High degree of saturation of the seats offered in the high attendance routes.
Good perception and satisfaction of the user for comfort on board the regional carrier.	High percentage of evasion of payment of the ticket (23).
	Criticality in the definition and management of commercial agreements between regional service carriers for common routes, not always in perfect commonality of prospects.
	Sharing of rolling stock with neighboring regions (24).
	Conditioning resulting from shared exercise programs with neighboring regions (25).

Strengths – EXTRA-URBAN AUTOMOTIVE SECTOR	Weaknesses – EXTRA-URBAN AUTOMOTIVE SECTOR
Presence of a network of widespread services (9).	Programming not always based on efficiency and functionality (too many stops that overlap with urban services in the urban center) (26).
Reliability and punctuality of services (10).	Failure to define previous payables (27).
Presence of a high consolidated traffic with regard to the connections from the inside to the coast and, in the inland areas, to the large attraction poles (11).	Competition of substitute / supplementary services of railway services.
	Possible inconsistency of the operating programs of the lines serving the industrial poles (so-called worker lines) in relation to the different employment scenarios and actual demand.

URBAN AUTOMOTIVE SECTOR	URBAN AUTOMOTIVE SECTOR
Presence of a capillary exercise programme.	Programming not always based on efficiency and functionality (excessive number of stops and overlapping with extra-urban services) (28).
Reliability and punctuality of services (13).	Inequality in the provision of services and in the recognition of fees.
Presence of a high consolidated traffic.	Significant avoidance of payment of the ticket (29).
Good endowment, in the Chieti Pescara area (Unico integrated area), of low environmental impact vehicles (Euro 5): the circulating vehicles with these characteristics are about 70 and equipped with emitters on board.	Level of indebtedness of local Administrations towards operators. (late payments by the provincial capital municipalities to which resources were transferred in 2011) (30).

Notes to the table “Strengths / Points of Weakness”

1) The Regional Law of 22 February 2012, n. 9 containing “Simplification of procedures in the field of local public transport” represents, on the one hand, the immediate and concrete attempt - proved to be moreover effective - to simplify the procedures aimed at paying operating contributions to LPT companies and, on the other, a first step towards the progressive introduction of information technology in communications, in the verification, control and payment procedures between the granting body and the concessionaire, so as to replace paper documents with electronic ones.

2) The Regional Transport Department, during 2012, updated its VISUM program for the processing of data and models necessary for the configuration of the regional LPT network functional to the reprogramming of the LPT services. (Det.Dir. 10 / 2012 / DE7).

3) Starting from September 1st 2004 in the area between the Municipalities of Pescara, Chieti, Francavilla al Mare, Montesilvano, Cepagatti, San Giovanni Teatino, Spoltore, Torrecchia Teatina and portions of territory of the Municipalities of Silvi, Ripa Teatina, Cappelle , Città Sant’Angelo, Manoppello and Miglianico, (for a total population around 350 thousand inhabitants) a system of integration between vectors and different lines of public transport has been created. The natural vocation of the area to become a compact area, from the point of view of transport, results, moreover, from the same studies conducted in the context of the definition of the Regional Transport Plan. In them it emerged that the geographical area between Chieti and Pescara holds at least 30% of the Abruzzo demography and an equally significant share of the transport of goods, which is however strongly aggravated by the allocation in the considered area of a very large number of large structures distribution. Just to give a few examples, the data of the shifts in the compact area including the Municipalities of Città S. Angelo, Chapels on the Tavo, Montesilvano, Pescara, Spoltore, Moscufo, Pianella, Cepagatti, Chieti, S. Giovanni Teatino, Torrecchia, Francavilla a Sea, show that, in an area with a total population of 297,003 inhabitants, 49,385 systematic non-intra-community movements are generated, of which 40,042 with internal destination in the same area (self-containment equal to 81%) and a linear density average of these displacements, consisting of the average of the relationships between number of displacements and distance travelled is equal to 254 displacements / km.

4) With D.G.R. n. 486 of 30 July 2012, subsequently submitted to the examination of the Council of Local Autonomies (which, with Resolution no. 4 of 26 September 2012, expressed a favorable opinion) the traffic basins pursuant to art. 3 bis of Legislative Decree 138/2011 converted with modification into Law 148/2011 and s.m.i. In particular, for the two basins (C and D) that exceed the boundaries of the current provincial districts - such as conceived according to functional logics for the mobility of the territories concerned - the proposal concerning the identification of the governing body envisages the Region as the subject delegated to the organization of the transport system within the reference basin, without prejudice to the identification of forms of coordination with the local authorities: both those holding an urban network financed with resources from the regional budget, and those that, although not holders of urban networks financed with regional resources, will have recognized a share of services which, although subject to the network of the basin of competence, will maintain the characteristics of integrated area services. In the proposal of the basins, it was thus considered that a single control room, with forms of coordination with the local instances, could favor a simplification in the management of the basin networks in line with the logic underlying Article 3 bis DL 138/2011 and subsequent amendments.

5) The current organization of the regional LPT presents an organizational fragmentation due to the presence of a considerable number of managers. If this is true it is equally true that there are studies that attest that the optimal size of the production is approximately around 8-10 million cars per year, after which the cost per kilometer begins to grow.

6) The identification of the Region, as the governing body of the largest traffic areas, strengthens its role of programmer body, and allows you to link the programs and contents of the transport service with the responsibility of the expenditure foreseen to deal with them, except of course to guarantee forms of participation of the local entities that are recipients of urban services financed with the resources of the single regional Fund.

7) On September 20, 2011, a memorandum of understanding was signed with the Lazio Region regarding "The improvement of interregional mobility". In particular, the reorganization of the service on the Avezzano-Rome section was planned in order to make the service more attractive and usable and, for this purpose, it was agreed to request Trenitalia for the possibility that the rolling stock destined for the line in question is shared. between one and the other region. For the same purpose, the Abruzzo Region has also made itself available to work towards the use of the trains of the Sangritana Railway Company. Changes to the transport offer were also planned, including on the Terni - L'Aquila and Roccasecca - Avezzano lines (also with a view to integration / adduction with respect to road services). Objectives of the joint actions will be, in relation to the available resources: contemporary entrances in the stations; reactivation of disused crossing stations; forecast points of precedence in double track sections; implementation of signalling and traffic management systems; general technological modernization of the line.

8) From the results of the reports (2011-2013) of the Technical Management Committee of the Trenitalia service contract, it is clear that compliance with punctuality and good attendance on services, especially on the coast.

9) According to the ISTAT 2012 survey on the degree of satisfaction, in Abruzzo, for some aspects of the public transport service, the service carried out with the coach presents as a matter of convenience of schedules, connections between areas good response rates with values above 60%.

10) Again according to the ISTAT 2012 survey with regards to the items information on timetables and services, possibility to find seats, cleanliness, punctuality, frequency and speed of the rides, the

percentages of satisfaction of the users are all rather high above 60% with peaks of 80% for punctuality.

11) From the daily survey carried out by the concessionary companies on the number of runs made, it emerges that, for some sections such as Avezzano / L'Aquila, Teramo / L'Aquila and, towards the Unico area, the connections made by Cepagatti and Città Sant'Angelo the additional intervention (in some cases even up to 4 more pairs of rides per day) is almost systematic.

12) See above notes 9 and 10.

13) From the ISTAT 2012 survey, the degree of satisfaction with the use of the bus (where it means the urban service) stands, with regard to punctuality at 65.4%, a slight increase compared to the data of the last three years.

14) The regional law implementing the Legislative Decree 422/97, R. L. 152/98, was largely suspended pending the size of the basins. Meanwhile the system continued to be regulated by the previous R. L. 62/83, in turn implementing L.151 / 81. In this way, the regional system is still based on concession measures and financed through operating grants, whose calculation methodology is based on standardized economic costs (Article 49 of Law 62/83).

15) Planned by the art. 25 of the R. L. 152/98, the agency, which was supposed to monitor the supply and demand for transport, the networks, the quality and level of the services produced, has never seen the light, suspended, like the other legal institutions provided for therein, from R. L. 59 / 99.

16) With the exception of the "Unico" system (sub note 3), attempts to organize an integration system (which unlike Unico also included rail services) encountered obstacles that effectively prevented any experimentation, leaving the projects and the studies carried out at a purely theoretical level, although detailed. The most obvious difficulties concerned the composition (numerically high) of the carriers involved (with consequent complexity in relation to the revenue sharing regime) as well as the significant difference between railway and car fares which, in the hypothesis of integration, would have led to a significant increase of travel ticket prices.

17) The slowness in completing the governance plans and projects as envisaged in the Regional Law 158 / 98e, on the contrary, the lively regulatory dynamism that, at national level, has affected the public services sector in recent years have determined a tightening of the management of the regional transport system, which, in fact, has continued to replicate old procedural patterns, with the continuation of the concession agreements which, renewed automatically from year to year, have weakened the imposition (or even mere contractual) power of the granting body, which has therefore encountered many difficulties whenever it intends to propose improvements or changes to dealers.

18) The subdivision of credit lines with over 40 different carriers and at the same time the centralized management by the Region of around 90% of the entire network makes it difficult to organize some aspects of the public transport system, especially with regard to the implementation of computer systems, to modal and tariff integration and generally to all initiatives that need to be shared. Furthermore, the numerical disproportion, however different the roles of the parties, can sometimes lead to a reversal of the positions of force.

19) Although an effective operation to reduce the number of kilometers allowed for a contribution has been completed (pursuant to LR1 / 2011), the design of the urban and extra-urban network is affected by the rigidity of a provision that was originally intended to be a standard transient but then in fact regulates the system for over a decade. This is the rule that defines the mileage (now reduced by a percentage established by R. L. 1/2010) of the financeable services; numerical limit

that, however, ended up becoming a limit to the planning activity, to the “wide and overall range” processing of the transport offer. This programming stagnation has crystallized, in some cases, also situations of unbalanced supply compared to demand, with overlapping services and expenditure of financial and sometimes environmental resources.

20) The regulatory framework regarding relations between the Region and current managers of railway services has not yet allowed the Regions to exercise real bargaining power. In this sense, it is worth remembering the story of the last Trenitalia contract and of the catalogue of services “imposed” on the Regions.

21) For the considerations already explained in the notes dedicated to the regional regulatory framework and concerning the failure to implement the 1997 reform, local authorities did not developed a culture of collective mobility, encouraging and supporting road and urban planning policies which, if necessary, also limit and discourage private mobility.

22) From the ISTAT survey on the degree of user satisfaction in relation to the use of the train, almost all the indices taken into consideration, in 2012, stood at a percentage below 50%. Except in fact the index relative to the availability of seats, equal to 66%, the other indicators such as information on services and timetables, ticket costs, convenience of timetables, car cleaning and punctuality record degrees of satisfaction that reveal margins of consistent improvement.

23) Along some coastal lines (such as Pescara-Teroli) there is almost systematically a demand higher than the supply, with the inconvenience to users, forced to travel standing on crowded trains.

24) The shared management of the rolling stock with neighbouring regions, however essential and not overcome, at least not in the short term, involves more than one organizational difficulty. However, there may be scope for improvement at the time of the agreements and usage agreements with the other Regions.

25) The observations of the previous point apply also as regards the programmes for the exercise of interregional services.

26) The lack of coordination between the planning of regional and urban services is a bad but consolidated habit, both of the carriers and of the users of the extra-urban service, to use the stops of the urban services has completely distorted, in some cases, the function and the type of various transport services. This has led to a slowdown in the commercial speed of suburban services with the consequent perception of the use of inconvenient transport and, on the other hand, to a congestion of traffic in urban centres.

27) Although in the process of being defined, some questions are still open (including on the judicial level) concerning the determination of the balances relating to the financial contributions for the years 2004-2012.

28) The considerations already expressed regarding the not always mature capacity of programming of the local institutions are valid.

29) In line with the national figure, also in Abruzzo the percentages of evasion of payment of the travel ticket are high.

30) The transfer of resources to the provincial capitals took place only with the Law r.1 / 2011. Previously, the financial consignment also of the urban services of these municipalities was managed by the Region. Municipalities have therefore assumed this new responsibility not without

difficulty. For some of them, this evidence has sometimes led to a delay in paying the operating contributions to the companies.

OPPORTUNITIES – SYTEMIC VIEW	THREATS – SYSTEMIC VIEW
Establishment of the single regional fund for public transport, also fueled by financial resources deriving from the disposal of assets transferred by the State to the Region (Regional Law 20/2013).	Re-centralization of the operational and business offices of the services and offices P.A. in the territory (5).
Provision of intermodal exchange nodes (1).	Instability of the current regulatory framework at all levels.
Regional regulatory framework that encourages the implementation of LPT policies (2).	Uncertainty about the institutional reorganization process, especially with regard to the role of the governing body and the recognition by the Municipalities of the fundamental function of public transport in urban areas and in the Provinces of the provincial network transportation function (7).
Presence of districts with metropolitan characteristics (3).	Uncertainty of future resources (after 2015) transferred to the Region by the National LPT Fund.
Presence of settlement continuity axes.	Award mechanism that threatens to put the budget of the granting bodies in difficulty, forcing considerable anticipation of the fees (linked to the percentage of the bonus) in order to honor the commitments with the careers of the services.
Presence of an area with a strong industrial connotation.	Lack of LPT policies implemented by the EELs.
General economic crisis situation which forces the use of public mobility (4).	Poor propensity to load failure.
Greater attention to issues relating to respect for the environment and the concern to reduce pollutants (6).	Presence of areas with strong settlement dispersion / weak demand areas (8).
	High percentage of population residing in mountain areas (9).

OPPORTUNITIES – RAILWAY SYSTEM	THREATS – RAILWAY SYSTEM
High percentage of the population directly served by the railway network (coastal areas).	Performance characteristics of the internal railway network (low capacity and side speed).
Centrality of railway stations in urban areas.	State of maintenance of the railway network.
Presence of lines in areas with a strong tourist vocation.	Age of rolling stock.
Performance characteristics of the main railway backbone (high capacity and side speed).	Delay in the implementation of planned infrastructural interventions.

Interventions in place to upgrade / modernize the infrastructure.	
Interventions in the act of strengthening / modernization of the rolling stock.	
Next renewal of contracts / tender for the contract	

OPPORTUNITIES – EXTRA-URBAN AUTOMOTIVE SECTOR	THREATS – EXTRA-URBAN AUTOMOTIVE SECTOR
Next renewal of contracts / tender for the assignment.	Congestion of the road network.
Replacement program for approximately 76 intercity buses (Regional Implementation Program of the Underutilized Areas Fund Abruzzo 2007 - 2013 Action Line III.2.3.a Intervention n.2 sub.1).	Road network maintenance status.
Program to upgrade short and medium-sized buses to be included in the area of the Code “Crater” for € 3,627,000.00 (Regional Implementation Program of the Underutilized Areas Fund Abruzzo 2007 - 2013 Action Line III.2.3.a Intervention n.2 sub.2).	Level of tortuosity of the road network.
	Absence of reserved lanes or preferential traffic control systems for urban penetration.

OPPORTUNITIES – URBAN AUTOMOTIVE SECTOR	THREATS – URBAN AUTOMOTIVE SECTOR
Next renewal of contracts / tender for the assignment.	Congestion of the urban road network.
Replacement program of approximately 22 urban buses (PAR FAS Abruzzo 2007 - 2013 Action Line III.2.3.a Intervention n.2 sub.1).	State of maintenance of the urban road network.
	Geometric-functional characteristics of the urban road network.
	Absence of reserved lanes or preferential traffic control systems in urban areas

Notes to the table “Opportunities and threats”

1) Although not completely operational and some in need of maintenance works, the major logistic nodes present in Abruzzo are represented by the Marsica goods distribution center, the Castellalto autoports, Roseto degli Abruzzi and San Salvo as well as by the Val Pescara freight terminal of Manoppello, served by the railway line.

2) the art. 62 paragraph 1 of the R. L. n. 1 / 2011 establishes that «Municipalities, as efficiency measures, foresee, within their own road network, the creation of preferential lanes exclusively for public transport, limitations to private traffic within their own urban areas or other incentive measures aimed at improving public mobility. The adoption of the aforementioned measures constitutes a reward element in the allocation of resources following the transfer of the functions, according to the criteria specified with a specific act issued by the Regional Council ».

3) The dimensioning in basins adopted in application of art. 3 bis of Legislative Decree 381/2011 takes into consideration the existence of an area which, due to settlement continuity, housing incidence and high levels of self-containment can represent an area with metropolitan characteristics. Moreover, the experience of tariff integration (UNICO) experimented in part of this area could be enhanced and perfected by including areas that are not now.

4) This situation of economic crisis can represent for public transport the opportunity to “hook” also the “new entry” users, provided that the system is able to demonstrate efficiency, comfort and convenience such as to allow the retention of new customers who they will therefore be able to think of public transport as a choice and not as a necessity.

5) The recent spending review policies, especially those that provide for the closure of offices and peripheral services (courts, hospitals, etc.) produce immediate consequences in terms of citizens’ habits and needs, with a presumable increase in demand for transport to the poles centralizers of functions that are no longer delocalized. Public mobility policies should therefore be in a position to receive this increased transport request immediately and adequately. To the extent that it will be comfortable and efficient, the public service will also be able to maintain its attractiveness in the future.

6) Together with what was highlighted in the previous note, the greater sensitivity that is spreading with regard to environmental issues could also be an opportunity to encourage, on the one hand, users and, on the other, local authorities so as to favor in the decisions relating to the viability of its districts, choices that favor public transport (restricted traffic areas - ZTL, preferential lanes, efficient parking system, incentive for collective mobility, etc.)

7) In July 2012 while the Regions were involved in the definition of the basins referred to in art. 3 bis of Legislative Decree 138/2011 and subsequent amendments and the Constitutional Court pronounced itself declaring the illegitimacy of the art. 4 of the same Legislative Decree 138/2011 (which designed a LPT system linked to art. 3 bis), the state legislature - which had established a few months before the governing body of the basin had to be sovereign in the organization, management and control of the LPT - on the contrary, it confirmed to the Municipalities the organization of public services of general interest, including municipal public transport services (art. 19, paragraph 1, lett. B DL 95/2012) and of the Provinces, in waiting for their reorganization, the transport planning activity in the provincial area (art. 17 paragraph 10 DL 95/2012). An institutional design, this, which does not seem properly inspired by criteria of clarity and legal certainty. The “who should do what” in the local public transport system is at the moment a question that legitimizes too many different answers.

8) Crossing the data relative to the percentage of common CDs. Inland mountain (54%, compared to 22% inland hills and 24% of coastal hills) with that relating to the population density index - whose average is significantly lower than that of the national figure (120.69 Km² compared to 196, 75 ab /

sq km) - a territory emerges characterized by large areas with a high component of demand for weak and very weak mobility, due to the presence of municipal realities characterized by a low and very low demographic level. On the contrary parts of the region, concentrated on the coast and in the area that goes from Silvi to Francavilla al Mare (including the interior with the Municipalities of Spoltore, San Giovanni Teatino and Chieti) represent an opposite datum with an absolutely significant index. This characteristic constitutes an element of weakness and complexity due to the planning action of the LPT, as it makes planning and, above all, achieving the objective of increasing the number of passengers required by current legislation difficult.

9) The considerations in the previous note apply.

4. Future scenarios of mobility

The evolutionary trends of mobility must be articulated according to the demand targets identified in the introduction: elderly; students; workers; residents and tourists. For the mobility of the elderly, whose needs are related to “health” and “social” connections, it is difficult to see on the horizon service improvement processes for the reasons expressed in the previous considerations. Student mobility will be guaranteed mainly for extra-area links in order to reach the secondary school poles of the second degree, while the internal links to the plexuses of primary and secondary Grade are conditioned to the processes of merging and deleting certain plexuses. The absence of integrated “education towards sustainable mobility” actions will result in a disconnect of services to the detriment of household needs.

As far as workers’ mobility is concerned, the absence of interventions aimed at guaranteeing Local Public Transport services also for those employed in companies not served by long-distance connections presupposes the use of private vehicles, entailing an increase in costs compared to public transport and a greater exposure to road safety risks. The family-type of the internal area mainly contemplates two targets of mobility demand: workers and students. Its components are daily faced with the problems related to data shifts towards the internal area and, in many cases, the lack or inefficiency of the mobility service determines the choice to leave the native countries to reside in the areas with the highest concentration of services or close to the employment basins of the valley. For the soft mobility there are problems of resources for the expansion of paths, off-road cycle paths, environmental routes of value even if it is consolidated the awareness that the demand for tourism-nature-vacation requires a high quality offer for this type of product. Local tourist operators are the first ones interested in investing in “green infrastructures” so as to orient the offer according to the demand of nature tourism.

In this framework it is necessary to meet the needs expressed by four types of users: the elderly, for “health” and “social” journeys; the students, involved in the unification of the school complexes; the “workers” employed in the productive areas of the valley, allowing them to reach the companies located in the employment areas; residents and tourists travelling to and from the territory and for “soft” mobility.

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