



European Union
European Regional
Development Fund



DIGIBEST REGIONAL ANALYSIS OF BASILICATA, ITALY

Document Version: 3.7_Eng
Data: 29/03/2021_Final

Contents

1. Introduction	3
2. Economic development, entrepreneurship and digitization	9
2.1. Economic development and entrepreneurship	9
2.2. Digital economy and society	12
3. Barrier and solution analysis of the digital transformation of SMEs	15
4. Main stakeholders of the region	20
5. SWOT Analysis	23
6. Politics and support tools for the digitization of SMEs	25
6.1. Regional strategy for the innovation and smart specialization 2014-2020-S3 Basilicata	25
6.2. Main characteristics of national, regional, and local politics towards the digitization of SMEs...	28
6.3. Support instruments to promote SMEs digitalization	30
7. Analysis and identification of good practices	36
8. Findings and conclusions of the Digital Assessment Survey	38
9. Conclusions and Recommendations	48
<i>Bibliography</i>	50
<i>Recommended reading</i>	51
<i>Useful Sites</i>	52

1. Introduction

Basilicata (ex-Lucania) is a region in the south of Italy which is situated in the centre of the Mediterranean. The very ancient land known as Basilicata was already inhabited in the prehistoric age. The settlements of Venosa and the Bradano Valley date from the Paleolithic period while the organized agricultural villages around Matera and Melfi sprang up during the Neolithic period. From that time until the Bronze Age the region became an important centre of communication between the Jonian and Tyrrhenian populations, giving rise to important settlements. The inland regions began to be populated during the Iron Age. It was during this phase that many Indo-Europeans arrived in Lucania, among whom the Liky from the Illyrian coast. In the 8th century B.C. Greek colonies landed on the Lucanian shores of the Jonian Sea. This historic event gave birth to that flowering civilization that will be remembered in history as the Magna Graecia. Metaponto, Siris and Heraclea are the most important settlements. Between the 6th century and the 5th century B.C. certain Osco-Sabellic tribes came down from the Irpinia, while the Lucanians settled the more inland regions. Later, in the 5th and 4th centuries B.C., the Lucanians attacked the Greek colonies along the Jonian coast in their quest for new land to cultivate. Meanwhile, between the 4th century and 3rd century B.C., the Romans pushed their way into Lucania as they continued their expansion. At first the Lucanians were allied with the Romans against the Samnites.

Later, not wanting to yield to Roman domination, they allied themselves with the Samnites and the Greek colony in Taranto to combat the Romans. Meanwhile, in 291 B.C., Venusia (today Venosa) becomes the first Roman colony in Lucanian territory. The Romans fight against Pyrrhus who was rushing to the aid of the Greek colonies and loose a battle that took place between the areas of Metaponto and Heraclea (today Policoro), which became famous for the heavy losses incurred on both sides. In the northeast, Roman domination increases: the town of Grumentum (today Grumento) is founded and the road that connects Grumentum to Venusia is constructed (Via Herculia). 280 B.C. witnesses the end of Magna Graecia. In the 2nd century B.C. Lucania is under Roman domination. The proud and warlike Lucanians rebel against Rome, which had decided to impose landed estates, but are defeated. From 27 B.C. to 14 B.C., under the Augustan Empire, Lucania is divided into two parts and unified with Apulia, the Regio II, and with Brutium, the Regio III. At the end of the 3rd century Dioclesian reunites the area, unifying it with Brutium. With the decline of the Western Roman Empire the region sinks back into deep isolation, which destroys the already impoverished economy. We are in the Middle Ages. Between the 6th century and the 9th century, the Longobards annex Lucania (except for the Byzantine possessions in the region of Matera) to the Duchy of Benevento. The Byzantines, gathered in Lucania in their effort to escape religious persecution in the Orient, give life to the phenomenon of the Rupestrian (rock) Churches. They proliferate on the Murgia of Matera. Meanwhile, the Saracen invasions force the Lucanians to retreat to the surrounding mountains and hills. Between the 8th century and the 9th century, Matera is annexed to the Duchy of Benevento, while the rest of the region passes under Byzantine domination. In the 11th century and 12th century the Normans conquer Lucania, making it the centre of Italian political life.

In 1059, Melfi is the capital of the Norman realm. When Norman domination ends, the Swabians and Angevins compete for control of Lucania and southern Italy. Frederick II of Swabia is born. In

1231, in Melfi, he enacts the Constitutiones Utriusque Regni Siciliae (the Constitutions of the Two Sicilies). At the end of the 13th century the Angevins control the Realm of Naples and the Two Sicilies. Feudalism has begun, during which time many Lucanian lordships spring up and which the Aragonese attempt to oppose. The Barons, faithful to the Angevins, try to overthrow the Aragonese Reign and the 'Congiura dei baroni' (baron conspiracy) is planned in the Miglionican Castle in 1441. Between the 13th century and the 16th century Bourbon power consolidates. Certain Albanian communities arrive in Basilicata, settling along the slopes of Vulture and the Pollino Massif. In 1663, Matera is the capital of the Lucanian Province of the Kingdom of Naples. This period witnesses the beginning of bloody rebellions by peasants against the barons who exploit the land, forcing the population into famine. In 1707, the Austro-Sabaudian army occupies Lucania, and after the Treaties of Utrecht and Rastadt it passes into the hands of Charles VI of Austria. The Bourbons return to power with the Peace Treaty of Aquisgrana.

In 1799, a peasant rebellion is repressed with mass executions. Then power passes briefly to the French, who after a short time are forced to return it again to the Bourbons. A part of the Lucanian bourgeoisie adheres to the 'Moti carbonari' (Carbonari uprisings). Between 1861 and 1868 the entire region is affected by the phenomenon of Brigantaggio (banditry), rebellions against power generated by the extreme isolation of the population and which finds its ideal habitat in the thick woods of Mount Vulture.

The beginning of the 20th century, in 1902, sees the first meeting of Socialists in Potenza. Poverty has reached unacceptable levels and the phenomenon of emigration begins, reaching its high point in 1913.

In 1943, Matera is the first southern Italian province to rebel against Nazi-Fascist occupation. When World War II ends, it becomes necessary to tackle the problem of the 'Sassi of Matera' (ancient rock dwellings) which, because of overpopulation, had become a health risk. In 1952, a state law decrees the evacuation of the Sassi district. During the same period 'Riforma Fondiaria' (land reform) begins and transforms the face of the region. Unfortunately, emigration damages the communities of Basilicata since it provokes a progressive demographic impoverishment. The 1980 earthquake in Irpinia creates serious problems in the entire northern region and in the capital Potenza.

The University of Basilicata was established in Potenza in 1984, which a few years later opens a campus in Matera. In 1986, the Italian government enacts a law to finance the restoration of the Sassi of Matera, which is still being carried out among a multitude of problems. At the beginning of 1994, UNESCO declares the Sassi of Matera 'heritage of humanity to be handed down to future generations' and counts it among the territories under its protection. FIAT establishes an enormous factory in the industrial zone of S. Nicola of Melfi. In the same year the National Park of Pollino is established. In 2019, Matera was a European Capital of Culture¹.

¹ <https://www.aptbasilicata.it/La-storia.52+M52087573ab0.0.html?&kiesrmydlqwnfhgn>



Figure 1. Map over Basilicata (dark green)²

Currently, from a geodemographic point of view, the region of Basilicata³ borders in the east with Puglia, on the west with Campania and in the south with Calabria. It is spread over an area of 10.073 km² and has a population of 556.934 inhabitants in 2019. Its housing density is of 56 inhabitants per km.

The governance of the Region of Basilicata

Each region is a territorial body with its own statutes, powers and functions according to principles established by the Constitution, as in art.114, second paragraph of the text; the regions are not considered as local bodies (municipalities, provinces etc.) but are controlled by a legislative decree 18 august 2000, n.267 (TUEL).

The Italian regions, as indicated in art. 131, are twenty and Basilicata is one of them. Five of the regions have a special statute of autonomy and one of the regions (Trentino-Alto Adige) is made up of the two self-governing provinces that have legislative powers like those of the regions with special statutes, of the Italian legal system (Trento and Bolzano); with respect to linguistic minorities, Trentino-Alto Adige and Valle d'Aosta have the bilingual names Trentino-Alto Adige/Sudtirolo and Valle d'Aoste/Vallée d'Aoste of art.116, as modified in 2001. The regional capital of Basilicata is Potenza. Basilicata is divided into two provinces (Potenza and Matera) as well as into 131 municipalities.

² <https://www.chimica-online.it/come-quando-perche/confini-basilicata.htm>

³ <https://www.treccani.it/enciclopedia/basilicata/>

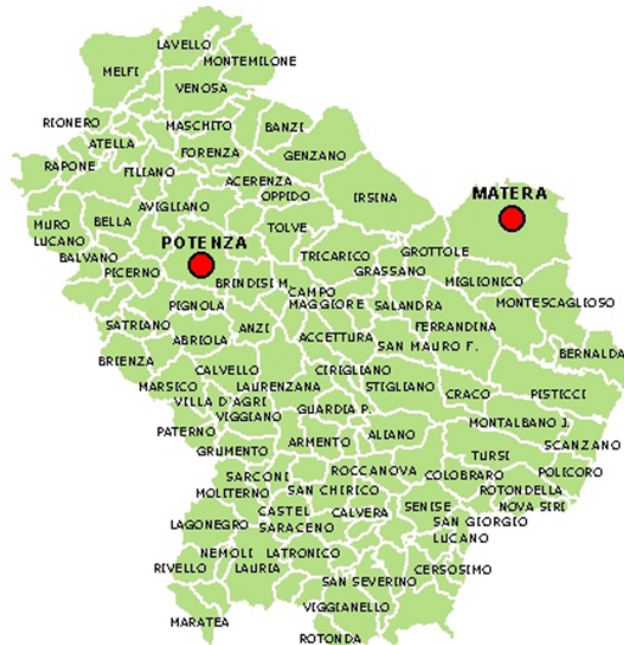
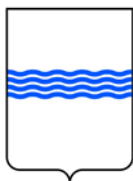


Figure 2. Map of Basilicata municipalities⁴

For greater understanding of political form, we report article 1 of the statute of The Region of Basilicata Statutory Law, 17 November 2016.

Articles of the constitution N° 1⁵

1. Basilicata is a region with ordinary autonomy within the Italian Republic and inseparable from it.
2. The region represents the population of Basilicata and considers the territorial intangibility and the territorial unity of the Lucanians communities its goal.
3. The region assumes as its foundations the values deriving from its own spiritual and religious heritage and from the civil and social struggles of the Lucanians.
4. Basilicata is made up of the municipalities of the historical provinces of Matera and Potenza.
5. The region of Basilicata participates in the institutions and activities of the European Union.
6. The capital city of the region is Potenza.
7. The region carries out a wide administrative decentralization to facilitate equal access to regional services. Regulated by 13th statute of the region of Basilicata.
8. The region has a banner and a coat of arms as described: The coat of arms of the Region of Basilicata is made up of a strip of Four blue waves on a silver background which symbolizes the main rivers of Basilicata. The banner is sea blue positioned in the centre of the coat of arms and at the top “Regione Basilicata”



⁴ http://www.protezionecivilebasilicata.it/protcivbas/files/images/10/57/48/IMAGE_FILE_105748.bmp

⁵ <https://www.consiglio.basilicata.it/consiglio-api/file/1092/201501>

is written in gold. The banner is completed with a tricolour ribbon with a gold tassel tied below the tag.

9. The inhabitants of Basilicata, once Lucania, are called Lucanians.

Transport infrastructure

The mainly mountainous terrain in the region has always created difficulties for logistics. The rail connections are not extensive; since 1996 it was foreseen a line project from Ferrandina to Matera but was never completed. The region has a small airport only, mainly for small aircrafts and private use. In Pisticci, object for studies for the extension in addition to the motorway “A2” and to “RA5” Potenza “A2”, the regione has other significant routes, like “S.S 106 Jonica”, “S.S. 407 Basentana”, “S.S. 658 Potenza –Melfi” and others that follow the course of the main Lucanian rivers, “S.S. 655 Bradanica (Foggia- Matera)”, “S.S. 598 Fondovalle dell’Agri” and “S.S. Sinnica (Policoro-Lauria)”.

The rail connections are run by Trenitalia and Ferrovie Appulo Lucane that deal with connections to and from the region Puglia.

In the table below (Table 1), it is shown the infrastructure competitiveness indices of the EU 28 of the NUTS 2 - Italian and relative classification - indices numbers (EU 28=100,0) and the ranking position (N.201st).

Table 1. EU infrastructure competitiveness indices 20 of the Italian regions NUTS 2 and relative classification⁶

Regions	Average UE 28 = 100,0					Ranking (e)	
	Accessibility				Synthetic index of infrastructural competitiveness	Value	Ranking N.
	Motor- way (a)	Railway (b)	Aerial (c)	Railway AV (d)			
Piemonte	116,7	129,4	128,5	68,7	110,9	47,7	82
Valle d'Aosta	72,8	95,2	95,6	6,5	72,6	31,2	136
Liguria	105,4	117,3	70,9	40,5	89,9	38,7	112
Lombardia	138,5	165,0	179,8	35,1	124,7	53,6	69
Bolzano	75,8	94,8	12,6	38,1	61,5	26,4	150
Trento	85,5	103,5	18,5	99,5	82,1	35,3	121
Veneto	121,4	138,4	90,0	65,9	108,4	46,6	87
Friuli Venezia Giulia	76,9	82,8	55,0	62,5	75,5	32,5	131
Emilia Romagna	125,5	146,4	78,9	122,0	122,1	52,5	73
Toscana	98,2	101,6	45,3	119,6	96,4	41,4	104
Umbria	88,5	73,8	49,2	33,0	68,1	29,3	143
Marche	58,2	61,4	9,0	93,4	58,8	25,3	157
Lazio	123,0	130,0	174,4	118,7	129,3	55,6	65
Abruzzo	40,4	65,0	32,7	59,4	56,1	24,1	161
Molise	45,3	56,7	11,4	84,0	53,4	23,0	164
Campania	89,2	114,6	25,7	33,4	73,7	31,7	134
Puglia	40,9	53,1	17,2	68,1	50,2	21,6	171
Basilicata	28,4	46,6	12,1	14,1	31,5	13,5	201
Calabria	26,1	34,2	9,1	62,6	36,9	15,9	194
Sicilia	18,4	33,8	26,1	11,3	29,8	12,8	207
Sardegna	6,5	12,4	13,2	25,5	19,9	8,5	225

Digital Infrastructure

The restructuring of the lines to bring ultra-broadband to all Italians is in the forced stages, through the need of institutions and according to objectives established by the European Union. So everyone should have a connection that reaches at least 10 Megabits, and where possible 1 Gigabit. The work should be completed by 2021, with 80% of *inhabitants* that should receive broadband (100 Mbit/s) cover by the end of the year, while the rest of the population should be connected by at least 30 Mbit/s.

However, situation in many regions of Italy, as can be seen from the interactive map (Figure 3 and 4), is far from that predicted. In Basilicata, for example, only 31.7% of inhabitants can surf the internet at 100 Mbps, whilst the remaining 67.8% can be guaranteed only with the band at 30 mega. In most cases, connections are under construction, and work process on sites is in full swing, above all in small municipalities and the provinces.

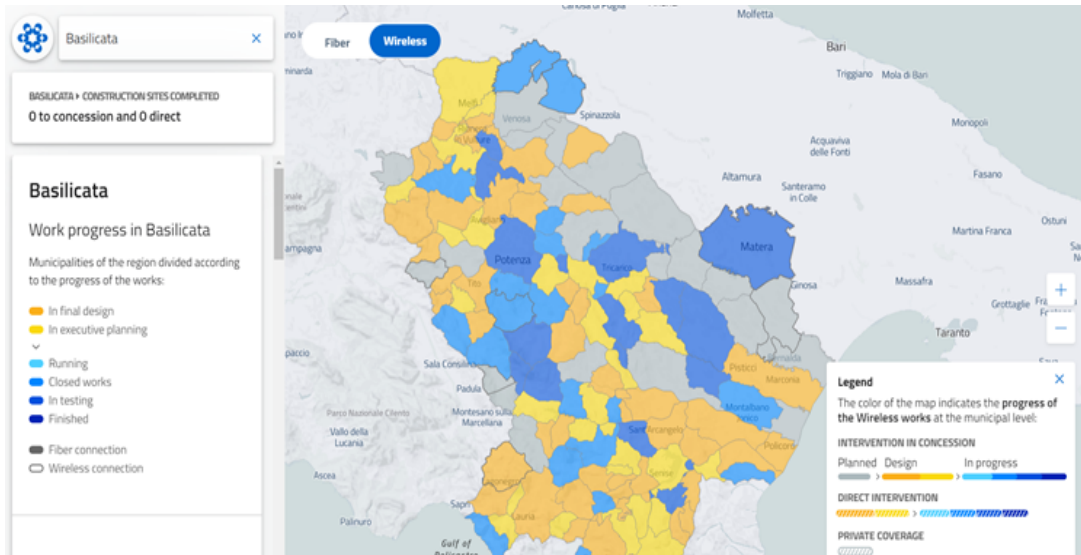
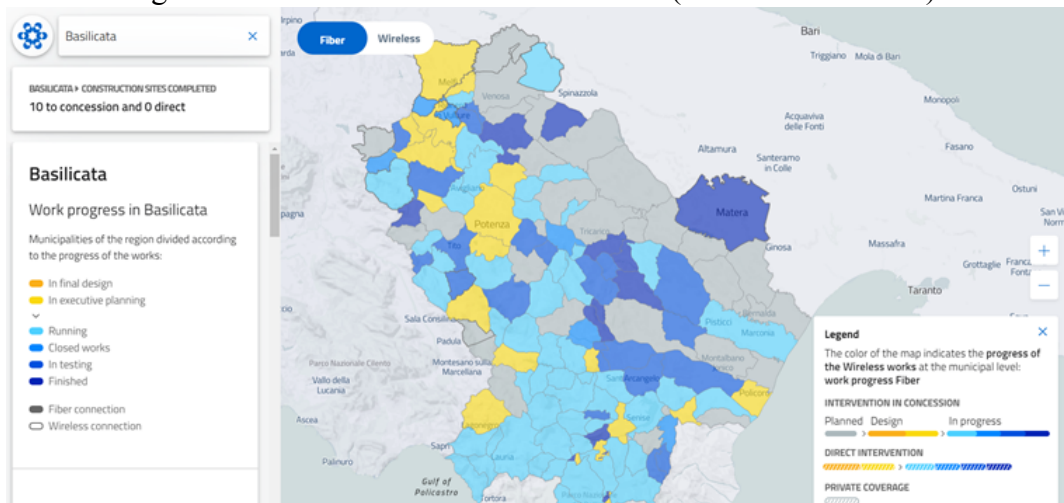


Figure 3. WIFI infrastructure in Basilicata (as of October 2020)

Figure 4. Fibre infrastructure in Basilicata (as of October 2020)



2. Economic development, entrepreneurship and digitization

2.1. Economic development and entrepreneurship

After the slight economic growth recorded in 2018, in the first nine months of 2019 the dynamics of economic activity in Basilicata has become slightly negative.

The turnover of the manufacturing industries overall has decreased compared to the same period in the previous year, due to the sharp drop of demand in the motor vehicle sector.

In the building sector, the cyclical phase remains weak: the recovery of the real estate market is still insufficient to push productive activity and any signs of growth in the sector are limited to Matera. The trend in services has been supported by the further growth in tourist flow, above all foreigners; the presence of tourists in Matera, European Capital of Culture 2019, has further strengthened this. On average, in the first semester of 2019 employment in Basilicata has begun to increase to a limited extent, so benefitting the positive trend in agriculture and services. In building and industry in a strict sense the numbers of the employed have however decreased; this drop is associated with the great increase in the number of authorized hours of layoffs, attributable to a large extent to the motor vehicle sector. The rate of unemployment has further diminished.

In the first half of 2019, demand for bank credit in the region increased, however, to a lesser extent than at the end of the previous year. The trend in loans to businesses contributed to this slowdown, which became slightly negative for small SMEs. Financing for families has continued to grow, benefiting mortgages and above all consumer credit. The rate of credit deterioration has remained at the same level as the end of last year, higher than the national average, but lower than the period preceding the crisis.

In the first nine months of 2019, the growth of economic activity in the regional industrial sector was interrupted, because of the drop in manufacturing and mining production. Based on the economic survey by the Bank of Italy conducted in September and October 2019 (around 80 manufacturing SMEs with at least 20 employees), company revenues decreased in the first nine months of 2019 compared to the same period of the previous year, where it was already down, following the sharp decline in the automotive sector⁷.

All in all, however, in manufacturing, there has been more growth than decline, as the negative dynamics are concentrated mainly in the automotive sector: the balance between the company shares indicating an increase in sales in the first nine months of the year and those reporting a decrease remained positive and equal to about 11%, a figure lower than the economic survey of 2018. The expectations for the next six months of the regional manufacturing companies remain mainly positive. The balance between the company shares that foresee a growth in turnover in the next six months, compared to current levels, and those that predict a drop was positive for about 18 percent. The trend in turnover will be affected by the evolution of sales in the motor vehicle sector. The dynamics of investments in manufacturing companies has continued to show moderate growth. Companies that have made investments in line with the Bank of Italy. Plans formulated at the beginning of the year- indicated a growth in the accumulation of capital for 2019 - represent over 60% of those interviewed; among the companies that have reviewed the plans prevail those that have made larger investments than planned.

⁷ <https://www.bancaditalia.it/pubblicazioni/economie-regionali/2019/2019-0039/1939-basilicata.pdf>

The decline in the manufacturing sector was associated with the mining sector in terms of added value affects about 1/3 of the total industry.

In the first eight months of 2019, the production of crude oil and natural gas - that had returned to the levels that preceded judicial events that had blocked mining in Val d'Agri, dropped again (respectively 10.7 and 6.0 % compared to the same period in the previous year).

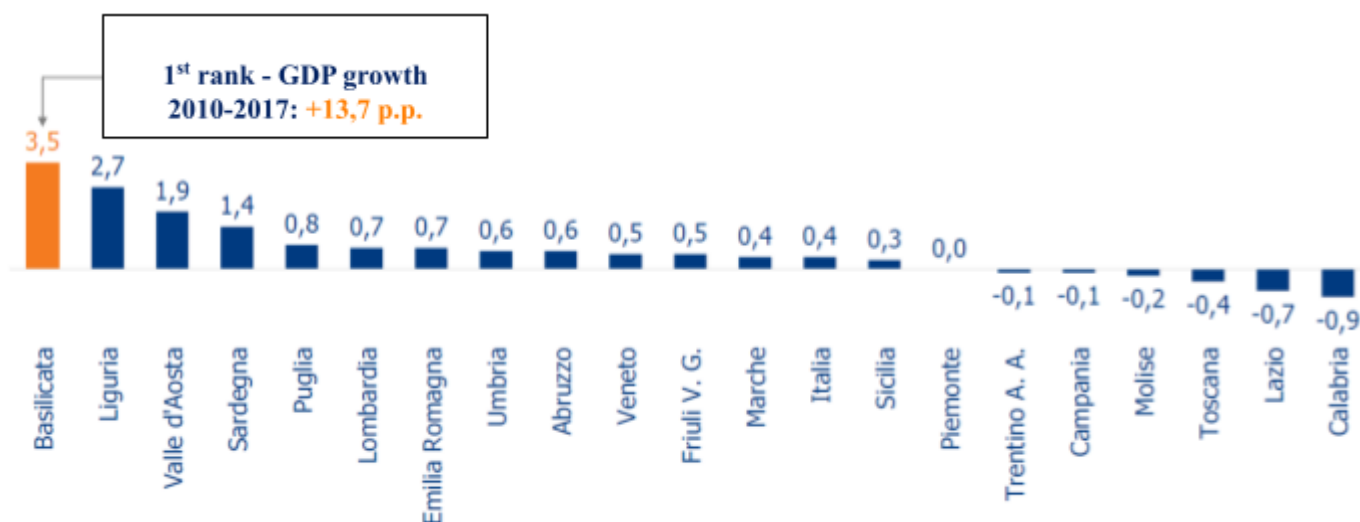


Figure 6. Growth GDP 2010- 2017⁸

Table 2. General information, Basilicata Region 2014-2019⁹

Indicators	2014	2015	2016	2017	2018	2019 ⁸
Size of territory <i>Square kilometres</i>	10 073.1105					
Population <i>Millions</i>	576.619	573.694	570.365	567.11	562.869	556.934
Real GDP per capita ¹⁰ euro	18 765	20 541	20 951	21 214	21 400	20 800
Growth of real GDP <i>% change¹¹</i>	f	8,9	2,7	1,1	1,1	-2,8

⁸ <http://basilicatadati.regione.basilicata.it/>

⁹ <http://basilicatadati.regione.basilicata.it/>

¹⁰ GDP per capita, a measure of economic production of a region or a country that accounts for its number of people. It divides the country's gross domestic product by its total population, and it is a good indicator of the standard of life

¹¹ Constant price estimates. In theory, price and quantity can be identified and the prices of the base period are substituted with those of the current period. In practice methods are used to calculate variables and constant prices. Another method, commonly indicated as price deflation, divides price indices into observed values to obtain volume

Population of active enterprises (1-9 employees) <i>number</i>	12.073	12.073	12.073	12.073	f	f
Population of active enterprises (10+ employees) <i>number</i>	997	997	997	997	f	f
Net business population growth - %	0,30	0,30	0,30	0,30	f	f
Unemployment rate ¹² <i>% of labour force</i>	14,73	13,69	13,28	12,81	12,85	10,8

The following table shows the growth rates of Basilicata compared to the national ones, currently with the other information in the report, Basilicata is slightly below the average with a strong acceleration in the capital sector.

Table 3. Birth rate, mortality rate and entrepreneurial development of the total number of registered companies and joint stock companies in Basilicata. Year 2018 (percentage values) ¹³

	Birth rate		Mortality rate		Business development rate	
	Tot. businesses registered	<i>Of which: Company capital</i>	Tot. Businesses registered	<i>Of which: company capital</i>	Tot. Businesses registered	<i>Of which: company capital</i>
BASILICATA	4,98	7,83	4,50	2,10	0,48	5,73
Italia	5,72	6,96	5,21	3,00	0,51	3,96

2.2. Digital economy and society

The following tables show the Desi index and Eurostat data on the digitization status and general competence in Basilicata. The digital economy and society index (DESI, in italian “Indice di digitalizzazione dell’economia e della società”) is an instrument that the European Commission

estimates. The price indices used are constructed from the prices of the main items of each value. Making sure that these series are in line with “GDP at constant prices.”

¹² Percentage of unemployed civilian work force. The government defines the unemployed as people without work, looking for work or available for work. The unemployed include those from 15 to 64 years of age who were: without work during the week in question, or did not have a job nor were they at work (for an hour or more) as subordinate or self-employed ; currently available for work, that is they were available for subordinate work or self-employed before the end of the two weeks after the week in question; actively seeking work, or having taken specific measures in a period of four weeks that ends with the week in question to seek paid or. Self-employed work or to have found work shortly to commence, within a maximum period of three months.

¹³BASILICATA REGION REPORT - Data and information on the state and evolution of the socio-economic profile of the territory 11.2019 - Siprint December 2019

adopted in 2014 to measure the level of digitization in the 28 member countries, ... 43.9.

Italy registers progress in all the dimensions of DESI from 2014 to today: connectivity, human capital, use of internet services, integration of digital technology and digital advertising services. However, such improvements are appreciable above all for that concerning “connectivity” and “Digital public services”.

DESI for Italy shows a tendency to growth, passing from DESI 28.9 in 2014 to DESI 43.9 in 2019. The distance from the European average (DESI 52.5) shortened a little in the last year is still wide and our country still holds 24th place in the ranking of EU countries, only ahead of Poland, Greece, Romania and Bulgaria.

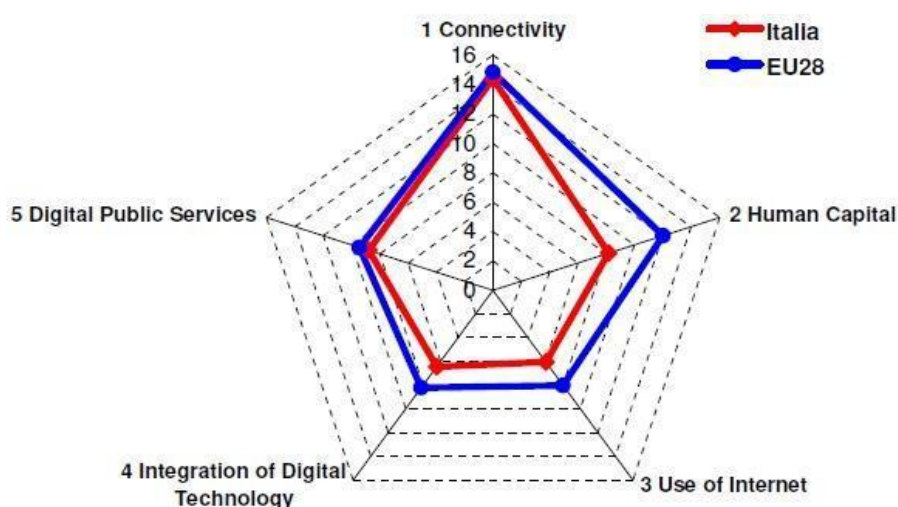


Figure 7. DESI Italy Vs EU

Table 4. DESI index and DESI areas, 2014-2019¹⁴

Indicators	2014	2015	2016	2017	2018	2019
DESI index	f	f	f	36,5	38,9	43,9
DESI: connectivity	f	f	f	43,4	46,5	57,6
DESI: human capital / digital competence	f	f	f	31,1	32,2	32,6
DESI: use of internet services by citizens	f	f	f	34,8	36,6	40,4
DESI: integration of digital technology by businesses	f	f	f	29,6	31,2	32,3

¹⁴ <https://ec.europa.eu/digital-single-market/en/desi>; https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=66946; <https://www.agendadigitale.eu/cittadinanza-digitale/desi-regionale-2019-litalia-digitale-e-divisa-in-due-e-lontana-dalla-ue/>; <https://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tgs>

DESI: digital public services	f	f	f	45,0	49,9	58,7
DESI: research and development ICT	f	f	f	f	f	f

In 2019, Italy ranked 24th among the 28 EU Member States in the European Commission's Digital Economy and Society Index (DESI). Italy is in a good position, although still below the EU average in connectivity and digital public services. Public online and open data services are readily available, and the spread of digital medical services is well established. Fast broadband coverage and the spread of its use are growing (even if the latter remains below average), while progress in super-fast connectivity is still very slow. Italy is well on its way to allocating the 5G spectrum, however three out of ten people still do not use the Internet regularly and more than half of the population does not have basic digital skills. This lack of digital skills is also reflected in a lower use of online services, where little progress has been made. Low demand affects supply and this implies a low online sales activity by Italian SMEs compared to European ones. However, Italian companies have a better score for the use of software for the exchange of electronic information and social media.¹⁵

At national level, Italy adopted the Strategy for Digital Growth 2014-2020 and the Strategy for Ultra Broadband in March 2015. In September 2016, Italy developed its Industry 4.0¹⁶ strategy, renamed National Industry 4.0 Plan¹⁷ in 2017, to better reflect the broad scope of the initiative, including both service sector companies and companies of the industrial sector. The current government has confirmed the maintenance of the National Industry 4.0 Plan (with the possibility of modifying some measures) and has renewed its support for the Digital Growth Strategy through an even more active political orientation (e.g. article titled 'Italy has its own National Strategy for Digital Skills'¹⁸).

The table 5 below reflects the available statistical data on the general regional digital economy and society available from the Eurostat database. Also in this case, the statistical data for 2019 could be available in mid-2020, but already from these data it emerges that Basilicata has a slow but progressive advance towards digitization, due to the still low diffusion of the internet in inland, rural areas.

¹⁵ <https://ec.europa.eu/digital-single-market/en/scoreboard/italy>

¹⁶ <https://www.mise.gov.it/index.php/it/transizione40>

¹⁷ https://www.mise.gov.it/images/stories/documenti/guida_industria_40.pdf

¹⁸ <https://innovazione.gov.it/notizie/articoli/l-italia-ha-la-sua-strategia-nazionale-per-le-competenze-digitali/>

Table 5. General regional digital economy and society statistics 2014-2019

Indicators	2014	2015	2016	2017	2018	2019
Households that have internet access at home <i>% of households with at least one member aged 16 to 74. The access of households to internet is measured as percentage of households where any member of the household has the possibility to access the internet from home.</i>	64	69	72	75	79	80
Household that has broadband access by NUTS2 REGIONS <i>% of households with at least one member aged 16 to 74. The availability of broadband is measured by the percentage of households that are connectable to an exchange that has been covered to support xDSL-technology, to a cable or to other broadband technologies.</i>	64	69	72	75	79	80
Individuals regularly using the internet by NUTS 2 regions <i>% of individuals 16-74 Regular users of the internet are persons who use the internet on average at least once a week, every day or almost every day</i>	48	55	61	62	68	66
Individuals who have never used a computer by NUTS2 regions <i>% of individuals 16-74 persons who have never used a computer (at home, at work or any other place)</i>	42	38	38	f	f	f
Individuals who accessed the internet away from home or work <i>% of individuals</i>	19	21	28	29	38	48
Individuals who ordered goods or services over the internet for private use in the last year by NUTS2 regions <i>% of individuals 16- 74 persons who bought or ordered goods or services (i.e. food, groceries, household goods, film, music, books, magazines, newspapers, clothes, sports, goods, computer software or hardware, electronic equipment, shares, financial services, insurance</i>	13	21	21	27	32	32

<i>travel or holiday accommodation, tickets, lotteries or betting and other) over the internet during the last year</i>						
Individuals who used the internet <i>% of individuals Frequency of internet access: once a day (including every day)</i>	48	55	61	62	68	66
Individuals who used the internet, frequency of use and activities <i>% of individuals internet use: selling goods and services¹⁹.</i>	f	55	61	62	68	66
Individuals who used the internet, frequency of use and activities <i>% of individuals. Internet use: civic or political participation</i>	f	f	f	14	f	f
Individuals who used the internet, frequency of use and activities <i>% of individuals internet use: internet banking²⁰</i>	14	19	18	22	25	20
Individuals who used the internet for interaction with public authorities <i>% of individuals internet use: interaction with public authorities</i>	14	17	17	16	17	18
Individuals who used the internet for interaction with public authorities <i>% of individuals internet use: submitting completed forms (last 12 months)</i>	11	12	12	11	14	10
Individuals who used the internet, frequency of use and activities <i>% of individuals internet use: participating in social networks (creating user profile, posting, messages or other contributions to Facebook, twitter etc.) Percentage of individuals</i>	32	34	40	41	45	39

3. Barrier and solution analysis of the digital transformation of SMEs

According to the Regional Innovation Scoreboard ¹⁷, the Lucanian innovative system, once purified from the effects of national “trend” (the indicators deriving from belonging to Italy) fits in the 129th position of the 195 European ones, in a quadrant that includes regions with a medium to low

¹⁹ Use of the Internet: Sale of goods or services <https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do>

²⁰ Use of the Internet: Internet banking <https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do>

capacity for innovation. The cluster of regions that are similar in capacity, along with other southern regions (Campania and Puglia), Greek regions, Cantabria, Murcia, Aragona in Spain, The Azzores.

The position of Basilicata is unsatisfactory though it appears to be improving: the total value of the RIS indicator increased by 23.8% between 2011 and 2019, reflecting an improvement of the innovative view of the region. More specifically, the score for innovative expenditure, not directly linked to intra-muros R&D, seems good compared to the Italian average. Such indicator measures the capacity to acquire innovation from the outside the region, without developing it within the firm (e.g., buying innovative machinery and equipment). Due to difficulty in providing internal R&D facilities, The Lucanian SMEs depend on sources outside the corporate perimeter to be able to advance technologically: this is all linked to the weakness of the local innovative system and the regional enterprises themselves.

More specifically, Lucanian companies are winners even if they do not have a strong propensity for innovation. The share of the company that has introduced innovation appears high and this is testified by the corresponding positive values of Lucan RIS. However, a lack of capacity remains in the territorial system to provide cooperation between innovative companies: the number of companies that innovate in collaboration with and involving the public research system is in fact reduced. The consequences of such weakness are therefore the external purchasing of innovative technology and a modest capacity to generate patents, i.e., high-level innovation production and “breakage”.

Table 6. Elementary indicators of RIS 2019: lowest values (orange) and highest (green), Basilicata region (for a total understanding of the indexes, please consult the Glossary in the appendix to the source)

Indicators	Normalized score
Population with tertiary education	0,268
Lifelong learning	0,200
Scientific co-publications	0,413
Most-cited publications	0,326
R&D expenditure public sector	0,446
R&D expenditure business sector	0,153
Non-R&D innovation expenditures	0,768
Product or process innovators	0,545
Marketing or organisational innovators	0,429
SMEs innovating in-house	0,575
Innovative SMEs collaborating with others	0,158

Public-private co-publications	0,186
PCT patent applications	0,129
Trademark applications	0,186
Design applications	0,269
Employment MHT manufacturing & knowledge-intensive services	0,477
Sales of new-to-market and new-to-firm innovations	0,689

Notwithstanding the above information and other information obtained from reports shown that the following barriers are existing:

- Low digital maturity, lack of knowledge about digital opportunities and their advantages and limited capacity to adapt to technology and know-how that is rapidly developing.
- Partial access to the internet in regional territories.
- “School migration” - University migration students.
- Insufficient potential for innovation of SMEs.
- Difficulties in accessing Italian and foreign markets *due to the* (scarce regional competence for internationalization).
- The bureaucracy of the Public Administration is slow and complex.
- Low skills in R&D.
- Limited capacity to take on specialists and/or professionals in ICT to manage digital strategy or guide organizational change.
- The tendency to concentrate digital competence in urban areas can lead SMEs in rural areas to experience a double digital divide.
- Difficulty in coordination between the structures deputized for innovation and digital development.

Table 7. Barriers and Solution Matrix

Title of barrier	Brief barrier description (up to 25 words per each barrier)	Identified solutions, if any (up to 40 words per each solution)	Where to find it in a particular document or publication (e.g. page No., or Table No.)
Awareness Rising & Collaboration			
Low digital maturity	Lack of knowledge on the digital opportunities and their advantage, and limited capacity to adapt technology and know-how that is rapidly developing.	Territorial institutions of DIH and PID (<i>best practices described in the section of Good Practices</i>)	National plan” IMPRESA 4.0 www.unioncamere.gov.it/uploaded/General/communication/firstPlan/2017/enterprise4019September2017.pdf
No collaboration of regional innovation system	Difficulty in coordinating the interoperability of structures delegated to innovation and digital development.	Various focus groups and discussions have been started with associations and clusters for S3	Internal document analysis of Sviluppo Basilicata
Enabling Corporate Environment & Capacity Building			
Partial internet access in the regional territory	Even though in the past there have been large investments made for infrastructure for internet connection given the Lucanian orographic. There are still areas without ultra-fast connectivity.	Italian strategy for ultra-broadband, aiming to reduce the infrastructural gap and existing markets by the creation of conditions favourable to the integrated development of the infrastructure of fixed and mobile telecommunications and represent the national framework for public initiative and support for the development of ultra-broadband	PROGRAMME AGREEMENT, FOR THE DEVELOPMENT OF ULTRA BROADBAND (In implementation of Delibera Cipe 6 august 2015, n.65 of the agreement framework between government and region of 11 February 2016)

		networks, to satisfy aims laid down by the European digital agenda by 2020	
Limited hard and soft skills	Limited capacity to take on specialists or ICT professionals to manage digital strategy or guide organizational change.	Strengthening of training offer by the institution of new university and academy degree courses.	Skills report “Report Regione Basilicata (Chamber of Commerce)” ²¹
Insufficient innovation potential of SMEs	Insufficient innovation capacity is a result of several factors – urban rural divide, brain drain, lack of financing, lack of visions for business etc.	Development ultra-broadband internet infrastructure even in internal areas and strengthening of training offer with the institution of new university and academy degree courses.	Produced document on digitalization improvement hypotheses of Think tank Basilicata ²² (stakeholder and already introduced)
<u>Administrative & Technical & Legal</u>			
Slow and articulated bureaucracy	Bureaucratic processes, being notoriously complex, slow down operations	National plan	-Digital transformation of public administration -Teamdigitale.governo.it
<u>Financial & Economic</u>			
Difficulty in accessing Italian and foreign markets	Poor development of physical transport infrastructures and insufficient international expertise of local consultants make access to		Produced document on digitalization and improvement hypotheses by Think tank Basilicata (stakeholder already introduced)

²¹https://www.basilicata.camcom.it/sites/default/files/contenuto_redazione_isin/notizie/file/report_regionale_basilicata_5_12_19_invio.pdf

²²https://www.ambrosetti.eu/wp-content/uploads/TTB_POSITION-PAPER_2020_single.pdf

	EU markets difficult		
Policy & Security			
Concentration of digital competence in urban areas	The tendency to concentrate digital skills in urban areas could bring the SMEs in rural areas to experience a double digital divide (urban-rural gap).	Development ultra-broadband Internet infrastructure even in internal areas	PROGRAMME AGREEMENT FOR THE DEVELOPMENT OF ULTRA BROADBAND (In implementation of <i>Delibera Cipe</i> 6 August 2015, n.65 of the agreement framework between government and region of 11 February 2016)
Brain drain	Poor supply of study subjects within the HEI (limited no of study programmes?) and professional development.	Strengthening of training offers with the new university and academy degrees	Document produced on digitalization and improvement hypotheses by Think tank Basilicata (stakeholder already introduced) https://www.dire.it/24-06-2018/215007-svi-mez-sud-tre-miliardi-emigrazione-universitaria/

To overcome the barriers tools and useful strategies must be identified and through consultation on the part of the stakeholders.

4. Main stakeholders of the region

The main stakeholder for the development and innovation in the region is “Sviluppo Basilicata” the financial regional company with in-house strategic development action plan in Basilicata. It is a member of regional development activities for the implementation of regional, national and community programmes entrusted by Basilicata for the creation and development of regional entrepreneurship in consistency with regional policy and programming acts.

The corporation operates on behalf of the Basilicata and is assigned to all activities that meet corporate purposes, according to in-house providing. It carries out activities that are instrumental to the functioning of the Region – a financial kind and services that support the development, research, and competitiveness of regional territory.

Other stakeholders that contribute to the growth of Basilicata are listed in the Table 8.

Table 8. List of stakeholders

Organization	Contact data
Sviluppo Basilicata (DigiBEST <i>Project Partner</i>)	Dott.ssa Patrizia Orofino Sviluppo Basilicata SpA- Business Unit Internationalization Sector, territorial development and incubators t: +390971506652 skype: Orofino svlbasilicata e: patrizia.orofino@sviluppobasilicata.it www.sviluppobasilicata.it
BASILICATA REGION- INNOVATIVE OFFICE	http://attributi.regione.basilicata.it/organigramma/public/s/00001/00015/000AB
BASILICATA REGION- MANAGING AUTHORITY ERDF	http://attributi.regione.basilicata.it/organigramma/public/s/00001/00012/000AF
BASILICATA REGION- MANAGING AUTHORITY ESF	Address: via Vincenzo Verrastro 8, 85100 Potenza E-mail: adg_fse@regione.basilicata.it PEC: adg_fse@cert.regione.basilicata.it
TERN CONSORTIUM	https://www.tern.it/le-sedi/
IBAM CNR	Address: C.da S. Loja - 85050 Tito Scalo (PZ) Tel: +39 0971 427.322 Fax: +39 0971 427.333 E-mail: segreteria@ibam.cnr.it
GEODESY SPACE CENTRE	Address: Contrada Terlecchie 75100 Matera (Italy) Tel: +39 0835 375 1 Tel: +39 0835 375 422 E-mail: info.cosmo@e-geos.it
CONFINDUSTRIA BASILICATA	Address: Via Di Giura - Business Center 85100 Potenza Tel: +39.0971.292911 Tel: +39.0971.292964 E-mail: info@confindustria.basilicata.it
CNA	Address: Via Isca del Pioppo/A 144 85100 – Potenza (PZ) Tel: + 39 0971/50148 E-mail: basilicata@cna.it
CONFAPI MATERA	Address: P.zza Mulino 19/G – 75100 MATERA Tel: 0835.335181 E-mail: info@confapimatera.it
CONFAPI POTENZA	Address: Via Addone n.17 – 85100 Potenza Tel: +39 0971.34621 E-mail: api@apipotenza.it
CONFIDI	Address: Via dell'Edilizia, 13, 85100 Potenza PZ Tel: +39 0971 55441 E-mail: info@cofidisviluppoimprese.it

CHAMBER OF COMMERCE OF BASILICATA	Address: Corso XVIII Agosto, 34 - 85100 Potenza Tel: +39 0971/412211 https://www.basilicata.camcom.it/urp
UNIVERSITY OF BASILICATA	Address: VIA NAZARIO SAURO 85 - 85100 POTENZA Tel: + 39 0971 202011 HTTP://PORTALE.UNIBAS.IT/SITE/HOME.HTML

To communicate with the stakeholders listed in the table, please refer to the contacts of Sviluppo Basilicata.

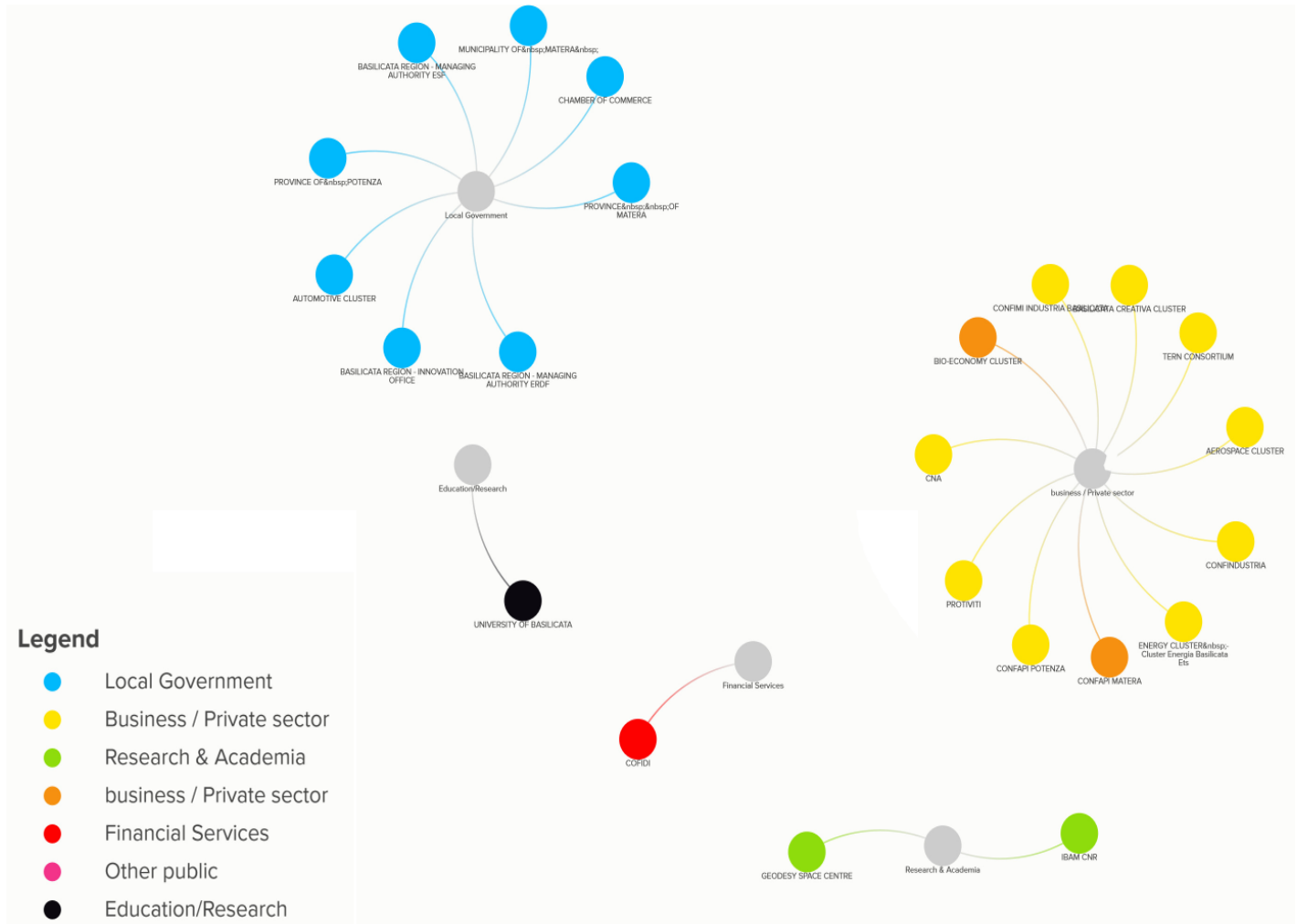


Figure 8. Stakeholders map²³

In conclusion, Basilicata proves to have a very wide and varied ecosystem that supports innovation, with regional political control as described in the following paragraphs, it being understood that greater cohesion must be achieved between all stakeholders, as this also constitutes a barrier to development internal (Awareness Rising & Collaboration).

²³ <https://kumu.io/>

5. SWOT Analysis

The SWOT analysis includes two groups of factors:

- 1) Internal factors - the strengths and weaknesses within a region (organization etc.)
- 2) External factors - opportunities and threats coming from outside the region (organization etc.)

SWOT analysis identifies the following:

- Strong points: characteristics (factors of the development of digitalization of SMEs, main success factors, points of strength regarding digital transformation of SMEs in your region.
- W- weaknesses (or limitations); factors that present disadvantages for the digital transformation of SMEs
- O- opportunity: the possibility (factors) to improve the digitization of SMEs and its economic impact.
- T- threats: elements (factors) for the digitization of SMEs (and the economy in general) that could cause problems for economic development.

Table 9. SWOT Analysis.

Internal Factors	
Strengths	Weaknesses
1. Regional programming-policies dedicated to overcoming the digital divide (improvement of the connectivity of the production areas, with priority for the industrial ones, and of the Public Administrations, and implementation of innovative services intended for citizens and the business world (such as electronic invoicing and payments, ultra-broadband))	1. Despite improvements, persistence of the gap on ultra-broadband and services and of the digital divide and infrastructural deficiencies in ICT
2. Good capacity/supply? 'of qualified human capital	2. Low capitalization of SMEs (associated with credit crunch) depresses investments, above all in innovation
3. Significant presence of research centers of recognized international value	3. Small business owners usually don't have sufficient digital skills
4. Good diffusion of Information and Communication Technologies in the public administration and digitization of administrative processes	4. Regional production model represents sectors in crisis or attacked by competition from emerging economies, consisting essentially of small businesses not inclined to network aggregations, which does not promote innovation and absorption of young people with a high level of education
5. High levels of education of the youth population	5. Young brain drain (loss of young graduates: -33.9 % for 2017. Due to migration to larger cities and better developed regions

6. Good possibilities of financial support for SMEs to improve digital skills or acquire know-how (public funds, e.g. delivery of vouchers for the purchase of services for technological, strategic, organizational and commercial innovation, and the adoption of digital technologies through a public notice addressed to SMEs for the purchase of highly qualified services and skills aimed at increasing its competitiveness and innovation in line with the regional S3)	6. Low private R&D investr.....
7. Political 'acknowledgement' on the necessity of increasing digital skills in micro and SMEs	7. Lack of digital transformation experts in the region
	8. Low expenditure on innovation: the 'innovative' expense ratio for businesses in Basilicata is largely underpowered compared to the rest of Italy
	9. Low propensity for business cooperation
	10. Percentage of graduates still insufficient especially in technical-scientific subjects
	11. Lack of integration between school / university courses and companies, specifically the training provided fails to guarantee the skills required by Lucanian companies.
	12. Lack of awareness about the importance of digital solutions, in particular in micro companies
	13. No coordinated/integrated approach towards digital transformation in the region
External Factors	
Opportunities	Threats
1. Financial public support for SMEs (not always used) (National line)	1. Non-efficiency of the offered support instruments for digitalisation (e.g., Vocational Training)
2. Increase in partnerships and collaborations between companies and the world of research (regional clusters: agri-food, green chemistry, aerospace).	2. Discrepancy between the 'out of date' education system and the SMEs' needs of updated digital skills
3. Possibility to improve the efficiency / effectiveness of the public Governance of partnership models of business development and research	3. Low level of generational turnover
4. Good birth rate of spin-offs from the research centers of the University of Basilicata.	4. Increase of the phenomena of depopulation and brain drain

4. Elimination of brain drain phenomena through the strengthening of the regional research ecosystem	5. Decrease in public funding for SMEs
5. Presence of a Digital Innovation Hub (DIH) at SMEs' disposal in Confindustria (the main business association representing manufacturing and service companies in Italy)	6. Great competition from international companies
6. Growth of the benefits associated with ICT	
7. Creation of new professional skills (funding through community programs).	
8. Regional programming dedicated to overcoming the digital divide: 'Large Digital Agenda' project of the Basilicata Region (local line)	

6. Politics and support tools for the digitization of SMEs

The aim of this chapter is to explain the importance of a legal framework for the development of entrepreneurship (SMEs) in our region and the meaning of the political tool which is targeted in a framework of the Project DigiBEST.

6.1. Regional strategy for the innovation and smart specialization 2014-2020-S3 Basilicata²⁴

The Strategy of Smart Specialization (S3) is an agenda of economic transformation guided by a Vision that is consistent with the European strategy conceived to systemize research and innovation policies and to develop productive areas of excellence based on strategic positioning at national and international levels. In the cohesion policy of 2014-2020, the tuning of research and innovation strategies for “smart specialization” constitutes an ex-ante conditionality for the use of community resources. In this sense, through the drafting of the document for Smart Specialization the regions are obliged to choose a position and a path that links the research system with the productive and social one and the entire innovative system with the European one.

S3 in Basilicata²⁵

While drafting its own Smart Specialization Strategy, Basilicata Region has done a meaningful path by performing territorial analysis and listening to stakeholders. A similar path has brought out many criticisms, vocations, identities, and economic stratifications. Among the identified strengths: the presence of important production centres (automotive, agro-food, craftsmanship, and design), a significant presence of research centres of international importance as well as the University of Basilicata. Among the opportunities that should be emphasized: the rise in the forms of partnerships and collaboration between the business and research worlds, through the regional clusters, agri-food, green chemistry, aerospace industries; the hope of tourism with the favourable image of “Basilicata- Matera - City of culture 2019”, as well as in the production system caused by the

²⁴ <https://bandaultralarga.italia.it/mappa/?entity=17>

²⁵ <https://bandaultralarga.italia.it/strategia-bul/strategia/>

BASILICATA

The Intelligent Specialization Strategy (S3) represents a revolution in European programming philosophy. It places socio-economic development managed through a new multilevel governance model at the center of the interventions and aims at introducing an industrial policy by sectors and production specializations driven by innovation.

EMPLOYEES OF THE SECTORS OF THE REGIONAL S3 STRATEGY

Variations % 2014/2018



INTERVENTION TOPICS OF COHESION POLICIES FOR BASILICATA AND ITALY

Payments monitored in the 2014–2020 programming cycle
(values in%)

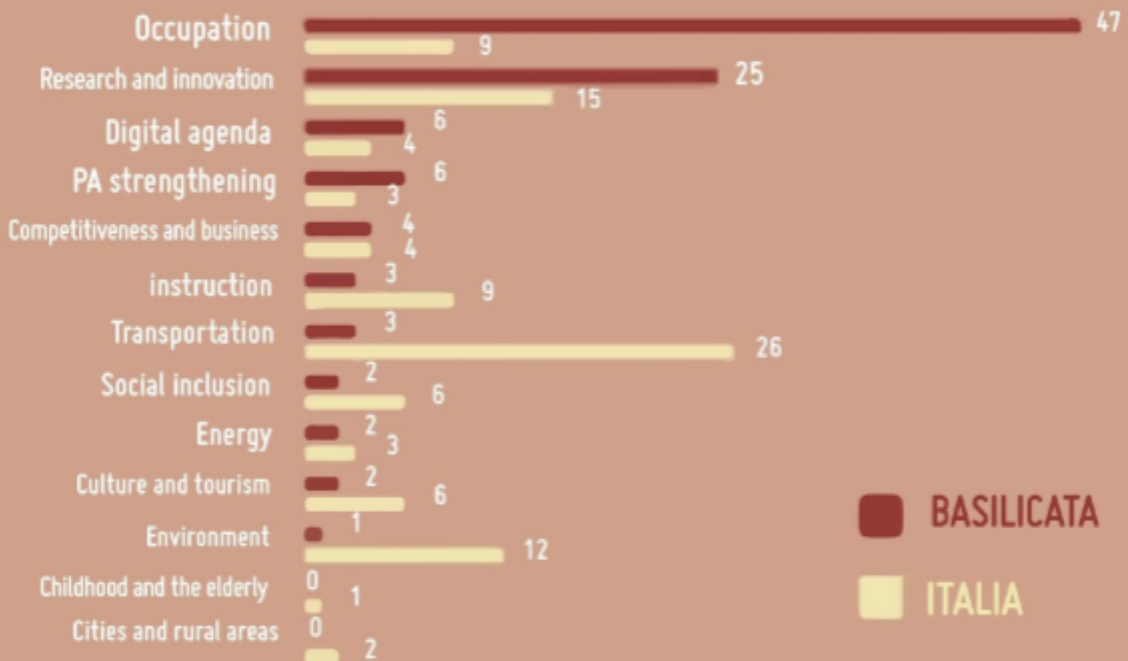


Figure 5. Graphic representation of the effects of S3 in Basilicata

6.2. Main characteristics of national, regional, and local politics towards SMEs

2019 was a turning point in the field of innovation for Italy, because, in addition to the efficient Ministry of Economic Development (MISE - the national ministry of the Italian government which includes industrial policy, international trade, communications and energy) and considering the strong push to be given to the digitalization of the Country, the new Ministry of Technological Innovation and Digital Transition (MITD) has been established (ref. <https://innovazione.gov.it/>). The new Ministry is in fact in charge of supporting the Prime Minister "for the promotion and coordination of government actions aimed at defining a unitary strategy for digital transformation and modernization of the country through digital technologies".

The innovation strategy prepared by the ministry in charge has its roots in the United Nations Sustainable Development Goals (SDGs), whose analysis led to the identification of three main challenges²⁶:

- the digitalization of the civil society,
- the innovation of the Country,
- the sustainable and ethical development of the whole society.

Three aims that can be achieved through concrete actions: the first twenty actions (+1) for innovation and digitalization in the section "Plan of action" of the innovation strategy²⁷, represent a starting point.

The ministerial strategy describes a process of radical structural transformation in Italy, from digital infrastructure to public administration services, to collaboration between the public and the private sectors to generate innovation. Coordinated work to be carried out through the "directory team" established with other ministries and coordination tables with the territories (municipalities and regions), boards, central agencies, and private subjects.

The actions will be developed together with the territories (municipalities and regions) with direct support in the implementation of the digitalization projects and in the creation of projects ad hoc to pull innovative services into line with the needs of the area. The implementation of the strategy is based on the use of various financing funds, in particular:

- Funds destined to innovation in budgetary manoeuvre;
- Funds that are not yet reserved, destined for national and European programmes (e.g.: PON funds, Pon gov, cohesion funds);
- Funds that are already available or for new programming periods thanks to a renewed collaboration with the civil service department.

The Regional Department entitled to deal with innovation and digital issues is Department of Development, Job, Training, and Research policies, "Dipartimento Politiche Di Sviluppo, Lavoro, Formazione e Ricerca" whose main tasks are:

²⁶ <https://assets.innovazione.gov.it/1610546390-midbook2025.pdf>

²⁷ <https://docs.italia.it/italia/piano-triennale-ict/pianotriennale-ict-doc/it/2020-2022/index.html>

- Programming of regional politics for the promotion and development of production,
- Access to credit,
- Development and promotion of innovation, industrial research, and technological transfer for companies, in agreement with the department “Coordination of European development policies, Schooling, professional training, university, research and labour” for activities that involve the university,
- Integration policies and of coordination of industrial research networks,
- Development of employment and qualification for self-employment and professions,
- Development of craftsmanship, of cooperation, of industry and of services,
- Institutional Relations with the Chamber of Commerce,
- Coordination and management of the programme PoFesr.

The department is supported by Sviluppo Basilicata (already described in Chapter “Stakeholders”) and by T3 innovation²⁸ that comes from a public evidence procedure announced in December 2015 by the Region of Basilicata “for the assignment of strategic and management consulting service in the field of technology transfer aimed at enhancing the innovation potential of the Lucanian production system”; offering support in defining experimental development projects and in technological enhancement, also through the verification of solutions for the protection of intellectual property, the creation of synergy with scientific partners able to provide avant-garde solutions and with international players in order to favour international paths. T3 Innovation terminated the assignment in January 2020.

Table 10. Regulatory acts at national level, regional and local level which regulate digitalization

National level
<p>“Italia 2025” - https://innovazione.gov.it/dipartimento/cosa-facciamo/italia-2025/</p> <p>National funding actions - https://www.mise.gov.it/index.php/it/per-l-impresa</p> <p>“Ambiti tecnologici della Smart Specialisation Strategy nell’ industria italiana” (RSI3)- https://www.agenziacoesione.gov.it/wp-content/uploads/2019/11/Report_MET_ambiti-tecnologici.pdf</p>
Regional level
<p>STRATEGIA REGIONALE PER L’INNOVAZIONE E LA SPECIALIZZAZIONE INTELLIGENTE 2014-2020 (RIS3 of Basilicata Region): https://s3platform.jrc.ec.europa.eu/documents/20182/225192/IT_Basilicata_RIS3_201508_Final.pdf/c70a3f9e-ea3d-4717-a7f6-16919e047f79</p> <p>Repository general: https://www.regione.basilicata.it/giunta/site/giunta/department.jsp?dep=100055&otype=1101</p>

²⁸ <https://www.regione.basilicata.it/giunta/site/Giunta/detail.jsp?otype=1012&id=3046559> <https://t3perleimprese.com/>
 DigiBEST – Basilicata Pag. | 29

The Open Cohesion portal monitors the implementation of the cohesion policies of the 2014-2020 programming. https://opencoesione.gov.it/en/territori/basilicata-regione/?ciclo_programmazione=2
Local level
n/a

6.3. Support instruments to promote SMEs digitalization

The ERDF Operational Programme (OP) of the Region of Basilicata 2014-2020²⁹ concentrates on 8 priorities for intervention (axes), each one focused on a thematic objective (TO) of Europe Strategy 2020, to which technical assistance is added for the management of OP (Axis 9).

All 9 axes are closely linked to digitization and provide a complete picture of all actions implemented at regional and national level to achieve the EU objectives, and also serve to better relate the result indicators chosen under the DigiBEST (table 11) and that is to reach, raise awareness and update the largest number of Lucanian companies on digitization especially with the influences, best practices, and advice and whatever else the other partners will provide us.

The realization of OP contributes to a more inclusive growth, because it is orientated to favour social and territorial cohesion, more dynamic and intelligent, because it is based on knowledge, creativity and innovation and innovation and more sustainable because it is more efficient in terms of resources, “greener” and more competitive. Financial allocation consists of 75% community resources (ERDF) and the remaining part by state and regional resources.

In consistence with the principle of “thematic concentration” (“ring Fencing”) established by the Regulation (EU) n. 1301/2013, on the first four priority axes (research, innovation and technological development, Digital Agenda, business competitiveness and energy) about 56% of the resources were allocated. Particular attention was paid to SMEs providing for its facility about 23% of the total allocation.

The OP is implemented also using integrated territorial investments (ITI), that is through strategies used by the interested territories.

- Two ITI “Urban Development” for the cities of Matera and Potenza, in order to reinforce the propulsive role of the city centres in terms of development and service provision on a territorial scale mainly for the city of Potenza, as well as to enhance the cultural heritage and the creative business potential for the city of Matera.
- One ITI relative to the four” internal areas” to incentive local development, block depopulation and guarantee the rights of citizens by improving essential services for health, education, and transport.

To ensure the efficiency of the investments and reach the expected results, community regulations have been established in the new programming for the essential prerequisites for the choice of legal

²⁹ <http://europa.basilicata.it/fesr/>

and programming measures (cd “on a conditional basis”) of national and regional competition plans, as, for Basilicata, the drafting and adaption of plans for research in transport and waste disposal.

AXIS 1 - RESEARCH, TECHNOLOGICAL DEVELOPMENT, AND INNOVATION (OT1)

Axis 1 is designed to develop the regional research system and the capacity for innovation in Lucanian businesses with reference to areas identified in the “regional strategy for smart specialization” (S3): Aerospace; Automotive; Bioeconomy; Energy; cultural and creative industry and Digital Agenda. The aims of this the Axes will be mainly reached through:

- Strengthening the research infrastructures as an innovation driver throughout the region and an attractive strategic factor for researchers and businesses.
- Support for business investments in research and innovation, development of technological clusters, provision of specialist services supplied by technology transfer intermediaries and reinforcement of the application for innovation by P.A. (Public Administration) through instruments such as the pre- Commercial Procurement.

AXIS 2 - DIGITAL AGENDA

The challenge of axis 2 is to overcome difficulties in accessing the network by eliminating the digital divide and spreading ultra-broadband throughout the regional territory in favour of P.A., of the citizens and companies. Other aims of the Axis are:

- The realization of the so called “digital public administration” using technological solutions for the innovation of processes within the various areas of the PA within the framework of the public connectivity system (technological solutions for the digitalization and dematerialization of administrative processes and action for the development of a digital health service);
- The realization of innovative services for citizens and the business world (such as electronic invoicing and payment).

AXIS 3 - COMPETITIVENESS (OT3)

Axis 3 contributes to the development of businesses and the competitive repositioning of production-territorial segments in Basilicata. The aims in the axis will be achieved mainly through:

- Supporting new businesses.
- Regeneration of local productive systems that are in the most difficult situation.
- Supporting functioning businesses that are in the five areas of the regional strategy specialization S3.
- Supporting the internationalization of Lucanian businesses and the creation of functioning business networks for the promotion of integrated tourism products.
- Supporting third sector businesses that develop public utility services.
- Activating financial engineering tools to overcome difficulties with SMEs and to access credit.

AXIS 4 - ENERGY AND URBAN MOBILITY

Axis 4 - is mainly aimed at promoting a more efficient use of energy in industrial areas, in businesses and in public buildings, as well as the expansion of energy production from renewable sources and the increase in sustainable mobility in urban areas.

It intends:

- To improve energy performance in businesses and in productive structures by supporting investments in technology for energy efficiency in corporate structures and for the realization of energy production plants from renewable sources for self-consumption;
- To cut down energy costs in productive settlements by supporting investment in energy efficiency networks and services provided for the benefit of businesses located in industrial and artisan areas;
- To improve energy performance in Public administration properties, through restructuring and installing remote control systems, adjustment, management, monitoring, and optimization of energy consumption (Smart buildings);
- To strengthen and improve collective mobility and transport in Potenza and Matera.

AXIS 5 - SAFEGUARD OF THE ENVIRONMENT AND EFFICIENT USE OF RESOURCES

Axis 5 contributes significantly to overcoming the structural and organizational gap in the integrated waste cycle, responding to the obligations of Union legislation on the environment and water, implementing projects for cultural and environmental enhancement and of tourist attractions.

It will:

- Reorganize regional management systems for urban waste, strengthening and modernizing regional plant engineering in terms of treatment and recovery of waste and improving recycling.
- Improve storage and network distribution of water resources; considerably reduce system losses; raise the standards of supply services; improve the regional purifying systems
- Promote the attraction of Basilicata by increasing the usability of architectural and cultural heritage and by giving substance to the “attractions”;
- Promote the safeguard and enhancement of areas of natural beauty of strategic importance and the regional ecological network.

AXIS 6 - TRANSPORT SYSTEMS AND NETWORK INFRASTRUCTURE (OT7)

Axis 6 contributes to the improvement of the regional railway network and secondary and tertiary viability, favouring the regional “internal Areas”, to ensure shorter accessibility times to the networks TEN-T than those currently available.

It will:

- Improve the connection of the secondary and tertiary nodes in the “internal areas” with the main roads and railways;
- Strengthen regional and interregional public transport services on routes with significant potential, also through infrastructural and technological interventions, renew rolling stock, promote integrated electronic ticketing.

AXIS 7- SOCIAL INCLUSION (OT9)

Axis 7 contributes to the improvement of structures and services in favour of those disadvantaged and financially fragile

Investments are planned:

- To provide more nursery schools and integrated early childhood services as well as strengthening and rationalizing residential services for minors and providing assistance for young people.
- To strengthen services for the elderly, both residential such as lodging houses, and facilities for the self - sufficient and non-residential such as day and intergenerational centres.
- To consolidate residential offers for the disabled and strengthen the facilities for mental health.
- To improve primary health and social health care.
- To implement new technology at territorial offices and reorganize the access welfare network and construction of services according to a logic “community hospital”, also promoting telemedicine.
- To modernize and strengthen territorial emergency networks in non-urban areas to reorganize and improve first aid services, and through the increase in technological equipment and the use of ICT tools.

AXIS 8 - STRENGTHENING THE EDUCATION SYSTEM

Axis 8 contributes to the improvement of conditions in scholastic institutes and also their facilities so as to contain the risk of school leaving and so raise the number of citizens that have the skills useful to them in the job market. Investments are planned to:

- Redevelop school buildings ensuring increased safety, a better energy performance in the buildings, improvement in sports facilities and room for laboratories.
- Adjust the facilities, spaces, and technology available in schools to favour innovative learning approaches and also strengthen “digital school”.

Table 11. Partner policies DigiBEST proposed for improvement and self-defined performance indicators

Political documents	Self-defined performance indicators	Aims
5. ERDF Programme investments in the growth and employment Region of Basilicata 2014-2020 - Operative programme for the use of ERDF funds.	Number of SMEs supported by awareness raising actions and business support activities.	50

Let us consider Table 10, the results achieved are reported below. The ERDF OP Basilicata 2014/2020 has a budget of € 550.688 million and is divided into 9 priority axes.

In detail, the expenditure objectives to be pursued are the EU objectives as of 31 December of each year established on the basis of the so-called N+3 rule (automatic decommitment) of EU Regulation no. 1303/2013. The expenditure targets were met both as of December 31, 2018 and December 31, 2019.

The cumulative public expenditure target as of December 31, 2020 is 202.866 million euros (of which 152.149 million euros from the EU and 50.717 from national co-financing). This target has already been achieved since the certified expenditure as of November 26, 2020 amounts to 258.950 million euros, registering an increase of over 60 million euros compared to what was certified in December 2019.

The cumulative public expenditure target as of December 31, 2021 is 261.717 million euros (of which 196.287 million euros from the EU and 65.430 from national co-financing). This objective, based on current certification data, has almost been achieved.

A total of 233 selective procedures have been activated (calls for proposals, calls for proposals, expressions of interest and program agreements/negotiated procedures). As part of these procedures, 17,319 projects were selected and admitted to funding for an admitted cost of around 615.135 million euros, of which

- 16,512 projects falling under the category of aid;
- 807 projects falling under the category of works and/or supply contracts.

The payments reported by the beneficiaries, as of December 10, 2020, amount to 288.747 million euros, equal to approximately 52% of the endowment.

The progress of expenditure during 2020 was ensured by constant support and discussion with the beneficiaries by the regional structures, also during the COVID 19 emergency. In this phase, on the one hand, ordinary monitoring, control and reporting activities were ensured; on the other, some measures connected with the emergency were activated.

In particular, in March 2020, until the end of the state of emergency caused by Covid-19 and the restoration of normal operating conditions for the beneficiaries/implementers, the ordinary or peremptory deadlines relating to the start and/or conclusion of numerous regional projects were suspended, falling within the category of public works and supply contracts, including aid of

general economic interest (SGEI) provided to bodies that carry out works of public utility, financed on the basis of the selective procedures of the Basilicata 2014/2020 ERDF ROP and the Basilicata 2014/2020 OPC (cf. D.G.R. no. 204 of March 27, 2020). This resolution also established that the Administrations and Implementing Bodies/Beneficiaries of the projects in question adopt any organizational measures suitable for ensuring, in any case, the reasonable duration and rapid conclusion of the activities and procedures connected with the operations, with particular reference to the activities (technical, administrative and financial) that can also be carried out thanks to the use of forms of agile work (smart working).

Table 12. Po-Fesr Economical result ³⁰

Progress of the PO FESR Basilicata 2014-2020 - Data at 29 December 2020

Axis	Current endowment POR (Decision 2020)	Number of activated procedures	Number of projects selected	Certified expense at 31.12.2019	Certified expense at 26.11.2020	Certified expense at 29.12.2020	Expense reported by the beneficiaries at 29.12.2020	%	
	a	b	c	d	e	f	g	h=g/a	
1	RESEARCH AND TECHNOLOGICAL DEVELOPMENT AND INNOVATION	61,588	13	184	7,964	9,926	10,575	11,097	18,02%
2	DIGITAL AGENDA	25,458	13	141	16,483	18,242	18,599	18,77	73,73%
3	COMPETITIVENESS	189,772	32	16.032	61,441	92,797	93,958	107,981	56,90%
4	URBAN ENERGY AND MOBILITY	66,75	20	273	22,322	27,626	29,198	29,365	43,99%
5	ENVIRONMENTAL PROTECTION AND EFFICIENT USE OF RESOURCES	73,761	47	309	24,73	29,585	30,622	36,76	49,84%
6	TRANSPORT SYSTEMS AND NETWORK INFRASTRUCTURES	49,206	10	79	26,401	33,698	35,433	36,287	73,74%
7	SOCIAL INCLUSION	40,116	43	162	13,92	15,37	15,934	17,494	43,61%
8	STRENGTHENING OF THE EDUCATION SYSTEM	22,015	20	105	11,128	15,001	17,249	18,86	85,67%
9	TECHNICAL ASSISTANCE	22,021	35	34	14,407	16,706	17,771	17,936	81,45%
TOTAL		550,688	233	17.319	198.795	258,95	269,338	294,551	53,49%

Source: Regional Monitoring Information System

³⁰ <http://europa.basilicata.it/fesr/>

7. Analysis and identification of good practices

Table 13.1. Best practice

Good practice general information	
Title of good practice	<i>Digital Innovation Hub Confindustria Basilicata (DIHB)</i>
Category of good practice	Awareness raising and collaboration;
Organization responsible for good practice	<i>Confindustria Basilicata</i>
Description	
Short summary of the practice	<i>DIHB is an informative and consulting office for the transfer of technological innovation and digital transformation</i>
Resources needed	<i>Budget for 1 Innovation Manager € 60.000,00 (Expert Staff) per year</i>
Timescale (start/end date)	<i>01/10/2019 – ongoing</i>
Evidence of success (results achieved)	<p><i>Since establishment of the DIHB, the innovation manager conducted 16 territorial digital assessments (16 companies checked-up) in Basilicata Region.</i></p> <p><i>In the result of these assessments, the DIH was able to collect data for various productive sectors and to start aggregate projects aimed at improving manufacturing, business and controls processes by driving companies toward the new industry 4.0 paradigm set up by the Italian Ministry of Economic Development.</i></p>
Potential for learning or transfer	<i>The possibility to have a one stop-shop where to find high qualified experts in the transfer of technological innovation and digital transformation at company's disposal free of charge.</i>

Table 13.2. Best practice

Good practice general information	
Title for good practice	<i>PUNTO IMPRESA DIGITALE – Digital Business Points (PID)</i>
Category of good practice	Awareness raising and collaboration;
Organization responsible for good practice	<i>Chamber of commerce Basilicata</i>
Description	

Short summary of the practice	<i>Digital Business Points - an initiative of Unioncamere (Italian Chambers of Commerce) aimed at supporting the digitalization of SMEs</i>
Resources needed	<i>Budget 2020</i> <i>€ 373.982,85 (Internal cost €18.130,18; external cost €198.780,00; voucher €157.072,67)</i> <i>Chamber of Commerce of Basilicata</i> <i>Experts Staff: 5 Digital Promoters, 3 Coordinators, 1 leader</i>
Timescale (start/end date)	<i>November 2017 – On Going</i>
Evidence of success (results achieved)	<ul style="list-style-type: none"> - <i>more than 600 entrepreneurs have benefited from the services of the PID at regional level;</i> - <i>over 350 have attended courses and information events organized by PID BASILICATA;</i> - <i>280 companies measured their digital maturity with the SELFI self-assessment test 4.0;</i> - <i>about 50 entrepreneurs carried out an in-depth assessment conducted by the Digital Promoters within the network;</i> - <i>over 80 companies have had access to almost €600.000,00 allocated through vouchers by PIDs to purchase consulting and training services 4.0.</i>
Potential for learning and transfer	<i>PIDs can be considered as a tool for companies to increase the awareness on the possible solutions offered by digital and their benefits, but also on the risks associated with its non-use.</i>

Table 13.3. Best practice

Good practice general information	
Title of good practice	<i>Growing in Digital</i>
Category of the good practice	awareness raising and collaboration;
Organisation in charge of the good practice	<i>Chamber of Commerce of Basilicata</i>
Description	
Short summary of the practice	<i>Growing in Digital: how to grow digital to be competitive on national and international markets</i>
Resources needed	<i><u>Budget</u></i>

	<p>2014/2015: 6.000</p> <p>2016/2017: 16.000</p> <p>2019/2020: 8.000</p> <p><u>Staff</u></p> <p>2014/2015: 2</p> <p>2016/2017: 2</p> <p>2019/2020: 2</p>
Timescale (start/end date)	<i>Editions 2014 – 2020 (annually?)</i>
Evidence of success (results achieved)	<p><u>Italy:</u> 112,000 young people seeking employment were enrolled to Grow in Digital and</p> <ul style="list-style-type: none"> - 8,100 businesses participated - 3,100 paid internships in the company activated on the national territory - 5,000 internships are planned throughout the national territory in the new program session <p><u>Basilicata:</u></p> <ul style="list-style-type: none"> - In 2017 n. 80 companies have hosted digital innovators. - In 2019 the second edition started. and also active today
Potential for learning or transfer	<i>Growing in Digital: as an opportunity for training and traineeships for young people seeking jobs to increase their chances of success and for companies to hire skilled young adults.</i>

8. Findings and conclusions of the Digital Assessment Survey

After an accurate identification of the size of the company, the turnover, number of employees and business economic sector, the survey requires the investigation of a series of specific questions:

- What kind of advantages offered by digitalization do you expect for your company?
- The motivation and development barriers that do not allow further digitalization.
- What technology will be introduced for digital development?
- Requests for external support to speed up the process.

Transversely, questions were introduced, to better understand the awareness of the use of tools such as e-government, e-commerce, and e-banking. Finally, before leaving you to the interesting results, there were also questions on the awareness of IT security and the measures adopted in the companies themselves.

The results of the survey on digital transformation show that most of the Basilicata Region represents companies with 1 -10 employees.

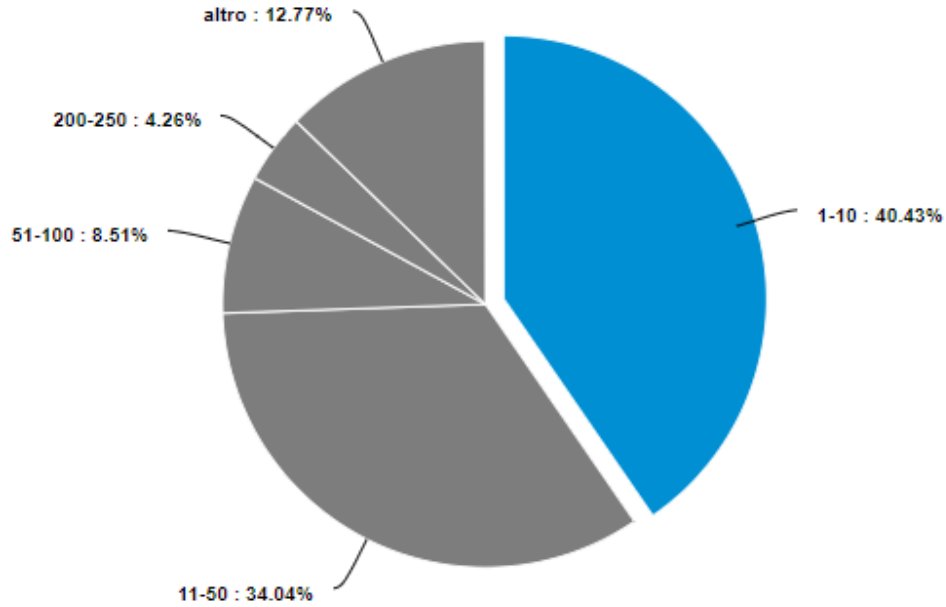
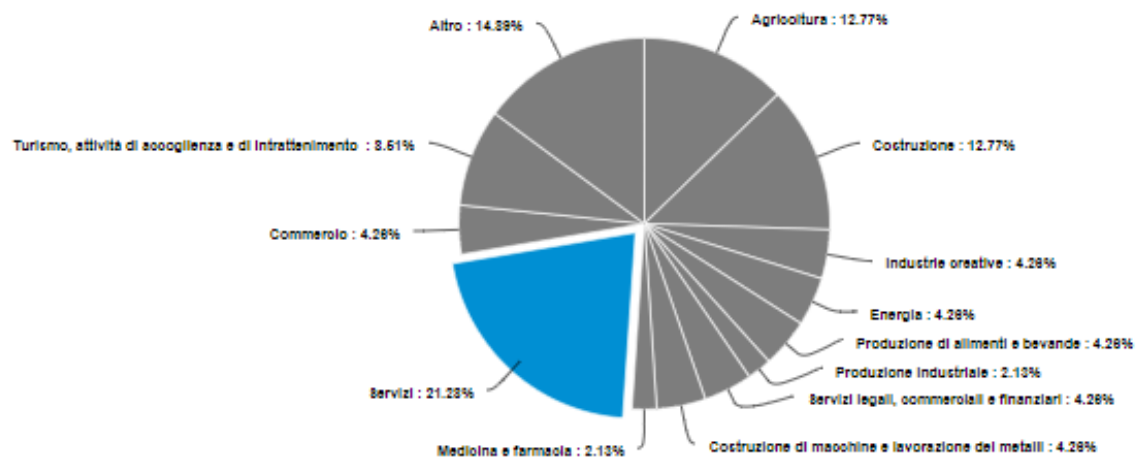


Figure 9. Company size diagram 1

Answer	Count	Percent	20%	40%	60%	80%	100%
1-10	19	40.43%	<div style="width: 40.43%;"></div>				
11-50	16	34.04%	<div style="width: 34.04%;"></div>				
51-100	4	8.51%	<div style="width: 8.51%;"></div>				
101-200	0	0%	<div style="width: 0%;"></div>				
200-250	2	4.26%	<div style="width: 4.26%;"></div>				
other	6	12.77%	<div style="width: 12.77%;"></div>				
Total	47	100%					

Figure 10. Company size diagram 2

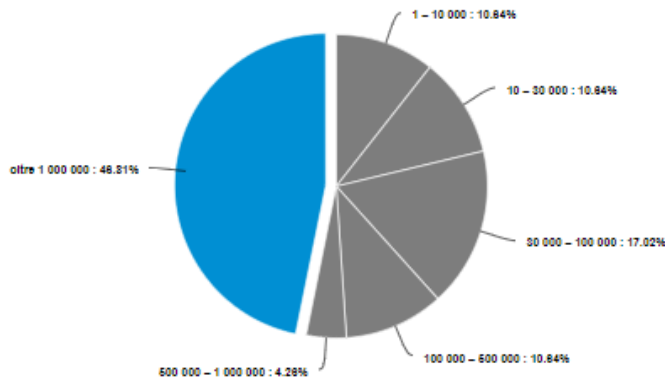
These companies operate in different business areas, with a major interest in business services, but not neglecting the agricultural nature of the territory.



Answer	Count	Percent	20%	40%	60%
Agriculture	6	12.77%	[Progress bar]		
Construction	6	12.77%	[Progress bar]		
Creative industries	2	4.28%	[Progress bar]		
Power	2	4.28%	[Progress bar]		
Food and beverage production	2	4.28%	[Progress bar]		
Forestry	0	0%	[Progress bar]		
Industrial production	1	2.13%	[Progress bar]		
Legal, commercial and financial services	2	4.28%	[Progress bar]		
Machine building and metalworking	2	4.28%	[Progress bar]		
Media, advertising, education	0	0%	[Progress bar]		
Medicine and pharmacy	1	2.13%	[Progress bar]		
Real estate	0	0%	[Progress bar]		
Services	10	21.28%	[Progress bar]		
Business	2	4.28%	[Progress bar]		
Transport and logistics	0	0%	[Progress bar]		
Tourism, hospitality and entertainment activities	4	8.51%	[Progress bar]		
Other	7	14.89%	[Progress bar]		
Total	47	100%			

Figure 11. Business sector

Although most of the companies analysed had a gross turnover of over 1 million, it was also interesting to analyse the companies with a turnover between 30,000 and 100,000.



Answer	Count	Percent	20%	40%	60%	80%	100%
1 - 10 000	5	10.84%	[Progress bar]				
10 - 30 000	5	10.84%	[Progress bar]				
30,000 - 100,000	8	17.02%	[Progress bar]				
100,000 - 500,000	5	10.84%	[Progress bar]				
500,000 - 1,000,000	2	4.28%	[Progress bar]				
over 1 000 000	22	48.81%	[Progress bar]				
Total	47	100%					

Figure 12. Annual revenue

In the region Basilicata, the distribution of companies taking up the concept of rural divide is concentrated not just in the area where Fiat is located, Melfi, and where oil&gas is located that is Viggiano but are distributed principally in the industrial areas near Potenza and Matera.

As a second starting point for the survey, the entrepreneurs were asked if their companies would have benefitted by the digital transition, the majority considering that it would have brought them greater corporate exposure, an increase in company profit and the acquisition of new clients answered yes, while those who answered “no”, have a poor IT infrastructure in Basilicata.








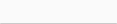



Increase in turnover	19	11.11%	
Acquisition of new customers	20	11.7%	
Customer experience improvement (service)	22	12.87%	
Greater access to new foreign markets	12	7.02%	
Improved data collection and analysis	16	9.36%	
Increase in the number of innovations	11	6.43%	
Consolidated (systematized) business processes and operations	22	12.87%	
Reduced operating costs	20	11.7%	
Enhanced worker skills	15	8.77%	
Greater corporate visibility	13	7.6%	
Other	1	0.58%	
Total	171	100%	

Figure 13. Kind of advantages offered by digitization

As far as the kind of internet connection used in companies this is coherent with our observations, as is noted in this document, most of the companies interviewed have a connection that is sufficient for their daily needs but these conditions the expansion of digital transformation/ evolution. In the following figure we see that the digital technology most widely introduced is precisely communication technology.

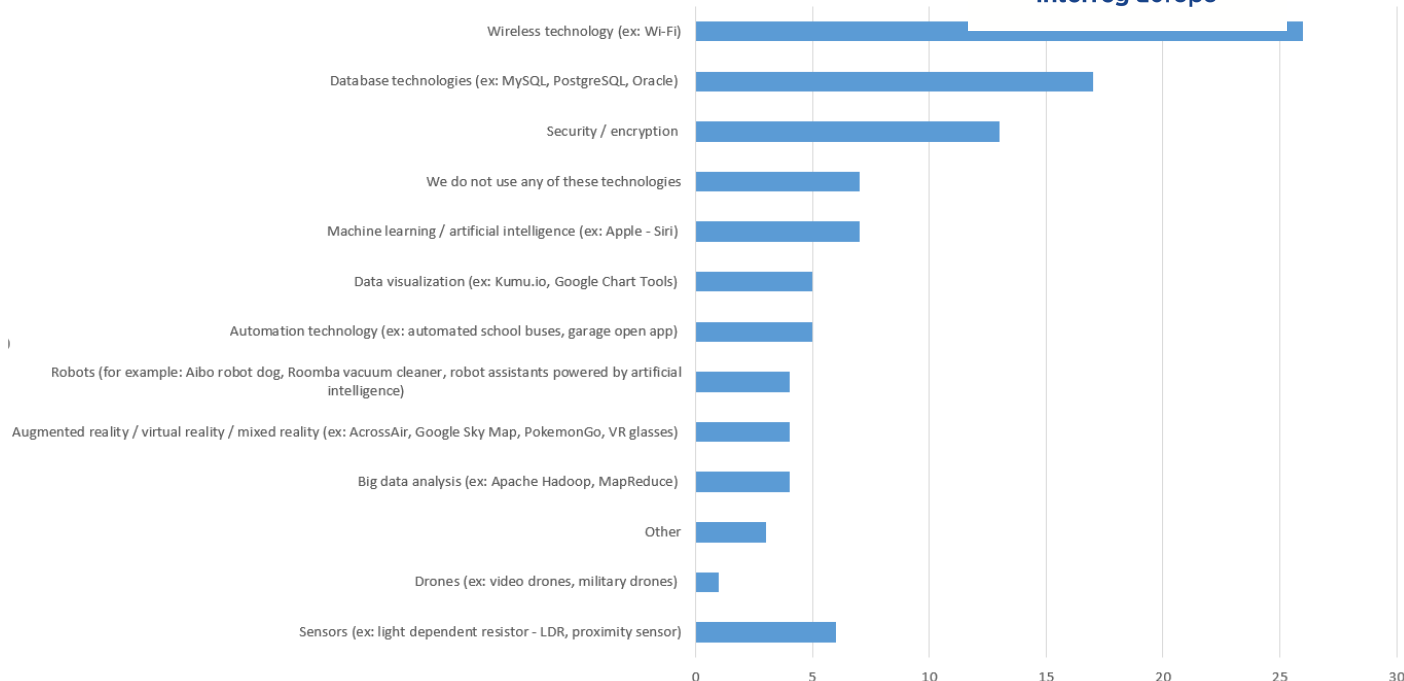


Figure 14. Recently introduced digital technology and the next 3-year plan

Being the most used service with high levels of management of online banking (100%) of purchases through e-commerce (74%) and use of national public portals (www.basilicatanet.it; 28%); the IT solutions used in companies, being used in priority electronic invoicing e- Cloud, it is precisely in this technology that investments are foreseen to be made in the next 3 years.

Answer	Count	Percent	20%
Virtual assistant for customer service (Amazon - Alexa virtual assistant, other virtual assistants)	3	3.8%	
Electronic invoices suitable for automated processing	8	10.13%	
Data storage options (ex: Dropbox, One Drive, Google Docs)	10	12.66%	
3D printing capabilities (ex: 3D printer)	6	7.59%	
Robot technology (ex: Aibo robot dog, Roomba vacuum cleaner, robot assistants powered by artificial intelligence)	6	7.59%	
Cloud computing services (ex: Amazon EC2 - Virtual IT, Google App Engine - Application hosting, Google Apps and Microsoft Office Online - SaaS, Apple iCloud - Network storage)	13	16.46%	
Digital marketing solutions (ex: CRM - Customer Relationship Management)	14	17.72%	
SEO (Search Engine Optimization) solutions (ex: MailChimp)	8	10.13%	
None of them	7	8.86%	
Other	4	5.06%	
Total	79	100%	

Figure 15. Which of the following IT solutions and services are you planning to start using in your business in the next 3 years?

While we are preparing for digital transition it is fundamental to be aware of the danger that it could involve and, in terms of implementing digital security, there is still a long way to go, only 66% have digital security solutions and mostly measures for the prevention of online attacks forgetting integrated IT security strategies of only 3% of those interviewed due to low skills and knowledge of the solutions due to modest basic literacy.

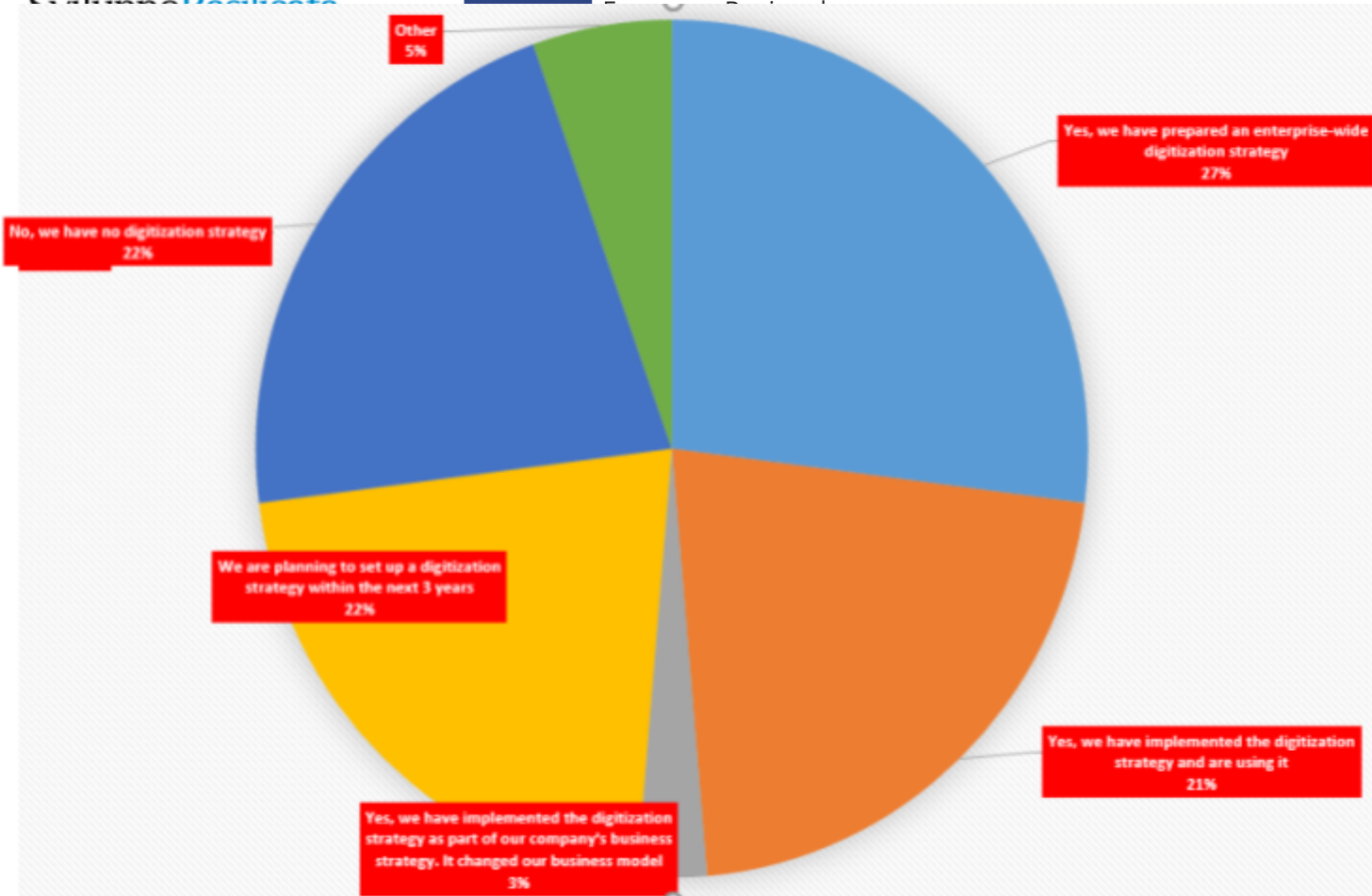


Figure 16. Staff digitally literate

Finally, to the question if the company has a digital strategy nearly half know its potential and of these 22% have adopted it successfully.

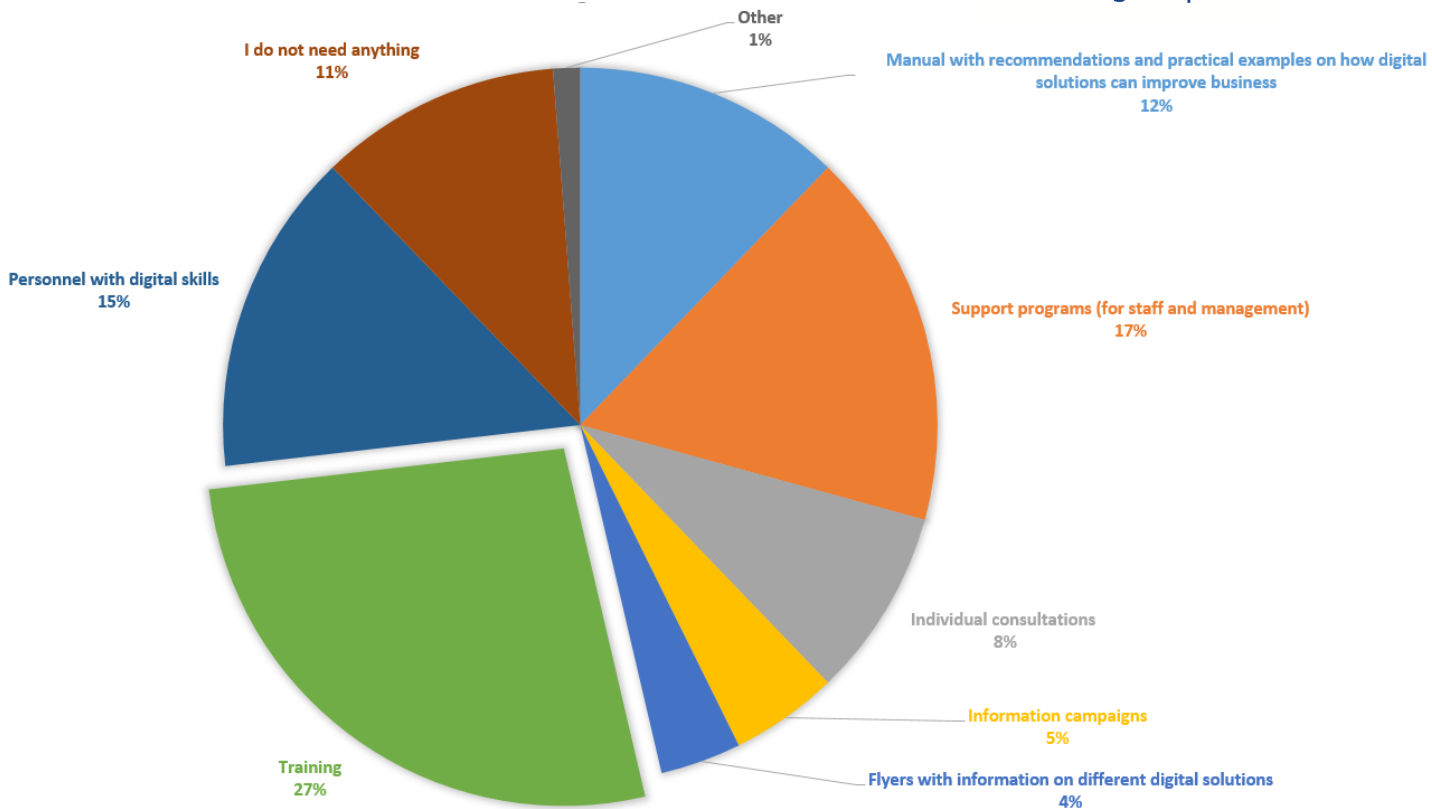


Figure 17. Corporate digitization strategy

From which significant feedback was requested on the perceived need to promote digital transformation and the following figure emerged.

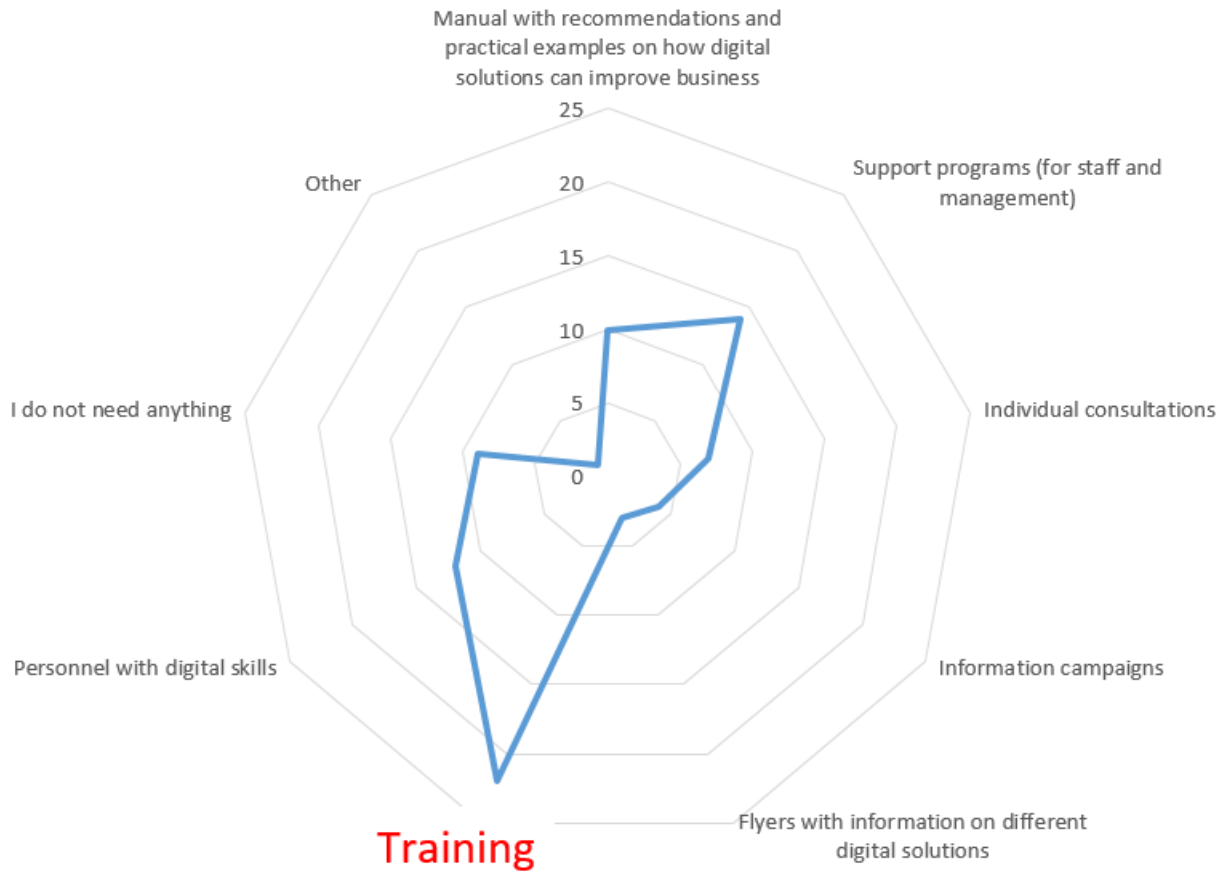


Figure 18. What would you need to drive your company’s digital transformation?

The SMEs of Basilicata have shown modest positive effects about the generalized change of business models and the way in which they operate, caused by digital technological development. From the analysis carried out and presented by the stakeholders we can see that many small and medium enterprises have great difficulty to imagine the potential impact that the application of digital technology could bring to their business, consequently there is little inclination towards research, development and innovation.

All this is attributable to a managerial culture that Basilicata has never been really linked to, as is shown by the Istat data and the Chamber of Commerce in Basilicata, also to family businesses that have passed down over generations that are necessary in an entrepreneurial fabric divided into a few major and thousands of small and medium sized enterprises.

It follows that entrepreneurs are urgently required to reflect on the impact that digitalization would have on their business and investment plans in the medium and long term, and to collaborate with the institutions to elaborate a significant de-bureaucracy, Italy’s atavistic problem which in recent legislation has been closely addressed to boost the whole country.

Strategic action would surely be the involvement and training orientation on the activation of business digitalization processes provided by the stakeholders, the leader being Basilicata Development.

From the data in the tables of barriers (Table 7) and SWOT matrices (Table 9), weaknesses and threats, emerges the need to create an internal regional network with extra regional and European elements, qualified staff are necessary on operational and managerial levels to facilitate the continuous access of emerging technologies and innovation.

In addition to the DigiBEST survey, an important study of Think Tank Basilicata 2020, (a strategic-competitive initiative to develop a concrete vision of the future of Basilicata) was elaborated. It is focusing on new trajectories and development activators, actively engaging business and institutional leaders and civil society promoted by Total E&P and The European House - Ambrosetti. This study reports the following observations:

1. Primarily to give back trust to young people and then to companies in a sustainable economic future.
2. Support the initiative for specialized training to create exceptional innovation centres but above all linked to territorial vocations.
 - Tourism
 - Craftsmanship
 - Business services
 - Energy
 - Metalworkers.

9. Conclusions and Recommendations

In conclusion, it should be noted that this is the representation and forecast from the last decade.

Unfortunately, since the beginning of 2020 the world has been facing the worst pandemonium for a hundred years, COVID 19, an unprecedented shock.

Italy was the first country in Europe to ascertain a wide spread of the virus last February 20th. From the epicentre in Lombardy, initially the virus spread to some of the provinces in the north and then to all territories gradually. The spread of infection has been more contained in the Southern regions, and still more in Basilicata, probably due to its geographical position and the low level of productive and commercial interconnection with the North of the country. However, this did not stop the first lockdown which lasted more than 40 days.

From Bank of Italy estimates, considering the use of smart working and the repercussions along the supply chain, at the end of March 2020 the blocking of activities (lockdown) impacted companies which account for about 27% of regional added value, in line with the national average. The block affected commerce and industry more intensely. The latter was also affected by the trend in vehicle registrations, that have dropped all over Europe, including models produced in Basilicata (Fiat in

Melfi), as well as a notable reduction in oil courses, that reflect on the hydrocarbons. Petrol production has however been supported by mining of the Gorgoglione concession (so called Tempa Rossa) started from December 2019. Industrial firms predict a drop in billing in the first semester of 2020 about 1/5 compared to the corresponding period in the previous year. Also, tourism, which in recent years contributed significantly to supporting tertiary dynamics, has been hit hard by the crisis. The recovery will probably be gradual, considering the difficulty in removing the constraints on mobility and regaining tourist trust.

Covid-19 and its consequences have turned the spotlight on digitalization, highlighting the structural delay that Italy experiences with the rest of Europe. Both a level of connectivity that makes smart working complex to be implemented in areas of basilicas not covered by Internet broadband, up to the scarce digitization of operational, decision-making, and administrative processes that are useful. Underlining that soon, the main challenges in relation to transformation of the SMEs that will have to face, are linked to the need to bring the internet ultra-band to the whole territory of Basilicata to guarantee SMEs immediate access to technologies related to industry 4.0³¹.

The Industry 4.0 Plan³² in review and application is today: "Transition 4.0"³³ Plan is the new industrial policy of the country, more inclusive and attentive to sustainability. In particular, the Plan provides for greater attention to innovation, green investments and design and aesthetic creation activities.

The strong push to digitization and digital transition will be amply supported by the "PNRR"³⁴ - National Recovery and Resilience Plan which is the investment program that Italy must present to the European Commission within the Next Generation EU, the tool to respond to the pandemic crisis caused by Covid-19. and the operational project lines of the innovation strategy (Italy 2025³⁵) that has its roots in the United Nations Sustainable Development Goals (SDGs), whose analysis led to the identification of the three main challenges:

- the digitization of society,
- innovation the country,
- the sustainable and ethical development of society.

Finally, as a conclusion, the 2021-2027 Cohesion Policy Program³⁶ is also being worked on, which aim at defining future Operational Programs for the period 2021-2027.

³¹ https://www.mise.gov.it/images/stories/documenti/Piano_Industria_40.pdf

³² https://www.mise.gov.it/images/stories/documenti/Piano_Industria_40.pdf

³³ <https://www.mise.gov.it/images/stories/normativa/transizione40-2020.pdf>

³⁴ https://innovazione.gov.it/assets/docs/MID_Book_2025.pdf

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Recommended reading

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- https://www.interregeurope.eu/fileadmin/user_upload/plp_uploads/policy_briefs/2017-10-05-Policy_brief_Digitalisation_introduction-converted.pdf
- REPORT REGIONE BASILICATA - Data and information on the state and evolution of the socio-economic profile of the territory 11.2019 - Siprint December 2019
- Regional strategy for innovation and smart specialization 2014-2020
https://s3platform.jrc.ec.europa.eu/documents/20182/225192/IT_Basilicata_RIS3_201508_Final.pdf/c70a3f9e-ea3d-4717-a7f6-16919e047f79
- Study Center of the Minister for Innovation and Technologies Innovation and digital technologies report in Italy. Available at:
<http://bancadati.italialavoro.it/bdds/download?fileName=d8b57949-05dc-4806-baaa-cee82fde6894.pdf&uid=d8b57949-05dc-4806-baaa-cee82fde6894>
- “Ci - Corriere Innovazione 3” - Di Gianni Favero, Corriere del Trentino, Corriere dell'Alto-Adige, Mario Tozzi, Sandro Mangiaterra, Alberto Baban, Maria Luisa Frisa, Francesco Inguscio, Marika Damaggio, Alessio Antonini, Antonino Padovese, Maria Teresa Cometto, Alessandro Piol, Tiziana Busato, Massimiano Bucchi, Edoardo Boncinelli.
- European Commission (2015), Fostering SME's growth through digital transformation, EC DG Internal Market, Industry, Entrepreneurship and PMI, Bruxelles, Belgio. Available at:
https://s3platform.jrc.ec.europa.eu/documents/20182/84453/150527_ICFMostra_EY_Guidebook_Final.pdf/5598b1cf-fda9-416a-a560-1b934ee195c0
- European Investment Bank (2019), The digitization of small and medium-sized enterprises in Ireland. Models for financing digital projects, European Investment Bank, March 2019, Luxembourg,
 Available at: https://www.eib.org/attachments/press/digitalisation_of_smes_in_ireland_execsummary.pdf
- Ilias O. Pappas, Patrick Mikalef, Yogesh K. Dwivedi, Letizia Jaccheri, John Krogstie, Matti Mantymaki (a cura di) (2019), Digital Transformation for a Sustainable Society in the 21st Century, 18th IFIP WG 6.11 Proceedings of the Conference on e-Business, e-Services, and e-Society, 13E, 18-20 September 2019, Trondheim, Norvegia, available at:
<https://books.google.lv/books?id=20yuDwAAQBAJ&pg=PA743&lpg=PA743&dq=SME+digitalization&source=bl&ots=oWOMKGHySb&sig=ACfU3U25j45CFHjSyYKpMEOR0LYC3WcOYg&hl=lv&sa=X&ved=2ahUKewi20bfZ6oDmAhU8wcQBHRbSC6E4ChDoATAGegQIChAB#v=onepage&q=SME%20digitalization&f=false>
- Digital transformation and SMEs: what regions can do. A policy summary from the SME Competitiveness Policy Learning Platform, October 2017,
<https://euagenda.eu/publications/digital-transformation-and-smes-what-regions-can-do>
- OCSE (2019), Measuring the Digital Transformation. A Roadmap for the Future, OCSE, Parigi,
<http://www.oecd.org/publications/measuring-the-digital-transformation-9789264311992-en.htm>
- The European Regional Development Fund
https://ec.europa.eu/regional_policy/it/funding/erdf/
- Opportunities for Basilicata - ENI
https://www.eni.com/img/eni-basilicata/territorio/opportunita-basilicata/20200508_OpportunitaBasilicata_opt.pdf

Useful Sites

- <https://www.sviluppobasilicata.it/>
- <http://europa.basilicata.it/>
- <https://www.regione.basilicata.it/giunta/site/giunta/home.jsp>
- <http://lnx.svimez.info/svimez/>
- <https://www.ambrosetti.eu/whats-hot/citta-e-territori/think-tank-basilicata-2020/>
- <https://www.bancaditalia.it/pubblicazioni/economie-regionali/2020/2020-0017/index.html>
- <http://atticonsiglio.consiglio.basilicata.it/>
- <https://t3ecosystem.com/>
- <http://basilicatadati.regione.basilicata.it/>
- <https://ibasilicata.regione.basilicata.it/web/guest/>
- <https://www.progettobul.telecomitalia.com/basilicata/progetto-bul>
- https://ec.europa.eu/growth/industry/policy/digital-transformation_en
- <https://www.pwc.nl/en/topics/economic-office/europe-monitor/the-digital-transformation-of-smes.html>
- <http://basilicata.portale-infrastrutture.it/>
- <https://ec.europa.eu/digital-single-market/en/digital-scoreboard>
- <https://ec.europa.eu/digital-single-market/en/desi>
- https://ec.europa.eu/growth/industry/policy/digital-transformation/smart-use-ict-smes_en
- <https://www.digitalsme.eu/digitalisation/>
- <https://www.oecd.org/cfe/smes/digital-smes.htm>
- <https://www.feem.it/it/ricerca/progetti-territorio/feem-in-basilicata/>
- <http://www.stakeholdermap.com/stakeholder-definition.html>
- <https://www.imd.org/wcc/world-competitiveness-center-rankings/world-digital-competitiveness-rankings-2019/>
- https://www.feem.it/m/publications_pages/rpt-italia-city-index.pdf
- <https://ec.europa.eu/digital-single-market/en/digital-agenda-europe-key-publications>
- <https://www.sr-m.it/p/dossier-ue-2-2019/>
- <https://docs.italia.it/italia/piano-triennale-ict/pianotriennale-ict-doc/it/2020-2022/index.html>
- <https://pianotriennale-ict.italia.it/>
- https://www.basilicata.camcom.it/sites/default/files/contenuto_redazione_isin/notizie/file/report_regionale_basilicata_5_12_19_invio.pdf
- <https://ec.europa.eu/growth/tools-databases/regional-innovation-monitor/base-profile/basilicata>
- <https://docs.italia.it/italia/mid/piano-nazionale-innovazione-2025-docs/it/stabile/index.html>
- <https://www.mise.gov.it/images/stories/normativa/transizione40-2020.pdf>
- https://www.researchgate.net/publication/327798027_IN_BASILICATA_L%27INNOVAZIONE_FA_SISTEM

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