



CERU

Activities developed in 2020

Activities to be developed during 2021

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Paris – 3 and 4 November 2020

2020



ABS-COVID: ANTHROPOGENIC BASE FACTORS OF SPREADING COVID

► 1st Results



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IGOT Instituto de Geografia
e Ordenamento do Território
UNIVERSIDADE DE LISBOA

Paris – 3 and 4 November 2020

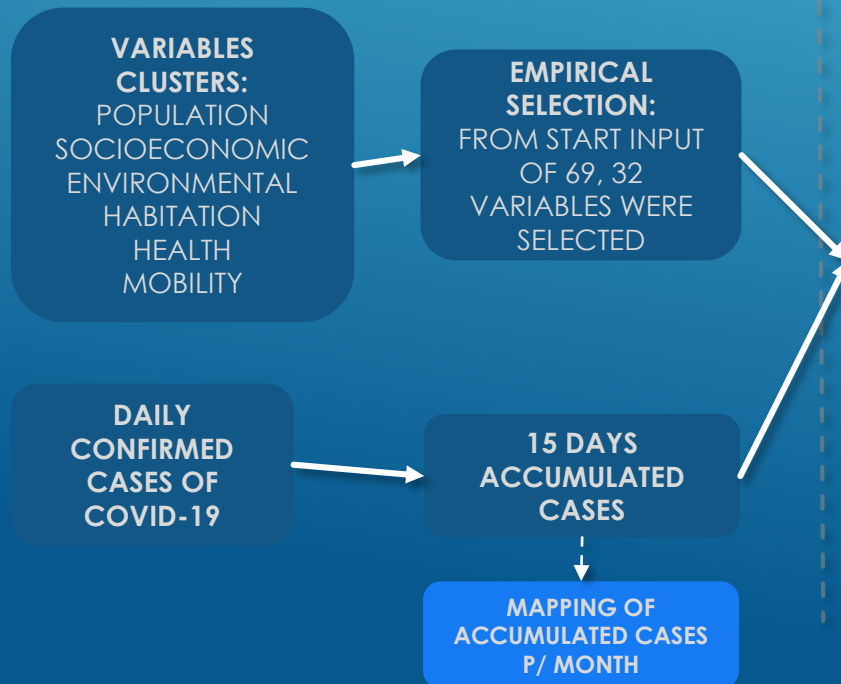


MAJOR GOALS

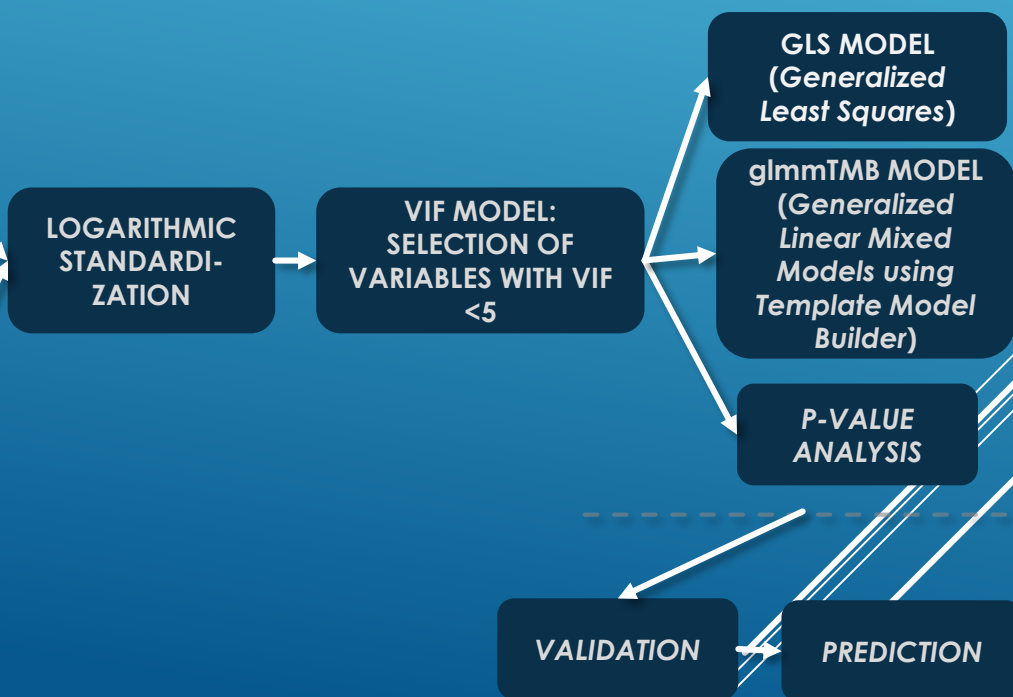
- **TO ANALYZE THE ANTHROPOGENIC BASE FACTORS OF COVID SPREADING PORTUGAL COUNTIES**
- **ASSESS SPATIAL EVOLUTION OF COVID SPREADING DURING AND AFTER CONFINEMENT PERIOD**

METHODOLOGICAL SCHEME

DATA COLLECTION AND PROCESSING:



MODEL IMPLEMENTATION:



MONTHLY COVID-19 CASES EVOLUTION

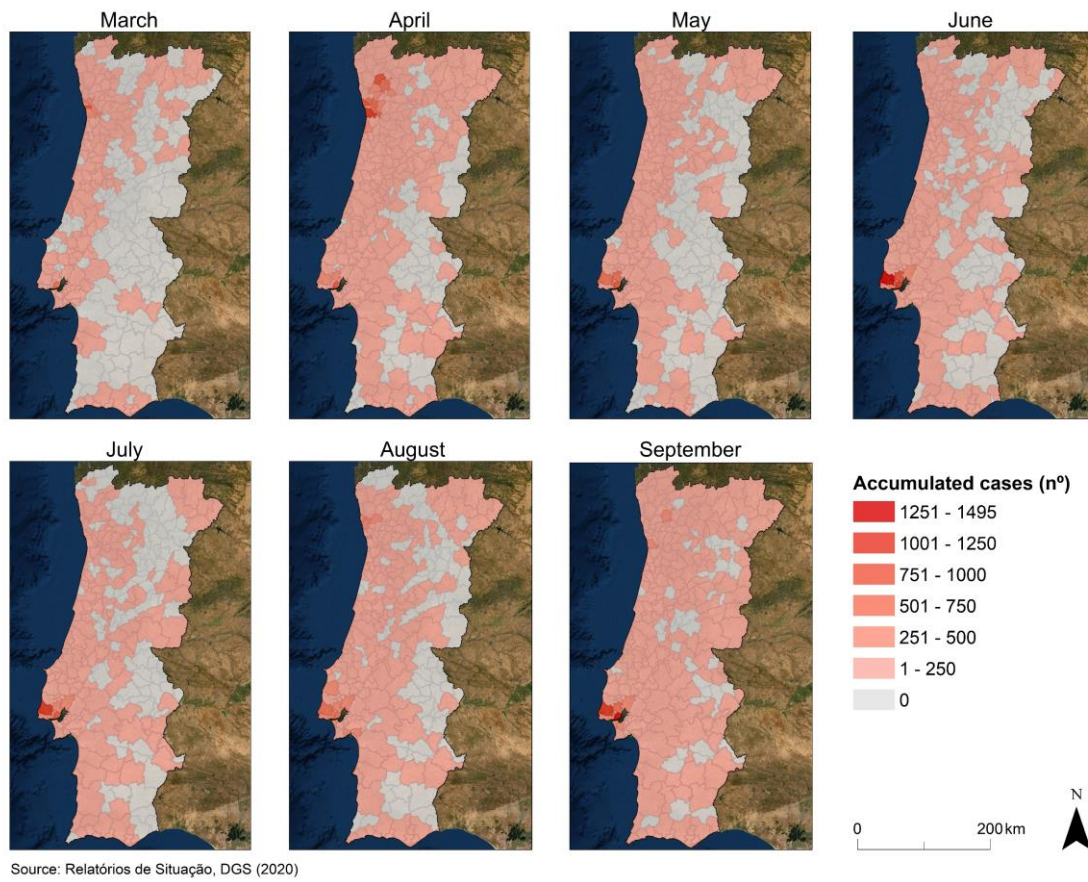


Fig. 1 - Number of confirmed cases accumulated by municipality in each month

- › **General increasing** of counties with Covid 19 cases from March to September;
- › **Hotspots** of COVID cases **changes** between **Oporto and Lisbon metropolitan areas**;
- › May – social **confinement** leads to a **decrease** in **dispersion speed**;
- › **Holidays “factor”** - in June and July, more counties in the **inner Portugal** began to appear - due to rural tourism;
- › **Reopening** - September almost **all counties** have Covid cases some of them with first time cases.

Table 1 -Number of municipalities with and without confirmed cases per month

	Without cases	With cases
march	137	141
april	68	210
may	104	174
june	95	183
july	111	167
august	92	186
september	44	234

START INPUT VARIABLES

Of a total of 69 variables, only 32 were selected (using empirical methods) to enter the model:

POPULATION

POPULATION DENSITY
URBANIZATION RATE
POP. RESIDENT IN CITIES
POP. BY AGE GROUPS (0-9; 10-19; 20-64; +65)
NUMBER OF CLASSICAL FAMILIES
DIMENSION OF CLASSICAL FAMILIES
DEPENDENCE INDEX

SOCIOECONOMIC

PERSONNEL SERVING IN COMPANIES BY SECTOR (AGRICULTURE, INDUSTRY, INFRASTRUCTURE AND SERVICES)
AVERAGE REMUNERATION
UNEMPLOYMENT RATE
ILLITERATE POPULATION
POP. WITH/WITHOUT HIGHER EDUCATION
SCHOOL LEAVE RATE
PURCHASING POWER PER CAPITA
SOCIAL SECURITY PENSIONERS P/ 1000 HAB. IN ACTIVE AGE
WITHDRAWALS IN MULTIBANCO BOXES

HABITATION

CLASSIC FAMILY ACCOM. (PRELIMINARY VALUE)
PERCENT. OF HOUSEHOLD FAMILY ACCOM. WITH ALL FACILITIES
PERCENT. OF OCCUPIED CLASSICAL ACCOM.
PERCENT. OF OVERLOOKED HOUSEHOLD FAMILY ACCOM. (WITH MISSING DIVISIONS)
TOTAL OF COLLECTIVE FAMILY ACCOM.
TOTAL NON-CLASSIC FAMILY ACCOM.
AVERAGE NUMBER OF CLASSIC FAMILY ACCOM. P/ KM² (PRELIMINARY VALUE)
AVERAGE NUMBER OF INDIVIDUALS FOR CLASSICAL FAMILY ACCOM. (PRELIMINARY VALUE)
N° ACCOM.
N° OF SOCIAL NEIGHBORHOODS
PROPORTION OF OVERCROWDED ACCOM.

MOBILITY

AVERAGE DURATION OF PENDULAR MOVEMENTS OF THE EMPLOYED RESIDENT OR STUDENT POPULATION USING INDIVIDUAL TRANSPORT MODE
MOBILITY IN PRIVATE TRANSPORT: INTERNAL AND EXTERNAL
COMMUNITY TRANSPORT MOBILITY: INTERNAL AND EXTERNAL
PROPORTION OF USE OF THE CAR IN DISPLACEMENTS

HEALTH

HEALTH CENTERS: EXISTENCE OF BASIC EMERGENCY SERVICE OR PERMANENT OR EXTENDED SERVICE

ENVIRONMENTAL

AVERAGE TEMPERATURE
TOTAL PRECIPITATION
EMISSION OF POLLUTANTS

Sources: INE, E-OBS Copernicus.

SELECTED VARIABLES

Once inserted into the model, elimination of variables one by one with a VIF (Variance Inflation Factor)* greater than 5

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POPULATION DENSITY
URBANIZATION RATE
POP. RESIDENT IN CITIES
POP. BY AGE GROUPS (0-9; 10-19; 20-64; +65)
NUMBER OF CLASSICAL FAMILIES
DIMENSION OF CLASSICAL FAMILIES
DEPENDENCE INDEX

SOCIOECONOMIC

PERSONNEL SERVING BY SECTOR (AGRICULTURE, INDUSTRY, INFRASTRUCTURE AND SERVICES)
AVERAGE INCOMMMING (€)
UNEMPLOYMENT RATE
ILLITERATE POPULATION
POP. WITH/WITHOUT HIGHER EDUCATION
SCHOOL LEAVE RATE
PURCHASING POWER PER CAPITA
SOCIAL SECURITY PENSIONERS P/ 1000 HAB. IN ACTIVE AGE
WITHDRAWALS IN MULTIBANCO BOXES

HABITATION

CLASSIC FAMILY ACCOM. (PRELIMINARY VALUE)
% OF HOUSEHOLD FAMILY ACCOM. WITH ALL FACILITIES
PERCENT. OF OCCUPIED CLASSICAL ACCOM.
PERCENT. OF OVERLOOKED HOUSEHOLD FAMILY ACCOM. (WITH MISSING DIVISIONS)
TOTAL OF COLLECTIVE FAMILY ACCOM.
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AVERAGE NUMBER OF CLASSIC FAMILY ACCOM. P/ KM² (PRELIMINARY VALUE)
AVERAGE NUMBER OF INDIVIDUALS FOR CLASSICAL FAMILY ACCOM. (PRELIMINARY VALUE)
Nº ACCOM.
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Sources: INE, E-OBS Copernicus.

*VIF (Variance inflation factor) – method commonly used to detect the multicollinearity of a model; quantifies how much the variance is inflated.

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15 DAYS – EXPLANATORY VARIABLES (PRELIMINARY RESULTS)

Example Results of GLS: *p-values*

Unchanging factors

- Urbanization rates (more people/more cases)
- “Daily” mobility (trips out municipality biggest exposure)

Floating factors

- Health centers (holidays period)
- Number of individuals (beginning of confinement and after holidays)
- Dependency index (beginning of confinement that shows the lack of support structures)

VARIABLE	1°	2° APRIL	1° MAY	2° MAY	1° JUNE	2° JUNE	1° AUG	2° AUG	1° SEPT	2° SEPT
Proportion of c		0,2247	0,852					0,1858	0,1643	
Population de		0,5432	0,28					0,2002	0,3159	
Social security		0,3291	0,07					0,0365	0,2679	
age (2018)		0,0001	0,46					0,0235	0	
Urbanization r		0,1567	0,26					0,1904	0,9469	
Average dura		0,8043	0,9					0,0153	0,0029	
employee or s		0,3314	0,8					0,3306	0,616	
(2011)		0,5048	0,77					-	0,7477	
Health Center		0,0177	0,0					0,0996	0,8415	
a permanent		0,0017	0,00					0,024	0,0026	
Pollutant emis		0,4501	0,22					0,0171	0,0462	
Dimension of		0,0014	0,00					0,0031	0,0084	
Dependency		0,3628	0,29					0,0451	0,0084	
Mobility in cor		0,8519	0,6765	0,60				0,8868	0,7091	
Employees in		0,2089	0,6558	0,0443				0,412	0,9814	
Employees in c		0,2058	0,2992	0,7052	0,1344	0,0187	0,0187	0,1777	0,8399	0,4333
Employees in co		0,771	0,9063	0,4827	0,322	0,4743	0,4743	0,9699	0,3783	0,2702
Average remuneration (2018)		0,2222	0,0074	0,0001	0,0001	0,535	0,535	0,6409	0,7109	0,0155
Average tempera		0,0549	0,0231	0,0321	0,1153	0,1173	0,1173	0,3602	0,3825	0,0321
Total precipitation (2020)		0,1005	0,3024	0,7635	0,2225	0,1071	0,1071	0,0751	0,8989	0,5873
Percentage of usual household housing with all facilities (2011)										0,9244
Average number of individuals per classic family accommodation (preliminary value) (2019)										
N° of social districts (2011)										
Proportion of overcrowded accommodation (2011)										

Note: The cut-off value for rejecting a variable is 0.05 (or 5%), that is, an independent variable is important for the explanation of the dependent variable when its *p-value* is equal to or less than 0.05 (5 %).

2021



EARTHQUAKE AND TSUNAMI READY /SAFE HOTEL

► Preliminary Guidelines – A proposal

- **Tsunami Ready Guidelines** (Standard Guidelines for the Tsunami Ready Recognition Program, Intergovernmental Oceanographic Commission, UNESCO)
- **Guidelines To Fire Safety in European Hotels**

► CEPRIS and other Specialized Centres (?)



Portuguese Municipalities
(Cascais, Torres Vedras,
Lagos,)

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HOME

THEMES & CONVENERS

INVITED SPEAKERS

PROGRAMME

KEY DATES

COMMITTEES

REGISTRATION

VENUE

CONTACTS



23 – 25 June (?)

LISBON ~~25-27 JUNE~~



2022

~~ICUR2020~~

2nd International Conference
on Urban Risks



ICUR2022

~~ICUR2020~~

2nd International Conference
on Urban Risks



LISBON ~~25-27 JUNE~~

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2021



2020 World Tsunami Awareness Day

North-Eastern Atlantic, Mediterranean and Connected Seas (NEAM) Regional Webinar

4 November 2020

10.00-13.30 CEST

- Awareness sessions on earthquake and tsunami risks

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