Correlation of Society Stringency/Openness Measures with Timely Trend of COVID-19 Cases - Case Study – Albania Versus Italy

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Abstract

Following the WHO[1] declaration for COVID-19 as a pandemic, this disease has caused an international crisis with a severe impact on economic and health care systems. After the first cases reported in China, the disease has progressively widespread worldwide where all affected countries has adapted specific safety protocols and tried to find new therapies in order to face this new disease. The final objective is to evaluate the overall impact of stringency measures taken from Albanian and Italian governmental authorities in relation to daily cases of COVID-19 in each country. This is a descriptive paper where the data collected in Albania and Italy according to authority-based stringency measures were compared with their output; temporary trend of daily cases. Officially Albania reported the first COVID-19 case in 8th of March[2] in an Albanian citizen just arrived from Italy, meanwhile in Italy the first cases dated January 31st were a Chinese couple in Rome who had travel from Wuhan City[3]. Both governments took action by applying different closer measures; thereby Blavatnik School of Government has introduced the Oxford COVID-19 Government Response Tracker (OxCGRT)[4] in order to quantifying numerically these actions. According to OxCGRT, Albania and Italy present similar level of stringency indicator, but epidemiological curve of daily cases is totally different in shape. Italian curve corresponds to a typical outbreak, while Albania curve seem like any endemic disease in the population. In front of this pandemic, the Albanian curve might be cut off as a result a small number of tests carried out by Albania authorities, 6906 tests/million population, which is far lower than tests performed by Italian authorities, which is 11 times fold (79908 test/million population[5]). Toward end of

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[1] WHO. Statement on the second meeting of the International Health Regulations (2005). Emergency Committee regarding the outbreak of novel coronavirus (2019-nCoV). https://www.who.int/news-room/detail/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-(2005)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-(2019-ncov). Jan 30, 2020

[2] WHO. Novel Coronavirus(2019-nCoV) Situation Report – 11, 9 MARCH 2020

[3] WHO. Novel Coronavirus(2019-nCoV) Situation Report – 11 31 JANUARY 2020, https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200131-224 sitrep-11-ncov.pdf?sfvrsn=de7c0f7_4

[4] www.bsg.ox.ac.uk/covidtracker

[5] https://www.worldometers.info/coronavirus/

May the number of COVID-19 were dropped so both governments planned to relief closure measures by opening most of public and economic activities. In front of the fear that COVID-19 could rise up again, as a result of virus transmission amongst people that was observed in Albania, while in Italy continued with the low and decreasing trend of disease cases. Data and their comparison though different indicators or index, shows that stringency measures could contribute on a temporary diminution of new cases of COVD-19, but if not are accompanied with individual protection measures, and/or special vulnerable groups it might be a missing opportunity because the general population might lose what was achieved during national quarantine. On the other hand, taking in consideration low public spending per capita in Albania (307 USD, 2014), moving from "hummer" toward "dance" phase, managing and supporting health system is critical[1]. Public health services should be mainly the entitled authorities to monitor data and come up with specific and efficient measures in order to prevent an increase of cases on the overall population.

Keywords: Albania, Italy, stringency index, epidemic, COVID-19; Pandemic;

Introduction

The "severe acute respiratory syndrome coronavirus 2" (SARS-CoV-2), officially named as "Coronavirus Disease-2019 (COVID-19)" by World Health Organization (WHO) on February 11, 2020[2] actually the new coronavirus culpable of one of the most severe worldwide pandemic in recent history. On December 31, 2019, the WHO China Country Office documented many cases of unknown origin pneumonia in the city of Wuhan, in the Hubei Province. A new type of Chinese Coronavirus, that was isolated on January 7, 2020 and its genetic sequence was shared with the rest of the world in order to develop specific diagnostic kits and to fight this new battle together. Other possible etiological agents such as flu, avian influenza, adenovirus infection, Severe Acute Respiratory Syndrome coronavirus (SARS-CoV) and Middle East Respiratory Syndrome coronavirus (MERS-CoV) were previously excluded[3].

Albania and Italy are not just two neighbour countries, but they have tight relations because of big Albania community who lives and work in Italy and business Italian people who live and

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[1] The economic and social impact of COVID-19, Health systems, Western Balkans, regular economic report, N0.17, Spring 2020;
http://documents.worldbank.org/curated/en/650491590681594215/The-Economic-and-Social-Impact-of-COVID-19-Health-Systems

[2] WHO, Emergency Committee regarding the outbreak of novel coronavirus (2019-nCoV).
https://www.who.int/news-room/detail/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-(2005)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-(2019-ncov). Jan 30, 2020

[3] WHO. Disease outbreak news: Update. 12 January 2020
https://www.who.int/csr/don/12-january-2020-novel-coronavirus-china/en/; WHO. Novel Coronavirus (2019-nCoV) Situation Report - 1 21 JANUARY 2020 https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200122- sitrep-2-2019-ncov.pdf?sfvrsn=4d5bcbca_2; Wu, Z; McGoogan, JM. Characteristics of and important lessons from the coronavirus disease 2019 (COVID-19) outbreak in China. JAMA. 2020; 2019: 25-28

work in Albania since 30 years. Therefore, are two countries which are not in the same geographic position, but enormous movement of people and goods, makes them vulnerable to each other epidemic issues. According to Imperial College COVID-19 Response team[1], two fundamental strategies are possible: (a) Suppression, here the aim is to reduce the reproduction number (the average number of secondary cases each case generates), R, to below 1 and hence to reduce case numbers to low levels or eliminate human-to-human transmission. (b) Mitigation**,** here the aim is to use non-pharmaceutical interventions (and vaccines or drugs, if available) not to interrupt transmission completely, but to reduce the health impact of an epidemic. In this scenario, population immunity builds up through the epidemic, leading to an eventual rapid decline in case numbers and transmission dropping to low levels. Albania and Italy used suppression strategy to reduce the reproduction number, hence to reduce case numbers and to protect healthcare system from being overloaded.

Methodology:

This paper is descriptive analysis, by collecting data from official sources and other think tank institutions, in order to analyse different indicators, like: daily new cases, stringency index, average tests performed to population, etc.

Results:

First step to manage the situation, or mitigate spread of virus was close of schools, universities and public activities in both countries, Albania[2] and Italy. Within few days from the appearance of the first vocid-19 cases, both countries switched strategy, from mitigation toward suppression, by achieving stringency index about 90 (Graph,. No, 1&2)

Graph no.1: Stringency index and daily number of covid-19 in Italy

Daily number of COVID-19 cases and National Stringency Index in ITALIA
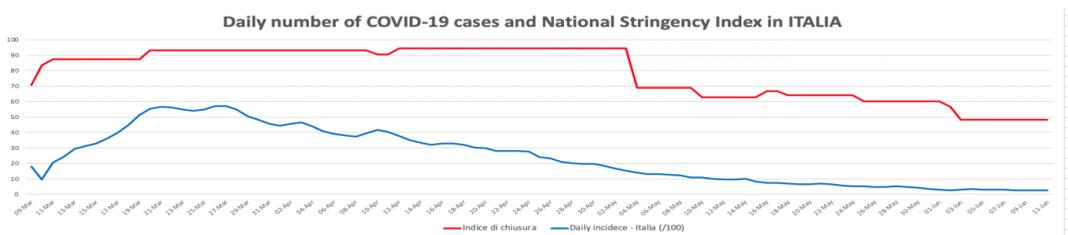
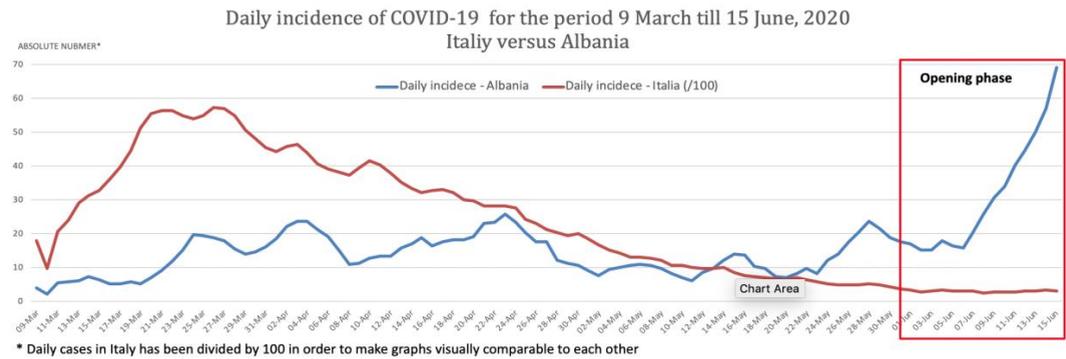**Graph no.2: Stringency index and daily number of covid-19 in Albania**

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[1] "Impact of non-pharmaceutical interventions (NPIs) to reduce COVID-19 mortality and healthcare demand", Imperial College COVID-19 Response Team,
https://spiral.imperial.ac.uk:8443/handle/10044/1/77482
[2] Decision of Ministry of Health of Albania, No. 135, date 09.03.2020 and N0.132 date 08.03.2020

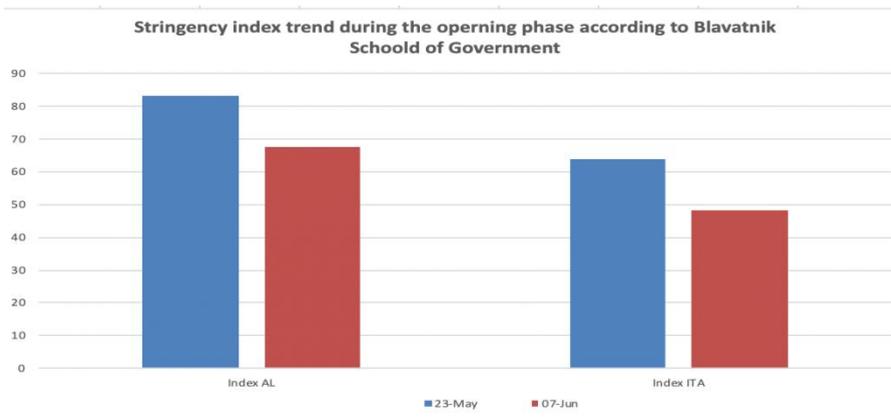Daily number of COVID-19 cases and National Stringency Index in ALBANIA
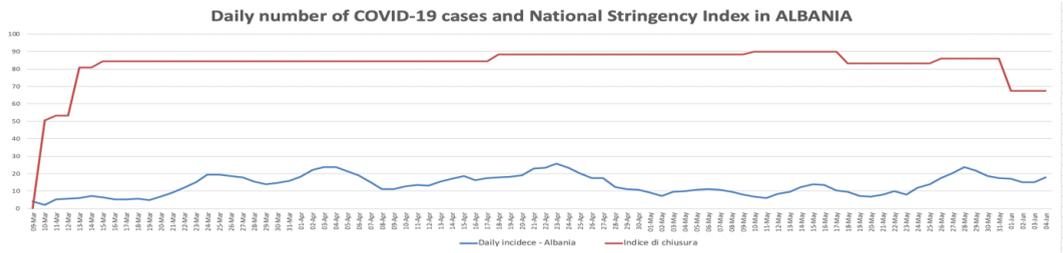
Both governments started to relief closure measures by opening most of public and economic activities, which was expected to be accompanied with an increase of daily new cases because of increased social activities. But, it happened an sharp increase of daily cases in Albania and steady situation in Italy, even because opening measures were almost the same in both countries (Graph no. 3 &4).

Graph. No. 3: Daily incidence Albania vs Italy

Daily incidence of COVID-19 for the period 9 March till 15 June, 2020
Italy versus Albania

* Daily cases in Italy has been divided by 100 in order to make graphs visually comparable to each other

Graph. No. 4: Stringency index Albania vs Italy

Stringency index trend during the openning phase according to Blavatnik Schoold of Government

Moving from "hummer" toward "dance"[1] phase, managing and supporting health system is critical[2]. The increase of new cases in Albania as relieving closure measures happened because according to Health System Analysis, 2019 Global Health Security Index[3], has very low score, 0 points in "Infection control practices and availability of equipment". On the other hand, has lower region score for "Capacity to test and approve new medical countermeasures" with 50 points, Graph No. 5 shows Albania has the lowest number of tests per million population in the region, 11 fold less than Italy.

Graph no.5: Test per million population performed in Mediterranean region
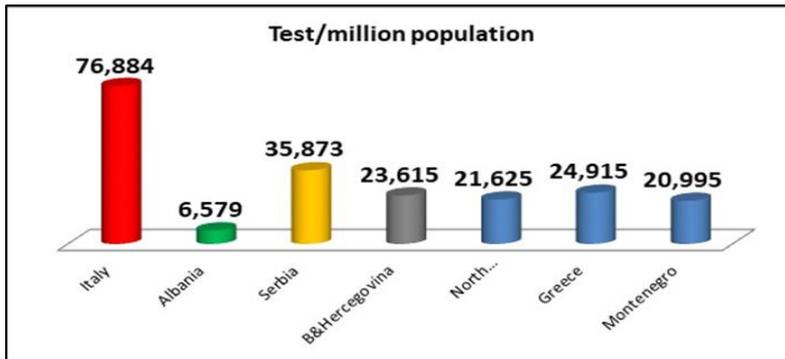
On the other hand, workforce migration and shortages also make health systems vulnerable during a pandemic[4]. Health worker emigration has been a creeping challenge for Albania. In 2013, Albania had 128 physicians per 100,000 people, but in 2016 according to Order of Physicians there are 400 doctors have asked for "Certificate of good standing" in order to go and work abroad. As consequence of massive migration and other factors Albania has the lowest rate of medical doctors for covering healthcare to population, by 1.1 doctors for 1000 inhabitants[5].

[1] https://medium.com/@tomaspueyo/coronavirus-the-hammer-and-the-dance-be9337092b56.

[2] The economic and social impact of COVID-19, Health systems, Western Balkans, regular economic report, N0.17, Spring 2020;
http://documents.worldbank.org/curated/en/650491590681594215/The-Economic-and-Social-Impact-of-COVID-19-Health-Systems

[3] The economic and social impact of COVID-19, Health systems, Western Balkans, regular economic report, N0.17, Spring 2020;
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[5] Why Do Albania Doctors Migrate?, Gazment Koduzi, Ardita Kongjonaj, Vladimir Lazarevik, Europian Journal of Interdisciplinary Studies, Jan-Apr 2017, Vol.7, Nr.2, ISSN 2411-4138 (Online), ISSN 2411-958X (Print)

Deep Knowledge Group study has ranked both Italy and Albania in tier 3, but Italy is ranked in 53th position with 533 points, and Albania in 88th position with 476 points[1], by scoring lower point in each field comparing to Italy (Pict. 1).
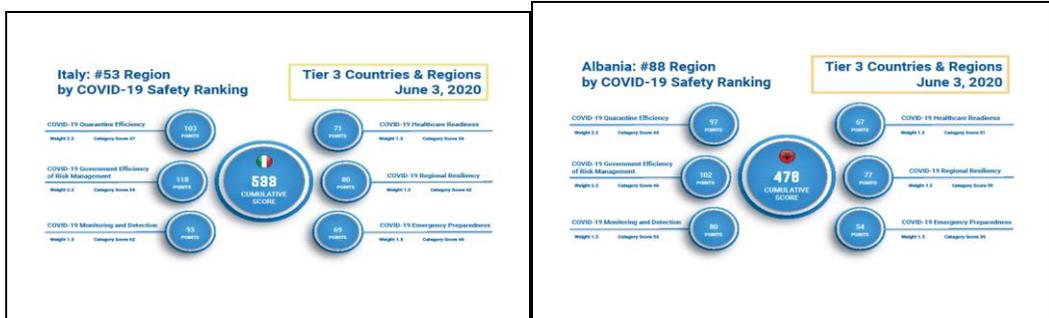
Picture no. 1: Safety Ranking by Deep Knowledge Group Albania vs Italy.

Conclusions

Data and their comparison though different indicators or index, shows that stringency measures could contribute on a temporary diminution of new cases of COVD-19, but if not are accompanied with individual protection measures, and/or special vulnerable groups it might be a missing opportunity because the general population might lose what was achieved during national quarantine. On the other hand, moving from "hummer" toward "dance" phase, managing and supporting health system is critical[2]. Taking in consideration low public spending per capita (307 USD, 2014) and low healthcare workforce 1.1 doctors for 1000 inhabitants, Albania should invest more in healthcare system. Public health services should be mainly the entitled authorities to monitor data and come up with specific and efficient measures in order to prevent an increase of cases on the overall population.

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[1] WHO. Statement on the second meeting of the International Health Regulations (2005). Emergency Committee regarding the outbreak of novel coronavirus (2019-nCoV). https://www.who.int/news-room/detail/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-(2005)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-(2019-ncov). Jan 30, 2020

[2] www.bsg.ox.ac.uk/covidtracker

[3] https://www.worldometers.info/coronavirus/

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[1] http://analytics.dkv.global/covid-regional-assessment-200-regions/tier-2-3.pdf

[2] The economic and social impact of COVID-19, Health systems, Western Balkans, regular economic report, N0.17, Spring 2020;
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[7] https://medium.com/@tomaspueyo/coronavirus-the-hammer-and-the-dance-be9337092b56.

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[12] http://analytics.dkv.global/covid-regional-assessment-200-regions/tier-2-3.pdf

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[14] **Authorship:** All the authors equally contributed in conceptualization, data collection and analysis, paper writing and reviewing. All the authors have read and approved the final version of the manuscript.

[15] WHO. Novel Coronavirus(2019-nCoV) Situation Report – 11 31 JANUARY 2020, https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200131-224 sitrep-11-ncov.pdf?sfvrsn=de7c0f7_4

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