

How Italians coped with COVID-19 lockdown: evidence from a survey promoted through social networks

Margherita Silan, Riccardo Bellide

1. Introduction

In December 2019, a coronavirus, SARS-COV2 (severe acute respiratory syndrome coronavirus), responsible for a respiratory syndrome with severe complications, appeared in Wuhan, China. The worldwide spread of the virus was rapid and on 11th March 2020, the World Health Organization (WHO) declared a global *pandemic* status. The lack of scientific information, effective drugs, the absence of vaccines, and the state of panic caused by the contagiousness of the coronavirus, as well as the awareness of being unprepared in the face of a totally unforeseen situation, brought the world to adopt habits and impose restrictions unthinkable until then. The first measures consisted of the adoption of non-pharmaceutical practices such as the use of masks, disinfectants, social distancing, and travel bans.

During the first wave of the pandemic, several studies were implemented to investigate the social economic and health-related consequences of the COVID-19 pandemic. Among them, an international project, the SEBCOV study, was born in five countries: Italy, Slovenia, Malaysia, Thailand, and the United Kingdom (Osterrieder et al., 2021). Its objective consisted of evaluating the social, ethical, and behavioral aspects of the COVID-19 pandemic through an online survey. In this work, we focus on the analysis of Italian data from this survey promoted through social networks and carried out through two different sampling designs.

2. Questionnaire and survey

The SEBCOV survey questionnaire consisted of 36 questions concerning social, ethical and behavioural aspects of the COVID-19 pandemic. In particular, the questionnaire is composed of five sections: (1) socio-demographic information; (2) income, occupational status and economic impact of COVID-19; (3) preferences and perceptions regarding COVID-19-related communication and occurrence of fake news; (4) perceived level of knowledge about COVID-19, the use of non-pharmaceutical interventions and behavioural changes; (5) concerns and coping strategies related to restrictions.

It was spread in two different stages among people between 18 and 75 years old, residing in Italy. In fact, the study participants were adults who gave their informed consent, and were able to use a computer or smartphone. In the first stage, which took place from April 21 to May 4, 2020, the questionnaire was filled out via social networks such as Facebook and Instagram following a quota sampling. During this stage, 1002 responses were collected. The second stage started on 1 May and ended on 30 June 2020 and was promoted on the Facebook page dedicated to the SEBCOV study. During these two months, the questionnaire was advertised in all countries involved in the study. The responses received in this phase were 712. The two samples differ because of the timing of data collection and the sampling technique.

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Table 1: Sample composition according to gender, age, education, geographical location and number of household components in the first and second stages, and in the Italian population (ISTAT).

		First stage	Second Stage	Italian population
Gender	Female	55.1%	68.9%	50.2%
	Male	44.9%	31.1%	49.8%
Education	Low	56.3%	30.5%	82.6%
	High	43.7%	69.5%	17.4%
Geographical Location	Northwest	26.2%	16.3%	26.3%
	Northeast	19.5%	50.6%	19.8%
	Center	28.1%	18.9%	19.7%
	South/Islands	26.3%	14.2%	34.2%
Age	18-34	22.2%	38.3%	25.1%
	35-54	39.0%	35.2%	40.0%
	55+	38.9%	26.6%	34.9%
Number of Households Components	1	17.1%	14.8%	26.7%
	2	30.8%	32.4%	25.2%
	3	26.2%	24.6%	22.7%
	4	18.4%	20.8%	18.1%
	5+	7.6%	7.5%	7.3%

3. Sample weights

The samples collected in the two stages present different socio-demographic characteristics, from each other and from the whole Italian population. Thus, producing distorted results without the use of weights (Table 1) (Mercer et al., 2017). We considered two weighting methods: *post-stratification*, which considers the frequencies resulting from mutually exclusive intersections between the modalities of selected variables; and *raking*, which considers only the marginal frequencies of selected variables, neglecting intersections between them (Battaglia et al., 2004).

Variables we selected to compute post-stratification weights (B in Figure 1) are gender, education, geographic location and age, according to data availability on the ISTAT website. We calculate the raking weights with the same subset of variables (A in Figure 1) and including an additional variable (C in Figure 1): the number of household members. This last variable is extremely relevant in the analysis of the reaction of individuals to COVID-19 lockdown.

In order to compare results, we considered as a benchmark the percentage of individuals who adopted smart-working among those who continued to work during the pandemic. According to an ISTAT survey about daily activities at the time of the coronavirus, this percentage is equal to 44% between 5 and 21 April 2020. The weighting method that produces less biased results with respect to the benchmark question is the raking with 5 variables (thus including also the number of household members). Using this set of weights, the percentages of individuals that adopted smart-working among those who continued to work during the pandemic is 45.3% in the first stage and 50.48% in the second. These two percentages may be different mainly for two reasons: the sampling technique or the timing of the data collection.

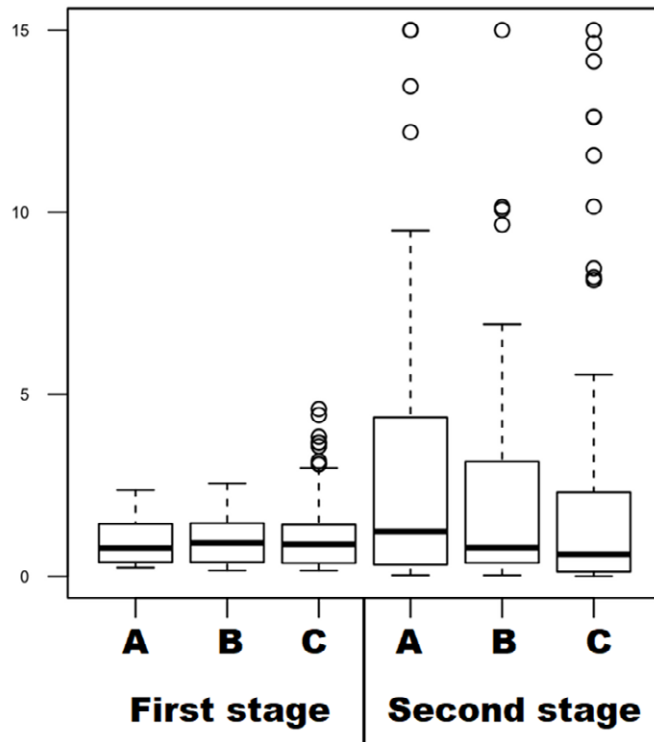


Figure 1: Weights calculated with different combinations of techniques and variables.

4. Samples comparison

Having two samples that differ both in time and data collection method, we use a Chi-Squared test and a Chow test to check for structural differences in the two datasets due to time reasons, assuming that trimmed weights computed with raking and 5 variables helped us reduce the self-selection bias.

The Chow test is an econometric test that consists of verifying structural differences in two datasets using regression models (Wooldridge, 2015).

Table 2: P-values of the Chi-square test and the Chow test for some variables contained in the questionnaire.

Variable	χ^2 TEST	CHOW TEST
Reduction of working hours	< 0,01***	< 0,01***
Smartworking	< 0,01***	< 0,01***
Changed social behaviour before restrictions	0,73	0,72
Physical concerns related to lockdown	0,27	0,07*
Concerns about mental well-being during lockdown	0,08*	0,05*

The two testing methods mentioned above lead to almost concordant results. The first two rows of Table 2 refer to work-related questions; in this case, the tests underline a significant structural difference in the answer between the two shots, probably due to the different timing of the surveys. In fact, after the 4th May 2020, Italians experienced an ease of mobility restrictions

and the resumption of work activities.

On the other hand, the following three rows in Table 2 relate answers to questions such as *"Did you change your social behaviour before the implementation of government restrictions?"* where a precise reference period is specified in the question, whether it is *"before the implementation of government restrictions"* or *"during the lockdown"*. In these cases, tests did not find significant structural differences between the two stages of the survey after being weighted.

Thus, we may conclude that an important element that prevents us from pooling together the data coming from the two stages is the fact that they represent situation completely different: the first stage when Italians were locked inside their houses without the possibility of going out, sometimes not even going to work; and the second one when the restrictions were already eased. However, the dissimilarities we observed in our samples may also be due to different sampling strategies that affect other factors not properly taken into account by the post-stratification techniques used in the analysis.

5. The impact of COVID-19 lockdown

In this section we show some results regarding data collected during the first shot that better represent the lockdown period.

One of the most sensitive topics during the lockdown period was the impossibility of going to work. In this regard, 64% of workers experienced a decrease in income, as a consequence of the forced reduction of work activity. This figure is particularly dramatic for workers with a low-medium level of education (high school diploma or lower). In addition, there has been a real work suspension for 27% of workers before the COVID-19 lockdown period, it was temporary in some cases, but also permanent. In contrast, some categories have been subjected to greater work pressure. Indeed, one must remember the contribution of health care personnel subjected to gruelling shifts to cope with the emergency, 56% of whom suffered a greater workload compared to 15% of workers in other sectors.

Many respondents expressed concern about a possible deterioration of their financial situation if they were unable to leave home except for essential needs. This concern was mainly expressed by the less educated respondents (45% vs. 55%) and among people under 35 years of age and between 35 and 54 years of age (respectively 62% and 57% vs. 40% of those over 55 years of age).

Restrictions on movement and social interaction imposed for longer or shorter periods can produce health consequences and induce states of anxiety among the population. Even before the government restrictions, many respondents (48%) had adopted new behaviors: 77% of them did so by trying to avoid contact with elderly people or those with pre-existing medical conditions, and 10% by moving from their usual home to parents or relatives. In fact, during the period of the pandemic, there was a phenomenon by which, in anticipation of the restrictions, a part of the population decided to change its home, mainly for space or social reasons. This behaviour was recorded mainly in large families consisting of 4, 5 or more individuals (18-19%), while in small families with less than 3 components it is less evident (no more than 8%). Indeed, one of the most worrying aspects was the limitation of social interactions together with mental health, with some differences between age classes and gender.

One of the sections of the questionnaire was about concerns when unable to leave home except for essential or work-related needs. Respondents are particularly concerned about their mental and physical state and maintaining mental well-being (65% of respondents), especially if they are unable to leave home for really long periods of time. Another major concern relates to being unable to see and hang out with relatives or friends and thus the risk of social isolation (68%). This state was more prevalent among 18-34 year olds (82% versus 62% for adults

and 64% for elderly). The percentage of concerns about social interactions is higher among men, 71%, compared to 65% among women. Worries about care-giving responsibilities (that refer to both caring for children and elderly) vary, of course, with age: higher percentages of respondents worried by care-giving are between 35-44, 45-54, and 55-64 years old (respectively, 56%, 62%, and 62%); while lower percentages are in younger age classes between 18 and 24 and between 25 and 34 (respectively, 36%, and 44%). Furthermore, 60% of the respondents said that during the lockdown that they had tried to improve their health status by implementing exercise or introducing food deemed healthier into their diet.

Almost all respondents (96%) declared that they had spent the lockdown period connecting with other people through the social network that had a fundamental role in this challenging period, for all age classes. Indeed, 49% used alternative methods (via the web) to carry out their activities (educational or work). Obviously, for the latter, the difference is considerable depending on the level of education (67% among those with a bachelor's degree compared to 45% among those with a lower level of education). The strong influence of the Internet on everyday life during this period helped keep people close but also encouraged the spreading of fake news; indeed, almost all respondents received fake news on several topics.

6. Conclusions

It can be concluded that the use of non-probabilistic surveys, particularly those taken through social networks such as the SEBCOV survey, can be a powerful tool in health emergency situations (Grow et al., 2020). In these circumstances, as demonstrated in this work, the health condition and people's perceptions of it change rapidly. As shown in our analysis, the timing of surveys is a very important aspect and the spreading of the questionnaire should be well advertised especially among quotas that are more difficult to reach in order to fill quotas quickly and reduce the duration of the survey. Using a quota sampling allows smaller weights and thus a lower variance of estimates even with small samples.

In this sense, it seems that the SEBCOV survey allowed for an accurate snapshot of the effects of lockdown on the lives of Italians.

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