

To conform or not to conform? Legal norms and human behaviour during the COVID-19 pandemic

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Article

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Abstract

Efficacy is one of the essential elements of laws and norms. In this paper I focus on the so-called “primary efficacy of legal norms, by measuring the level of compliance of citizens with norms introduced to counter the spread of the COVID-19 pandemic. In particular, this analysis is carried out on Italy which was the first western democracy to face the pandemic and its effects. However, the norms considered take on a more general significance, since they mostly derive from the World Health Organization (WHO) recommendations and were introduced widespread. To gather relevant data on citizens compliance with the norms, geographical factors, psychological characteristics and (mis)information consumption choices, we adopt a multidisciplinary perspective combining a traditional consumer survey with an experiment design focused on individual mood and perceptions. The results of the analysis allow to evaluate the expected short- and long-term effects of the norms, both with reference to those posed to combat the pandemic, and to social norms more generally.

Introduction

A society is based on a system of legal and social norms that govern it. The current form of this system has profound and long-lasting effects on its members’ lives. Norms influence not only their life prospects, but more deeply their goals, their attitudes, their behaviours, their relationships, and their dispositions. By complying with this system of norms, citizens consent, either explicitly or tacitly, to relinquish some of their rights in exchange for protection of their remaining rights or maintenance of the social order.

In this context, efficacy (or effectiveness) is one of the essential elements of norms (Burazin, 2019). Efficacy has different meanings within legal framework; here we take a positivistic view that norms are efficacious if citizens comply with it or observe it (Grabowsky, 2013). That is, we consider the so-called “primary efficacy of legal norms”.

In this regard, “a norm N prescribing some action A is observed when agent x performs an specific action a if and only if (i) a can be regarded as an instance of A , (ii) x is one of the addressees of N , and (iii) a happens in accordance with the spatial and temporal condition of application of N ” (Navarro and Moreso, 1997).

In other words, compliance with the norms consists in the fact that the actual behaviour of the addressees of the norm corresponds to what is required by the norm. Such efficacy may be “finalistic” rooted, if there is a relationship of identify between the required and the produced behaviour of addressees, or psychologically/motivationally rooted, if addressees consciously produce the required behaviour on the basis of the legal norm (Burazin, 2019).

In this positivistic framework, efficacy is a condition of legal validity, i.e. the norm loses its validity if it becomes permanently inefficacious: a norm “in order to become valid, it must have the possibility of being effective” (Kelsen, 1990).

In sum, the primary efficacy (and validity) of the norms depends on the degree of compliance of the addressees of the same, and this in turn can be of both a finalistic and/or psychological-motivational nature.

These considerations become more complex when, in a liberal society, it is necessary to promptly introduce new norms that, in order to protect some fundamental rights, restrict (at least temporarily) other fundamental rights.

Such is the case of the management of the COVID-19 pandemic: since the beginning of 2020, governments of all countries in the world needed to intervene to safeguard public health by introducing norms aimed at limiting the spread of the disease. These norms have involved some important restrictions on individual freedoms as well.

In this case, the timely assessment of the effectiveness of the norms takes on even greater significance. First, the immediate efficacy of the norms is essential to protect public health. Second, these legal rules display significant, short- and long-term effects (economic, psychological and motivational) that need to be carefully considered in order to appreciate their social efficacy in different time horizons. In this sense, an overall assessment of the norms is necessary not only to evaluate the appropriate degree of balance of protection of the different individual rights, but, above all, to analyse their social sustainability in a wider time horizon, compared to the one initially foreseen.

The objective of this article is therefore to analyse the efficacy of some of the norms that have been imposed by governments worldwide to contrast the spread of the pandemic by evaluating the level of compliance of the population.

To this end, the analysis is carried out on Italy which, in February 2020, was the first western democracy to face the pandemic and its effects. The norms (e.g. lockdown, social distancing, use of facemasks) were introduced by the Italian government in March 2020 to contrast the spread of the virus, but, at the same time, take on a more general significance. Indeed, they mostly originated from WHO recommendations and were introduced worldwide.

After a description of the context in which the norms were taken and a presentation of the experimental methodology used, the article assesses the level of compliance of the Italian population with these legal rules and, above all, investigates the determinants that led Italian citizens to either follow or break them. The results of the analysis allow to evaluate the expected short- and long-term effects of the norms, both with reference to those posed to combat the pandemic, and to social norms more generally.

Context

On 31 December 2019, the WHO received information of cases of pneumonia of unknown cause in Wuhan City, China. The cause was identified by Chinese authorities as being a novel coronavirus afterwards named the “COVID-19 virus”. Due to the rapid increase in the number of cases outside China,

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in late February 2020, WHO issued some general recommendations. These provided social behavioural rules for personal hygiene and habits, cough etiquette, use of facemasks, and keeping a distance of at least one metre from persons.

After China, Italy was the first western country to report a case of death due to COVID-19 dated on 21 February 2020 in Lombardy, followed by a series of outbreaks in the Northern regions and a rapid increase of deaths and cases of infection. In response to this emergency, Italy was the first western country to adopt restrictive physical and social distancing rules to limit the spread of the disease. This led on March 5, to the issue of recommendations by both the Ministry of Health and Italian National Institute of Health (ISS) to counteract the spread of the coronavirus.

On March 8, the Italian government approved a decree (i.e. "DPCM 8 Marzo 2020") to lock down Lombardy and 14 other provinces in Veneto, Emilia-Romagna, Piedmont and Marche, involving more than 16 million people. The decree prescribed to "absolutely avoid any movement into and out of the areas" and provided sanctions of up to three months in prison for those who violated the lockdown. It was possible to move into and out of the areas only for emergencies or "proven working needs" to be authorised by the authority. The overall measures were described as the largest lockdown in the history of Europe, as well as the most aggressive response taken in any region beyond China.

The next day, on March 9, the government signed a new executive decree (i.e. "DPCM 9 Marzo 2020") that extended these measures to the whole country, which led to a full lockdown until May 2020 (the so-called "phase 1").

Within the framework of the decree, legal rules were taken that reflected the previous recommendations of the Ministry of Health and the ISS. These can be summarised as follows:

- Leave home only for legitimate reasons (so-called lockdown measure)
- Wash your hands often with soap and water or using an alcohol-based hand disinfectant
- Keep a safe distance from other people (so-called social distancing)
- Avoid hugs and handshakes
- Cough or sneeze in the elbow crease or use a paper handkerchief, covering your nose and mouth
- Avoid the promiscuous use of bottles and glasses, in particular during the sport activity
- Do not touch your eyes, nose or mouth with your hands unless washed
- Do not take antiviral drugs and antibiotics, unless are prescribed by a doctor
- Clean surfaces with chlorine-based disinfectants or alcohol
- Wear the facemasks according to the requirements (i.e. if you suspect that you are ill or if you are caring for sick people)

These norms lasted at least until May (end of so-called "phase 1"), so that the second phase began with the end of the lockdown (May 3), the reopening of nonessential activities (May-June depending on the

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type of activity), and the end of the prohibition of individual movements outside people's region of domicile (June 2).

Since the beginning of the emergency and up until the very end of “phase 1”, there had been 233,515 confirmed cases of COVID-19 with 33,530 deaths reported (as of 2 June 2020, data retrieved from the Italian Ministry of Health).

Methods

One of the main challenges to study how people react to norms is the availability of measures regarding the underlying cognitive process. Typically, the decision to comply (or not to comply) to the norms is the result of a decision-making process carried out implicitly by each individual.

To retrace this process, many complex and different aspects (education, perceptions, psychological factors, socio-economic context, media context, etc.) are fundamental to explain how citizens react to different normative regimes.

To gather relevant data on citizens compliance, geographical factors, psychological and motivational characteristics and (mis)information consumption choices, in this study we adopt a multidisciplinary perspective, as suggested by van Bavel et al. (2020), combining a traditional consumer survey with an experiment design focused on individual mood and (mis)perceptions (see Fig. 1).

This experimental method allows us to shed light on the decision-making process of reacting to new norms; at the same time a consumer survey allows us to have a random, large, and statistically representative sample, thus avoiding sample selection bias issues.

Sample characteristics

The sample was randomly drawn so as to represent the Italian population in terms of gender, age, location of residence and education. It consists of 7,015 individuals aged 16+. It was divided into two representative groups depending on the experiment method adopted (telephone/online interview), in order to further avoid sample bias and to perform different types of experiments and tests.

The study was conducted just after the lockdown phase, in June 2020 (from the 4th of June to the 19th of June), in order to collect the immediate reaction of Italian population to the emergency. Indeed, we carried out the survey as soon as the lockdown phase was just over (i.e. “Phase 1”), with the re-opening of manufacturing industries and construction sites and the restart of movements across Italian regions (from June 3). This timeframe appears ideal to conduct a field analysis because the whole lockdown phase had just ended, the citizens' memory of the period just passed was still intact and the organisation of such a complex survey was feasible.

Table 1: Definition of explanatory variables

Measures of covariant dimensions

As first step, all participants were asked some socio-demographic information about their age, gender, place of residence, professional status, and education (see Table 1 for definitions and Table 2 for summary statistics of explanatory variables). Then they were informed on the study objectives and instructed on how to respond to the questions. The main concern was to prevent participants from thinking they were being judged by answering questions. In addition, the interviewees were informed that all their personal data would be acquired anonymously and in full compliance with privacy laws.

At this stage two further elements that are fundamental in the current pandemic context were added. First, we added variables concerning the experience of the individual during the pandemic (see model 2 of Table 5). COVID-19 is a dummy variable which is equal to 1 when the individual or someone in her/his family tested positive to coronavirus, 0 otherwise. Moreover, we controlled for the effect of the lockdown measures introducing a dummy variable that is equal to 1 whenever the individual kept on going to the workplace during the lockdown period and is 0 in the opposite situation of people staying at home.

Table 3: Summary statistics of geographical variables

Table 5: % of Italian citizens by level of compliance to each single rule

To evaluate mood and feelings of the Italian population, a psychometric approach was adopted (see Delmastro and Zamariola, 2020). Due to the special nature of the period which prevents to conduct experimental studies meeting participants face-to-face, a psychometric self-reporting methodology was chosen. We adopted the short version of the Mood and Feelings Questionnaire (SMFQ; Angold et al., 1996) which includes 13 items indicating how much individuals have felt or acted depressed during the last few weeks (e.g., “I felt miserable or unhappy”, “I didn’t enjoy anything at all”). The answers are given on a three-point scale where respondents are asked to decide if the statements are “true”, “sometimes true”, or “not true”. Scoring of the SMFQ is obtained by summing together the point values of responses for each item. The response choices and their designated point values are as follows: “not true” = 0 points, “sometimes true” = 1 point, “true” = 2 points. The range of scores on the SMFQ varies from 0 to 26. A score of 12 or higher may indicate the presence of anxiety and depression in the respondent (see among others Thabrew et al., 2018).

After this section, the experience continued along three following stages.

1. News and information sources. Participants were asked to select their main sources of news and information about the COVID-19 pandemic. The list of sources included: i) professional news outlets (i.e. TV news and programs, newspapers, and online news outlets); ii) online algorithmic platforms (social networks, search engines); iii) national (i.e. Government, Ministries and Italian Department of Civil Protection), regional (i.e. 20 Italian Regions) and scientific institutions (e.g. Italian National Institute of Health, World Health Organization).

2. Perception. For the some of the main aspects of the COVID-19 pandemic (e.g. coronavirus, COVID-19 disease, facts and events), participants were interviewed with 5 multiple-choice questions. The bias in perception is therefore calculated as a wrong or as a "don't know" answer (i.e. incorrect). For each individual j , the misperception index is therefore calculated as follows:

$$MI_j = \frac{\sum_{i=1}^5 D_{ij}}{5},$$

where: D_i is a dichotomous variable that is 1 if the answer is incorrect and is 0 otherwise.

3. Vulnerability to misinformation on COVID-19. After the questions on perception of the pandemic, participants were randomly presented with a set of 6 news titles reported in an anonymised form (without source indication). At this point, they were asked to indicate a level of trust (or accountability) for each news (i.e. "True/False/I don't know"). The articles consisted of news on COVID-19 that had actually circulated on Italian media outlets and were randomly chosen among different sources including both fake (3 for each individual) and not fake news (3). Vulnerability is therefore calculated as a wrong or as a "don't know" answer (i.e. incorrect). For each individual j , the vulnerability index is therefore calculated as follows:

$$VI_j = \frac{\sum_{i=1}^6 D_{ij}}{6},$$

where: D_i is a dichotomous variable that is 1 if the answer is incorrect and is 0 otherwise.

Measures of compliance with the norms

The final step has been the analysis and quantification of the compliance of Italian population to the norms introduced by the Government, by March 9, 2020, to contrast the COVID-19 pandemic (see above; in a similar but more limited vein see Briscese et al. 2020).

Six of the previous norms that constitute the legislative system introduced by the government to combat the pandemic have been analysed. By using the previous notation, for each norm N_i ($i = 1, 2, \dots, 6$) the prescribing actions (A_i) were:

1. Leave home only for legitimate reasons (so-called lockdown measure) (N_1)
2. Wash your hands often with soap and water or using an alcohol-based hand disinfectant (N_2)
3. Keep a safe distance from other people (so-called social distancing) (N_3)
4. Cough or sneeze in the elbow crease or use a paper handkerchief, covering your nose and mouth (N_4)
5. Do not touch your eyes, nose or mouth with your hands unless washed (N_5)
6. Wear the facemasks according to the requirements (N_6)

It is important to note that the addressees of the norms were all Italian citizens (spatial condition: all Italian regions) and that the temporal condition of application (T) was (at least) the so-called “phase 1” that lasted from March to May 2020.

An action a_{ij} of citizen j has been regarded as an instance of A_i defined by the norm N_i if the citizen claimed to have observed the norm during the temporal condition of application, where the level of compliance with the norm N_i is measured as follows:

- a) **Never: no compliance** ($a_i \notin A_i, \forall t \in T$, so $N_i=0$)
- b) **Occasionally: low compliance** ($a_i \in A_i$, for few $t \in T$, so $N_i=1$)
- c) **Sometime: average compliance** ($a_i \in A_i$, for some $t \in T$, so $N_i=2$)
- d) **Often: high compliance** ($a_i \in A_i$, for most $t \in T$, so $N_i=3$)
- e) **Always: full compliance** ($a_i \in A_i, \forall t \in T$, so $N_i=4$)

Based on this, for each citizen j , a Compliance Index of the norms system (NS) has been calculated as follows:

$$CI_j = \sum_{i=1}^6 N_{ij}.$$

CI is an integer that lies between 0 (no compliance with the NS) and 24 (full compliance with the NS).

Results

Distribution of the Compliance Index among Italian population

Figure 2 plots the density function of the Compliance Index among Italian population in June 2020. The distribution is negatively skewed with mean equal to 21 (out of 24) and median higher and equal to 23.

This means that the overall compliance of the Italian population to the system of norms (NS) introduced by the Government to contrast the pandemic has been, at least in the initial phase (March-May 2020), very high, with 42% of citizens exhibiting full compliance with the whole system of norms (i.e. $CI = 24$). Only 5% of Italian population scored 12 or less, and just 0.23% of it never followed any rule ($CI = 0$, i.e. no compliance with the NS).

Covariant dimensions of overall compliance

Figure 3 shows the density function of the Compliance Index in relation to four covariant dimensions: gender, mood, perception of the COVID-19 pandemic, and vulnerability to fake news. It appears

graphically evident that gender and, above all, mood and (mis)perception figure prominently in shaping compliance to norms.

In order to control for spurious correlations, we run econometric models. Given the nature of the dependent variable, i.e. the Compliance Index (an integer that ranges from 0 to 24), count (Poisson) models with double censoring (0 to the left, and 24 to the right) and robust standard errors have been estimated. Results are presented in Table 4 (linear models are reported in the Appendix, see Table A.1).

Table 4: Count (Poisson) regression models with double censoring (0-24) on the Compliance Index

We first concentrate on socio-demographic characteristics of Italian citizens (model I in Table 4), obtaining both predictable and surprising results. While the (positive) effect of age and gender (i.e. woman) on legal compliance is standard in psychological and sociological literature (see for instance, Wenzel 2005), that of education is quite surprising. In fact, the graduation variable is negative and significant (in all models), showing, other things being equal, an inverse impact of education on compliance with the norms. The subsequent estimates on each single legal rule will clarify further the result found (see Table 6).

Table A.1: Linear models on the Compliance Index

Table A.2: Ordered probit models on compliance (0-4) to single rules

Table 6: Multivariate probit models on compliance (0-1) to single rules

Finally, the negative and significant effect exerted by professional insecurity (the coefficient of “professional unstable status” is -0.0874 with s.e. equal to $.0134$) introduces the issue concerning the mood and mental states of citizens during the pandemic and the impact of psychological and motivational factors on compliance.

In fact, when we introduce symptoms of anxiety and depression (i.e. the variable MFQ in model II in Table 4), the effect on compliance is significant (coefficient equal to -0.00777 with s.e. 0.00079): if we move from a citizen with no symptoms to one with the highest value of MFQ, the Compliance Index drops by more than three points, which, on average, amounts to a 18% decrease.

Equally important is the effect of physical health and in particular whether or not one has been exposed, either personally or within the family, to COVID-19 (see again model II in Table 4). The variable COVID-19 is negative and significant in all estimates, showing an inverse relation between norm compliance and virus contagion.

The third step concerns the analysis of the news media mix (model III in Table 4). In this regard, there is a significant correlation between the different sources of information about the pandemic used by citizens and their compliance: those who get informed from professional news outlets are more likely to respect

norms (coefficient .156 with s.e. .0353), while those who acquire information and news from social media and search engines show the opposite behaviour (-.0657 with s.e. equal to .00835).

However, the most interesting aspect is perhaps related to citizens' use of institutional and scientific sources. The pandemic has in fact brought new information needs that have been met by accessing directly to information and data, without the intermediation of professional news outlets or online platforms. In this regard, it is evident from the estimates that citizens who get informed (also) by official sources are the ones who tend to respect the norms the most (the coefficient of "national institutions", "regional institutions" and "scientific institutions" are all positive and significant in model III of Table 4).

As a final step we introduce the variables related to misperception and vulnerability to misinformation on COVID-19 (model IV in Table 4). The results of the estimates show that even if both factors exert a negative impact on compliance, the first is highly significant (-.154 with s.e. .0218) while the second is not (-.00608 with s.e. .0180). This does not mean, however, that misinformation does not affect citizens' social behaviour, but that compliance with the legal norms depends on misinformation only to the extent that it is related to misperception.

Having said that, the size of the negative effect of misperception on compliance to norms is large: the difference in the Compliance Index between those who have a clear vision of the pandemic and those who are bound by full misperception is more than 20%.

A last remark concerns the effect of geographical control variables (see Table 3 for definitions and summary statistics and the bottom of Table 4 for results of the estimates). While the result of the dimension of the place of residence (positive and significant) is expected, considering the epidemiological characteristics of the phenomenon, the other results are more surprising. First, as confirmed by other studies carried out on Italy, the territorial variability of the pandemic does not appear to have produced substantial differences in the social behaviour of citizens of different regions (as well as in their mental states – Delmastro and Zamariola 2020 - and in their demand for news and information – Castriota et al., 2020). Second, the adherence of the citizens of the region to other rules (such as vaccination recommendations) is not related, as one might expect, to compliance with the norms system set to fight the pandemic COVID-19. In this sense, results indicate that the pandemic is a rather unique phenomenon that produces psychological and behavioural effects, even on citizens living in the least (or not yet) affected areas of the country.

Compliance to single norms

A further analysis concerns citizens' compliance with the individual legal rules introduced by the Italian government to fight the pandemic (see Context). Table 5 shows the percentage distribution of the compliance level with respect to each of the six norms considered.

Two main findings can be observed. First, as emerged from previous analysis, compliance is generally very high, to the extent that the prevailing level is by far the highest (i.e. "full compliance"), with Loading [MathJax]/jax/output/CommonHTML/fonts/TeX/fontdata.js . However, there is a significant variability

between the level of compliance with the different legal rules, with a hierarchy due to the perceived importance and enforceability: they range from the lightest and least effective behavioural norms (“Do not touch your eyes, nose or mouth with your hands unless washed” and “Cough or sneeze in the elbow crease or use a paper handkerchief, covering your nose and mouth”, whose highest level score 53% and 66%, respectively) to those considered more effective to contrast the pandemic and/or administratively more binding (“Leave home only for legitimate reasons” and “Wear the facemasks according to the requirements”: 77% and 81%, respectively).

Subsequently we proceed to estimate a multivariate probit regression model (see Cappellari and Jenkins, 2003) with six equations (and robust standard errors), where, for each legal rule, the dependent variable takes a value equal to 1 in the case of full compliance (i.e. $N_j = 4$) and otherwise is set to 0 (six independent ordered probit models have been also estimated; results of these models are reported in the Appendix, see Table A.2). Results are presented in Table 6.

First, there are factors that influence the compliance with all norms and that in this sense appear to influence the overall approach of citizens to legal rules and therefore more generally to society. These are the gender (with women who are more inclined to abide by the rules), the health status of people, either physical (i.e. the COVID-19 disease) or mental (psychological and motivational), as well as, above all, the perception of individuals about the issue covered by the norms (i.e. the pandemic) and their overall disposition to inform themselves about it.

There is also the case of those factors that influence only the compliance with some specific norms by citizens. In this group, beyond factors such as age and professional stability that show positive and negative coefficients respectively, there is the intriguing case of education. It has already been noted that, all other things being equal (e.g. level of information and perception of the COVID-19 pandemic), education is negatively related with the overall compliance with the norms (see Table 4). Table 6 shows how the level of education reduces the probability of the individual to wear facemasks. This is an empirical confirmation of some anecdotal evidence according to which, in Italy and abroad, also highly educated people have been challenging the use of facemasks identifying them as a symbol of a policy of violation of personal freedoms.

Finally, some factors do not display any significant relationship with the compliance with the various norms. As mentioned earlier, this is surprising for at least two groups of variables. The geographical control variables related to the territorial spread of the pandemic and the traditional observance of medical recommendations are not correlated with the compliance of any of the COVID-19 norms. In addition, the vulnerability of citizens to misinformation does not appear to affect behavioural patterns. However, this result must be precisely defined, since in the absence of a measure of misperception, vulnerability to fake news would become (negative and) significant, especially in the case of certain norms (i.e. “keeping a safe distance” and “lockdown”). In other words, gullibility results in conducts that do not conform to the norms only when it is accompanied by a misperception of the phenomenon and is not caused instead by other reasons such as distraction, superficiality, or lack of interest.

Discussion

In this paper, the issue of the efficacy of the norms has been addressed, analysing citizens' compliance with some of the legal rules that have been introduced worldwide (based on the recommendations of the World Health Organization) to counteract the spread of the COVID-19 pandemic.

We do this on the basis of a complex empirical methodology that combines the advantages of an extensive survey on a random sample representative of the Italian population with a series of psychometric measures and tests on the ability of citizens to comprehend the epidemiological phenomenon and to correctly distinguish true from fake news. This methodology is based both on consolidated and robust techniques of inferential statistics and innovative methods scientifically validated in the psychometric component (see Delmastro and Zamariola 2020) and in the testing of perceptions (see Alesina et al. 2018) and the evaluation of news reliability (see Allcot and Gentzkow, 2017, Allcot et al. 2019, and Delmastro and Leonardi, 2020).

In addition, the analysis was conducted in a particular and unique moment, June 2020, when Italy, which was the first country in the western world to suffer the outbreak of the pandemic COVID-19 and to introduce legal norms against its spread, had just come out of the so-called "phase 1", i.e. the lockdown period.

It is the author's opinion that the results achieved in this paper may be valuable both in general for the study of the efficacy of legal norms, and in particular for those that contrast the spread of the COVID-19 pandemic.

A first consequence of the results of the article is that norms produce holistic effects. Consequently, their effectiveness depends not only on the ability to achieve a specific goal in abstract (e.g. to fight the pandemic) but also on their capacity in stimulating citizens to follow them (i.e. motivational and psychological factors). This is even more important in cases where the enforcement of the norms is very complex, if not (at least for some of them) impractical.

In this direction, the results show on the one hand that in the Italian case the norms have been followed by an extraordinarily large number of people, on the other hand as some of the problems that are being encountered worldwide in the second phase of the pandemic were already implicit before.

With regard to this second aspect, it has been shown, for example, how compliance depends on economic and psychological stress factors, which are in turn partly induced by the containment measures. The outbreak of economic and psychological issues leads to an unavoidable loosening of compliance among citizens, which in turn may boost the spread of the virus.

It is therefore to be expected that some of these norms may be very effective in the short term, but in the long term they may also suffer problems if not supported by effective economic and psychological actions to support the population. In other words, in order to be future-proof, the norms must be taken

Loading [MathJax]/jax/output/CommonHTML/fonts/TeX/fontdata.js endogenous cycle in which a phase of

restrictions is followed by strong negative consequences in economic, employment and motivational terms, with negative effects on citizens' compliance with the same norms.

Another aspect concerns the dissemination and sharing of news and information. Indeed, in the outbreak of a new virus knowledge is not consolidated and evolve quickly, thus the demand for news and data is very high. First, it has often been argued that an “infodemic” is taking place by referring to the spread of a large amount of news often unreliable (see Cinelli et al. 2020). This article (see also Castriota et al. 2020 that analyse the demand for television news in Italy) shows how the supply of news has been driven by a huge demand for information and data on the pandemic by citizens, so that sources of institutional information, which are normally not used, have gained a strategic value in the current moment (with penetration rates between 60 and 70% of the population).

In this context, the most important aspect is not so much the proliferation of fake news, which unfortunately has been rather common for years and does not seem to characterise this period in particular, but the construction of an adequate and shared knowledge of the phenomenon. The absence of a consolidated knowledge in the presence of an epidemiologically new phenomenon contributes to create wide areas of misperception, even in the face of a huge demand for news and information. Professional and institutional communication should therefore strive to give easy, robust and fair interpretations of the phenomenon in progress.

A final point concerns the balancing of interests. It is quite astonishing, but only to a summary and simplistic analysis of society, as even people with a high intellectual background can be led to disregard some norms put in place to combat the pandemic. On the other hand, the introduction of norms of social containment has been taken quickly, without discussion and sharing, leading to considerable, albeit justified, restrictions on individual freedoms. It is therefore not surprising that this process could lead to the emergence of movements, including intellectual movements, that challenge the rules and that, in the long run, could undermine the respect of the norms and social stability.

Conclusions And Future Work

Since, as said, norms have a dynamic value, it is possible to trace two future research paths.

First, a further analysis must necessarily follow the future evolution of the norms and their compliance also in relation to the evolution of the pandemic and of the other measures taken by governments (e.g. economic interventions, social measures, health policies).

This second dynamic step may also give the opportunity to analyse (some) causal links between the different factors, being however aware that the social dynamics are very complex and there are continuous, intricate feedback links between all social factors which are in any case very difficult to disentangle.

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Tables

Due to technical limitations, the tables are only available as a download in the supplemental files section.

Figures

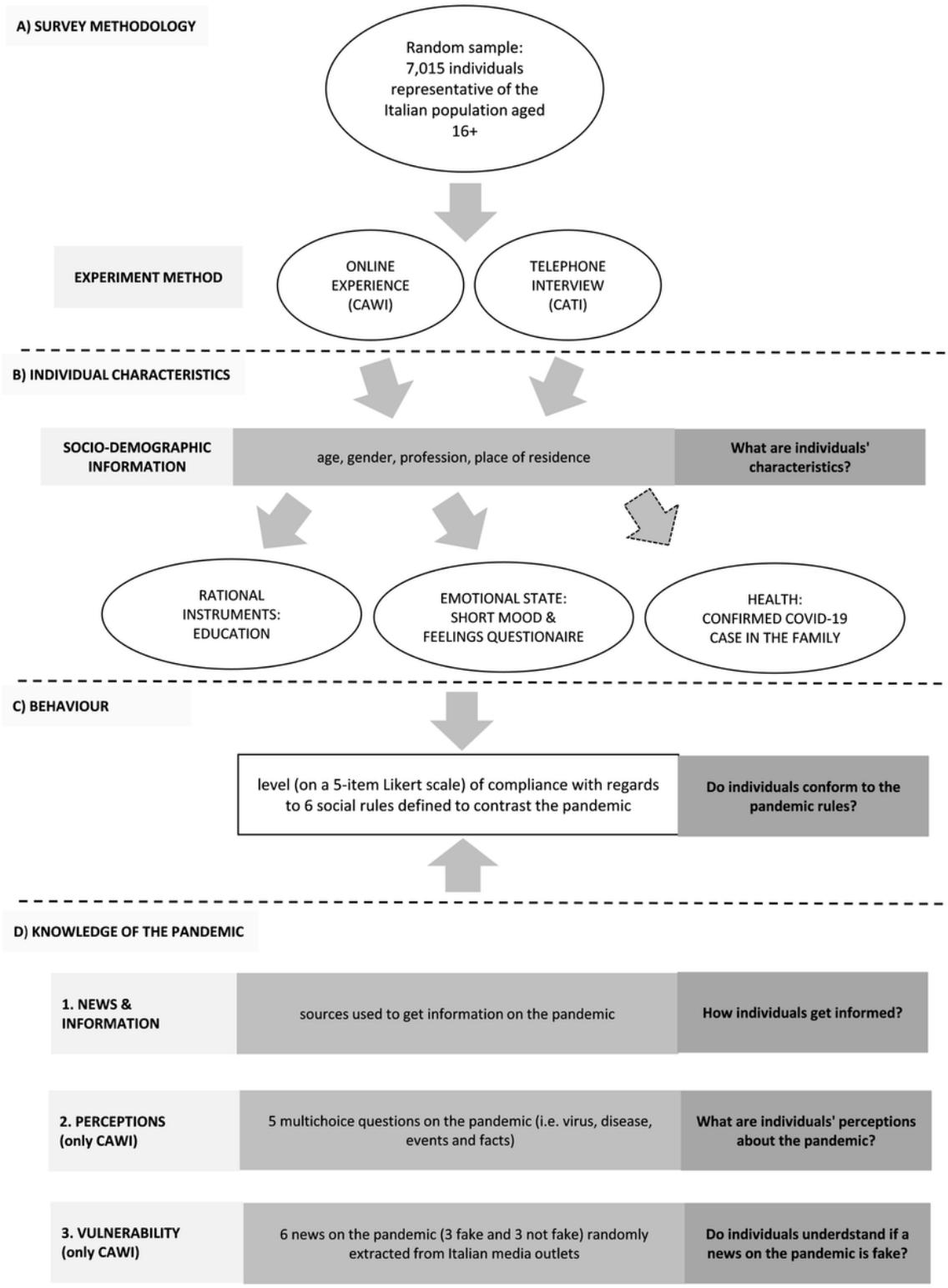


Figure 1

Sampling and experiment design

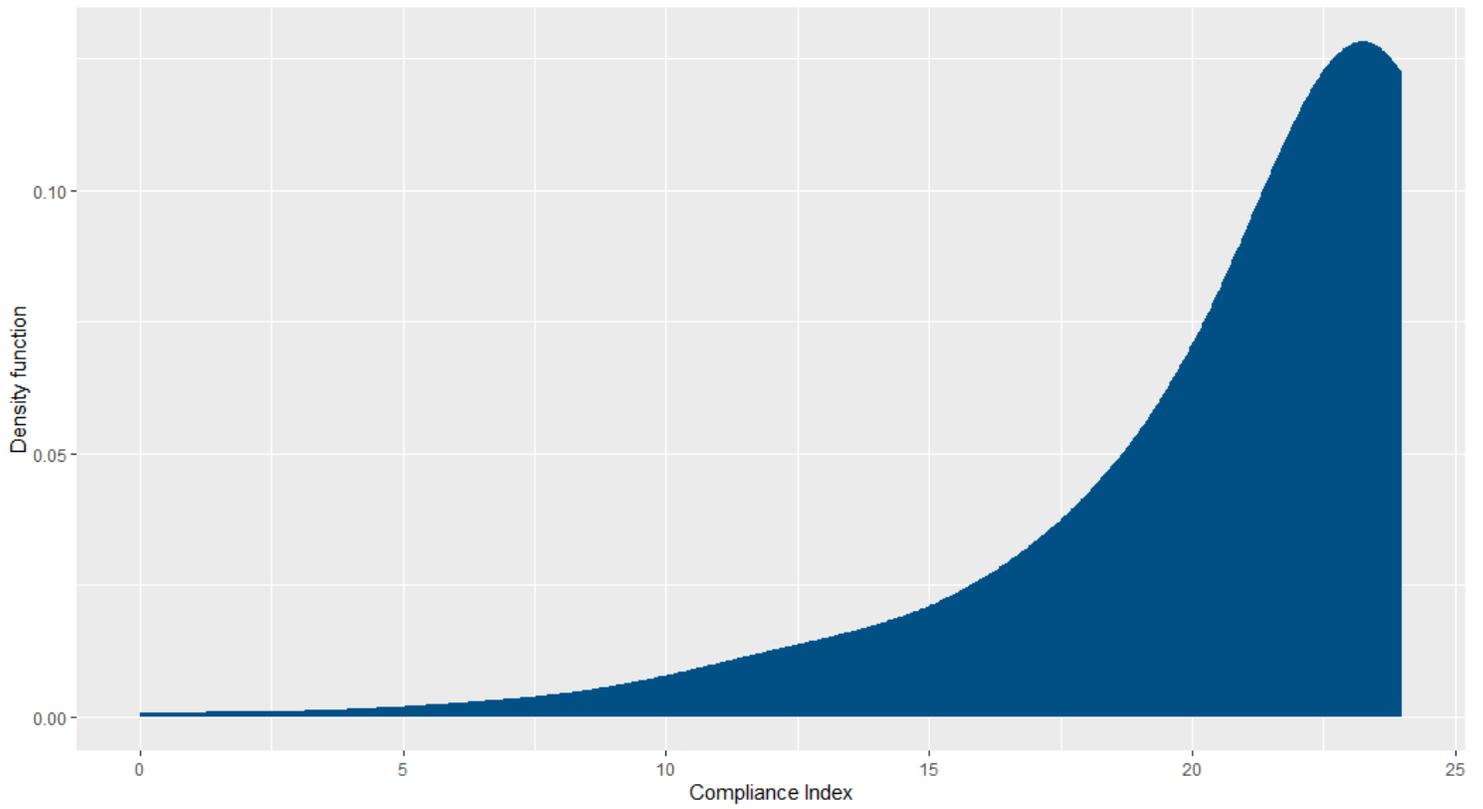


Figure 2

Density function of the Compliance Index of the Italian population

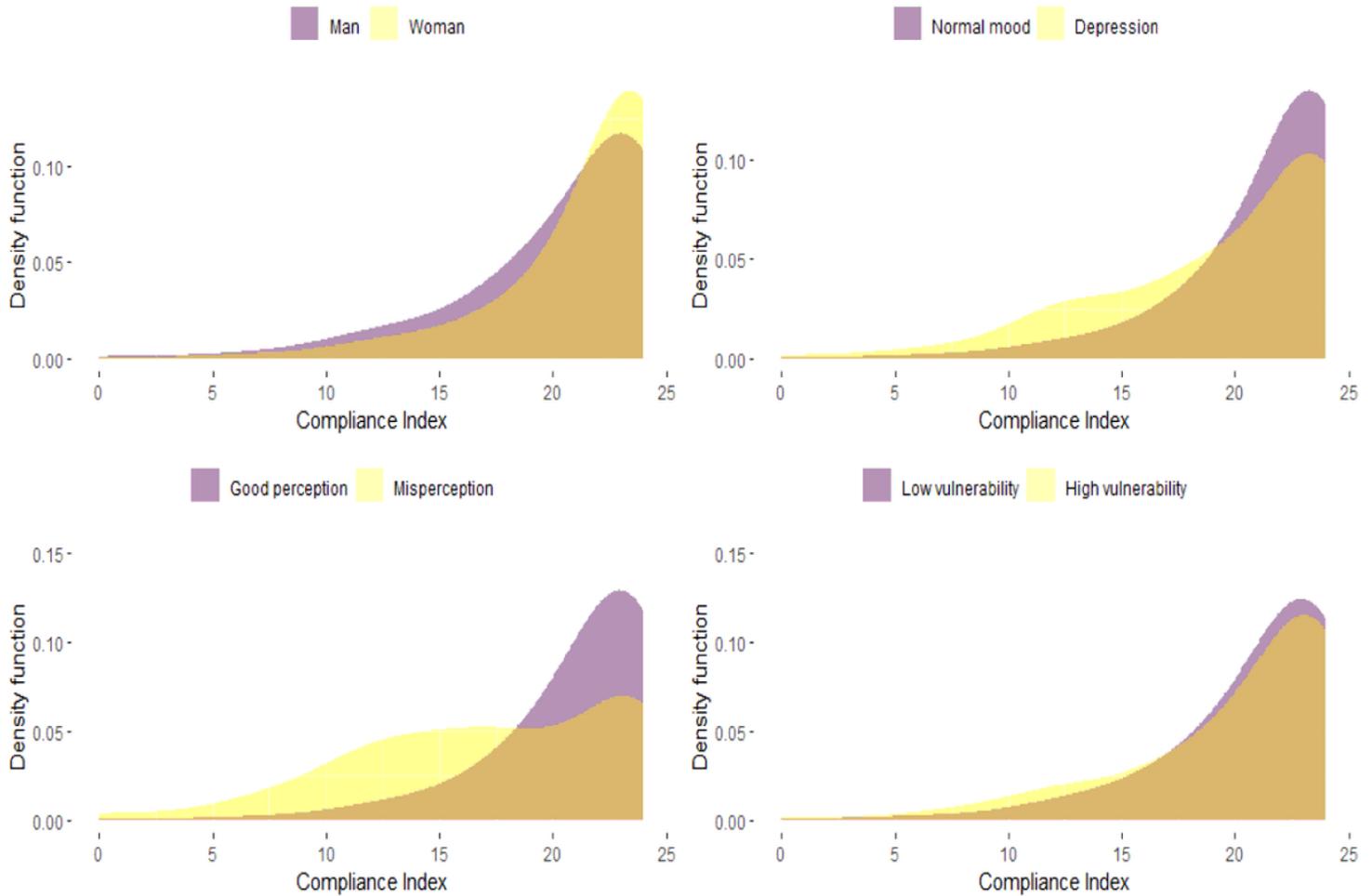


Figure 3

Density function of the Compliance Index as a function of: i) gender (up-left); ii) mood (up-right); iii) perception of the pandemic (bottom-right); iv) vulnerability to misinformation on the pandemic (bottom-right) Note: population has been split into two groups according to: i) gender: men and women; ii) mood: “depression”, for individuals who scored 12 or higher to the SMFQ (see Delmastro and Zamariola 2020, Thabrew et al., 2018), and “normal mood”, for individuals who scored 11 or lower to the SMFQ; iii) perception of the pandemic: “good perception” for individuals who answered at least 50% of the questions on the pandemic correctly, “misperception” for individuals who failed more than 50% of the questions; iv) vulnerability to misinformation on the pandemic: “low vulnerability” for individuals who recognized at least 50% of the fake news about the pandemic; “high vulnerability” for individuals who trusted more than 50% of the fake news about the pandemic.

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [Tables.pdf](#)

- [Appendix.docx](#)