# BRIDGING INTENTION-ACTION GAP FOR HEALTHCARE MEASURES DURING THE COVID-19 LOCKDOWN

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## *Abstract*

*The COVID-19 Pandemic has proven to be a challenge that forced everyone to rapidly adapt to a new way of distanced functioning and to adopt preventive measures. With a significant body of literature dealing with the general inconsistency between intention and action, also known as the intention-action gap, the present paper aimed better grasp the citizens' tendency to engage with general healthcare measures and the commitment to the COVID-19 safety measures recommended during the lockdown. Participants self-reported their conduct at the beginning of the COVID-19 lockdown (early March) and the ending of the COVID-19 lockdown (early May). Descriptive statistics and non-parametric analyses testing were used. The preventive recommendations during the COVID-19 lockdown revealed an increased degree of efficient adoption compared to typical healthcare measures. Moreover, results are indicative of an increase in implied impediments between the beginning and the ending of the COVID-19 emergency period, without a notable broadening in the corresponding intention-action gap. This result was attributed to the commonalities between the COVID-19 emergency period and the established behavioural management strategies to reduce the intention-action gap, namely the intention actualization, "cheap talk" approach, "corrective entreaty" method, as well as "intentions implementation" strategy.*

**Keywords**: Intention-Action Gap; Behavioral Engagement; Behavioral Efficacy; Preventive Healthcare; COVID-19 Safety Measures; Social-psychological Behavior; Crisis Management.

## 1. Introduction

Failing to act according to one's intentions is a common observation since it is a recurrent barrier to reaching our aims and potential. Be it choosing a different career path or deciding on a difficult matter, it puts strains on our internal discipline and our mental resources. However, the aspect of our life that requires the most discipline is probably our health. This can be achieved by adopting a healthy diet, physical exercises, a sufficient amount of sleep, and a suitable work-life balance, which, for many of us, is in itself a challenge. It seems that, despite all the

knowledge we have on which preventive measures we should adopt and how we should implement them, we are still bound to fail. For instance, a study conducted in the health domain shows that between 26% and 57% of respondents did not carry their intention to use condoms, exercise, or undergo cancer screening (Sheeran, 2002). Unhealthy eating is another illustration of a weak intention-behavior link (Sheeran & Conner, 2019), leading to major health consequences such as a high risk for cardiovascular disease, diabetes and obesity (World Health Organization, 2019).

The recent COVID-19 virus outbreak rapidly imposed new "keep-healthy" objectives. Our present inquiry is to find whether people succeeded at acting as intended more effectively than they would do otherwise. Even if a pandemic is a rare and very specific event, the social reaction to it presents general elements that can be assimilated as recommendations for crisis management and the management of collective behavior. To be able to deduce and understand these elements, we chose a delimited social context -- the state-declared lockdown between March and May. We will commence by exposing the everyday challenges to act accordingly to stated intentions, with practical recommendations to accomplish health-related goals. Then, we will discuss the COVID-19 lockdown context as having the potential to drive desired behavior by mimicking the mechanisms of these recommendations. Finally, we will investigate the actual efficacy of the COVID-19 lockdown by analyzing the surveyed responses about general healthcare measures and the specific situation of the COVID-19 virus outbreak.

## 2. Literature Review

### *2.1 Challenges and Recommendations for General Healthcare*

People often fail to act according to their stated intentions. Many studies identified a difference in the way people regard hypothetical situations compared to actual situations (Ajzen et al., 2004; List, 2001). The perpetual incongruence between intention and action is sustained with evidence from economic, environmental, and medical studies (Ajzen et al., 2004; Penn & Hu, 2018).

Early takes on the matter attribute the intention-action incongruence to the different perceptions of symbols and reality (LaPiere, 1934; Blumer, 1955). LaPiere (1934) claims that “there is no necessary correlation between speech and action, between response to words and to the realities they symbolize” (p. 231). In other words, the author proposes that intentions belong to a symbolic world, while actions are responses to reality. In our opinion, LaPiere‘s argument still stands, with recent studies arguing that there is a qualitative difference between hypothetical and real context as people construct them differently. Firstly, hypothetical situations activate fewer unfavourable considerations as people overlook real barriers. For example, when bidding in a hypothetical auction, people neglect the decisive distress of opportunity cost (the things that cannot be bought anymore after money is spent) experienced in the real situation (List, 2001). Secondly, beliefs are variant across context -- a theory known as the belief-disparity hypothesis (Ajzen et al., 2004). Action consistent with intentions is only expected when beliefs are congruent between hypothetical and real contexts.

Gershman et al. (1999, October) propose an explanation of the incongruence between the digital and physical world through three major discontinuities: physical discontinuities, information discontinuities, and awareness discontinuities. Adapting Gershman’s model we can identify three types of mental processing barriers that hinder actions to match intentions: temporal barriers, awareness barriers, and information barriers. The current literature on hyperbolic discounting suggests that time is a notable barrier as the passage of time affects perception and changes choices (Quaife et al., 2018). Ensuring time proximity between intention and action together with intention actualization, and progress monitoring are crucial

parts of goal-achieving strategies (Sheeran & Webb, 2016). Studies show that intention actualization can be effectively achieved through low-cost communication strategies such as reminders (Hand et al., 2019). The effectiveness of reminders has been shown especially effective in healthcare contexts where phone calls increased medical appointments attendance by 12%-17% (Sawyer et al., 2002; Lee et al., 2003, Roberts et al., 2007). Besides its direct implications, time also fosters the development of another potential barrier - habits. Bad habits (e.g. wasteful energy consumption) often contribute to the inefficiency to act on good intentions (Lee et al., 2020).

By addressing awareness barriers, some strategies are shown effective in reducing the intention-action gap: "cheap talk" approach, "corrective entreaty" method, and "implementation intentions" strategy. All these methods employ awareness by highlighting the barriers experienced during an actual situation. The "cheap talk" approach comprises a script presented just before expressing an intention (List, 2001). The script describes the drawbacks experienced in an actual situation. Similarly, before intention formation, the "corrective entreaty" method exposes the conceptual problem of a disparity between a fictional and a real scenario (i.e. intention-action gap, hypothetical bias, or belief-disparity; Ajzen et al., 2004). Finally, the "implementation intentions" strategy that emphasizes an intention already expressed and provides in detail the when, where, and how of future action (Kersten et al., 2015; Saddawi-Konefka et al., 2016). It may also create an action framework where individuals trying to achieve a desirable outcome are forced to take into consideration potential adversities. While the first two approaches consist of brief exposure to the practical and conceptual impediments of real contexts, the latter represents a more in-depth and systemic understanding of barriers, limitations, and ways to overcome them. These methods boost the affective "cold" persona to appreciate how actual "hot" situations are experienced by considering those barriers that are easily overlooked from a distance -- usually an emotional distance between the current self and future self (Loewenstein, 2005; Kang & Camerer, 2013; Dillard et al., 2020).

For more cognitively complex barriers concerning information and context understanding, studies appeal to knowledge. Hidalgo-Baz et al. (2017) suggest that knowledge helps transmit attitudes to behaviours by overcoming the lack of confidence or the misinterpretation of actual contexts. Some authors promote knowledge as a means to understand an actual situation's consequentiality that accounts for people's understanding that their reported attitudes and actions affect policy and the common good. Adequate risk perception is proven crucial when considering breast self-examination, physical exercise, seat-belt used, or dietary behaviours (Schwarzer & Luszczynska, 2008). Furthermore, optimism bias can have a crucial role in adopting health-conserving strategies. (Druica et al, 2020). The authors underline the existence of several distinctions among the conditional particularities of the interviewed, which led to dissimilar healthcare-related approaches under optimism bias. The study also points out several differences in regard to the samples, namely, for the Romanian subjects the level of optimism bias decreased as the level of education was higher, in contrast with the existing literature, while the authors mention in the case of Italy that lack of clarity from the official bodies led to confusion in terms of assessing the healthcare impact of the pandemic, regardless of their educational level.

Asides from the general mental processing barriers exposed so far, we must also note the observational commonality through which multiple individual characteristics contribute to the differences in perception and behaviour. The existing literature on the intention-action gap presents it as a rather general tendency, independent of socio-economic factors. The majority of studies show that neither gender nor income broadens the intention-action gap (Regan & Fazio, 1977; Mjelde et al., 2012; Penn & Hu, 2018). However, some argue that age and education influence the bias ratio (Mjelde et al., 2012) and other evidence suggests that even

gender affects the magnitude of hypothetical bias (Brown & Taylor, 2000; Mitani & Flores, 2014). Worth mentioning is also that, despite increased information availability, people's decision-making capacity is not necessarily keeping up with the expectation of rational decision making and, at the same time, pointing out the increasing importance of social media and online vectors of influence, thus increasing the credibility and authority of certain actions depending on the social network. Such upcoming social opportunities may have already had a lasting impact on how we process and handle an increasingly dynamic and interconnected world. (Balau, 2018). Therefore, further investigation of individual characteristics and the intention-action family of biases is recommended

### *2.2 COVID-19 Lockdown Potential to Reduce Intention Action Gap*

We expected the lockdown to underline strong behavioral engagement with intention as the virus outbreak meets multiple conditions outlined in the above-mentioned strategies to reduce the intention-action gap. Moreover, we expected to identify the manifestation of individual characteristics -- or the lack of manifestation, for that matter -- as underlined in previous literature.

The social reaction to the COVID-19 virus outbreak presents specific features considered effective in diminishing the distance between intention and action. We expected that both self-interest and common good conservation when facing a collective threat with great consequences play the role of the invariant belief between the hypothetical situation and the actual situation. The solidarization tendency of human societies facing natural disasters such as epidemics is well documented in the social psychology literature (Dawson & Verweij, 2012; Prainsack & Buyx, 2012; Lee & You, 2020). Together with the understanding of actions' consequentiality and their impact on the common good, we believe that the characteristic of adequate risk perception was fulfilled during the lockdown.

Time proximity between intention and action, together with intention actualization, was motivated during the emergency period through constant official communication comprising reminders about safety measures and adequate behaviour. Informative communication and diverse scenario descriptions (e.g. how to behave in a supermarket or public spaces) provided during this time are very similar to the established methods in addressing awareness, namely the "cheap talk" approach, the "corrective entreaty" method, and the "implementation intentions" strategy. The informative programs released on diverse communication channels (radio, television, or social media) confronted citizens with specific situations and potential adversities. Citizens had the means to understand the barriers, limitations, and ways to overcome them. Besides the appeal to awareness, complex information concerning the pandemic was highly promoted, all official declarations called upon reliable data and scientific studies.

## 3. Overview of the Current Study

The current study proposes a comparative inquiry of the intention-action gap concerning general healthcare measures (e.g. maintaining good health, having regular health check-ups, seeking out to prevent illness or injuries) and COVID-19 safety measures recommended during the state-declared lockdown due to the virus outbreak. To answer this question, we propose a study where people are surveyed about their attitude towards general healthcare measures and towards the specific situation of the COVID-19 virus outbreak. In both cases, participants' behavior will also be assessed.

We advance the following hypotheses:

H1: *There is a broader gap between intention and action regarding general healthcare measures than COVID-19 safety measures*.

H2: *As implied impediments concerning general healthcare measures increase, the intention to perform a health-beneficial activity decreases. Similarly, actual engagement decreases as implied impediments increase*.

H3: *Perceived impediments will increase between the beginning and the ending of the COVID-19 lockdown, but the engagement with the COVID-19 safety measures will not simultaneously decrease*.

Additionally, we will examine the potential impact of socio-economic factors (i.e. gender, income, age, education) on the magnitude of the intention-action gap concerning general healthcare measures.

## 4. Data and Methods

### *4.1 Procedure and Participants*

A total of 1244 respondents voluntarily participated in an online survey, consisting of a few questions structured as presented in Section 2.2 Materials. Data was collected via Facebook and Linkedin using convenience sampling (Kitchenham & Pfleeger, 2002; Heckathorn, 2011). and snowball sampling methods (Heckathorn, 2011). Even with a non-random initial sample, snowball sampling is shown to approach equilibrium independent of the convenience sample (Heckathorn, 2011). The online surveying approach was especially suitable during the COVID-19 lockdown considering that most activities transferred online (Dockery & Bawa, 2020).

So, we can observe respondents' intention and action towards preventive behavior concerning the COVID-19 lockdown, two different samples of participants completed the survey at the beginning of the COVID-19 lockdown (early March) and the ending of the COVID-19 lockdown (early May). The first sample of 962 participants consisted of 24.6% were males, aged 16 to 79 years (M= 29, SD = 12.8). In terms of educational attainment, most participants (64.8%) completed secondary education, the rest completed higher education (35.2%). The second sample consisted of 282 participants, of which 21.6% males. Participants aged 10 to 79 years (M=20.5, SD = 13.3). Out of 282 participants, 98 completed higher education (34.8%), the rest completed secondary education. Table 1 summarizes the descriptive statistics.

### *4.2 Materials*

The online survey began with participants being informed about the confidentiality of the data collected and by expressing their agreement of voluntary participation. Subsequent questions concerned individual characteristics, namely age, gender, income, and education.

The second set of questions assessed the intention and the action towards general healthcare measures on a 1-7 Likert scale. The questions imply different levels of engagement, both for intention and for action. Each level of engagement assumes a supplementary amount of effort. All items are presented in Table 2.

Table 1 − Demographics and socioeconomic variables

| Variable | First Sample | Second Sample |
|---|---|---|
| Age | Min = 16, Max = 79, M = 29 (SD = 12.8) | Min = 10, Max = 79, M = 20.5 (SD = 13.3) |
| Gender: | | |
| Female | 75.4 % | 78.4 % |
| Male | 24.6 % | 21.6 % |
| Highest level of completed education: | | |
| Secondary education | 64.8 % | 65.2 % |
| Higher education | 35.2 % | 34.8 % |

Table 2: Three Levels of Engagement - Intention and Action

| | Intention | Action |
|---|---|---|
| First Level of Engagement | Maintaining good health is extremely important to me. | I search for new information to improve my health. |
| Second Level of Engagement | I want to discover health problems early. | I seek out ways to prevent illnesses and/or injuries. |
| Third Level of Engagement | I feel it is important to carry out activities which will improve my health. | I have regular health check-ups even if I am not sick. |

Two of the questions presented in the second set, one comprising the intention and the other describing the action, refer to the same specific behavior: (1) "*I want to discover health problems early."* and (2) "*I have regular health check-ups even if I am not sick."* A distance between the responses registered for these questions would determine the intention-action gap regarding general healthcare measures **(H1a).**

The third set of questions measured, on a 1-7 Likert scale, the attitude (intention and action) towards safety measures during the COVID-19 lockdown. The intention was assessed through the following item: *"I am confident I can adopt preventive behaviors against Covid-19* ***correctly****."* The actual engagement with the corresponding behavior was surveyed through the following statement: *"I have adopted preventive behavior against Covid-19."* As in the case of general healthcare measures, these two questions comprise the intention and the action regarding the same specific behavior. A distance close to zero between the responses would indicate that the intention-action gap was effectively reduced during the COVID-19 lockdown **(H1b).**

When assessing intention towards general healthcare (second set of questions), the decreasing agreement between levels of engagement is meant to underline the declining interest (or intention) as implied impediments increase **(H2a).** Similarly, when surveying participation

with different actions, a decreasing agreement between levels of engagement indicates that actual engagement with health beneficial actions decreases as implied impediments increase **(H2b).**

Perceived impediments during COVID-19 lockdown were assessed considering five types of barriers proposed by extant literature: social pressure or stigma (Williams, 2002; Smith et al., 2000; McLeod, 2008), limited time (Sheeran & Webb, 2016; Quaife et al., 2018), limited resources (Moghavvemi et al., 2015), general physical and psychological discomfort (Shelus et al., 2020; Perna et al., 2020). The items addressing these barriers are the following: *"Other people will consider me weird, if I adopt preventive behaviors against Covid-19"* (social pressure), *"Adopting preventive behavior against Covid-19 will take too much time"* (limited time), *"I don't have the equipment to adopt preventive behavior against Covid-19"* (limited resources), *"Adopting preventive behavior against Covid-19 will create physical discomfort" (*general physical discomfort), *"Adopting preventive behavior against Covid-19 will hinder me."* (general psychological discomfort). As an indication of the increasing perceived impediments between the beginning and the ending of the COVID-19 lockdown, we expected the agreement with each of these statements to increase between the first and the second data collection **(H3).**

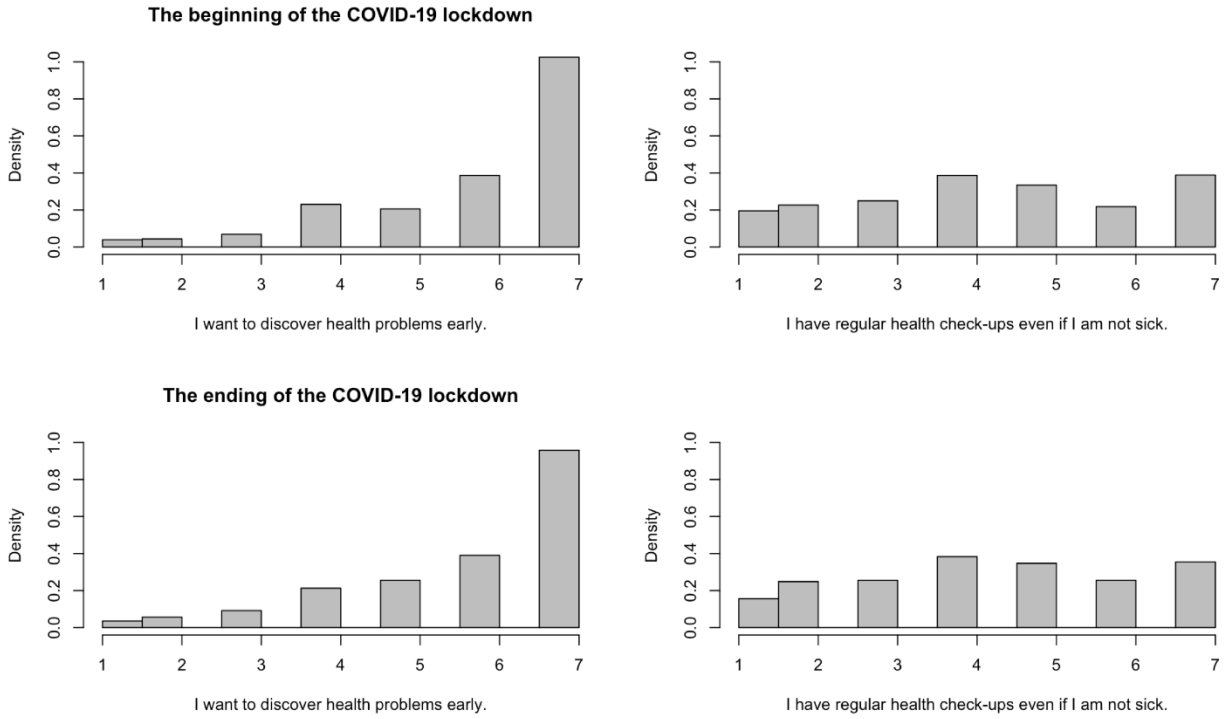
### *4.3 Method*

Given that the distribution of our variables significantly departed from the normal distribution, non-parametric tests were employed to investigate the median differences proposed through the research hypotheses. Considering the increasing emphasis on the importance of effect sizes, all results are reported both on means of p-values and effect sizes (Sullivan & Feinn, 2012; Kelley & Preacher, 2012). We conducted our data analysis using Rstudio software, version 4.0.3.

## 5. Results

To test the first set of hypotheses regarding intention, action, and intention-action gap concerning general healthcare measures and COVID-19 safety measures, Wilcoxon Signed Rank tests were employed. For the intention-action concerning general healthcare measures difference the results revealed a significantly stronger agreement to intention than to action, both at the beginning of the COVID-19 lockdown ($W = 236620$, $p < 2.2e\text{-}16$, $r = 0.65$) and at the ending of the COVID-19 lockdown ($W = 16746$, $p < 2.2e\text{-}16$, $r = 0.65$). Figure 1 shows the response distributions, both at the beginning and the ending of the COVID-19 lockdown.

Figure 1 − Intention-Action Gap Concerning General Healthcare Measure




No intention-action gap was revealed concerning the safety measures during the COVID-19 lockdown at the beginning of the period (W= 36966, p-value = 0.12, r = 0.06) or at the end of the period (W = 3677, p-value = 0.08, r = 0.1). Figure 2 shows the response distributions, both at the beginning and the ending of the COVID-19 lockdown.

To test the impact of implied impediments on the intention towards general healthcare measures, we compared the responses to three levels of engagement. Figure 3 summarizes the responses registered for each level, at the beginning and the ending of the COVID-19 lockdown. Results revealed a significant decrease of the intention to engage in general healthcare measures from the first to the second level of engagement, both at the beginning (W = 563020, p-value < 2.2e-16, r = 0.45) and the ending of the COVID-19 lockdown (W = 47980, p-value = 1.153e-06, r = 0.43). Another significant decrease of intention to engage in healthcare measures was disclosed at the beginning of the COVID-19 lockdown, between the second and the third level of engagement (W = 532930, p-value = 6.182e-10, r = 0.25). The same decrease in intention was not revealed to be significant at the ending of the lockdown ( W = 42142, p-value = 0.1, r= 0.1). Still, there is a significant decrease between the first and the second level of engagement, even at the ending of the lockdown (W = 50245, p-value = 1.279e-09, r = 0.61).

Figure 2 − Intention-Action Gap Concerning COVID-19 Safety Measures.

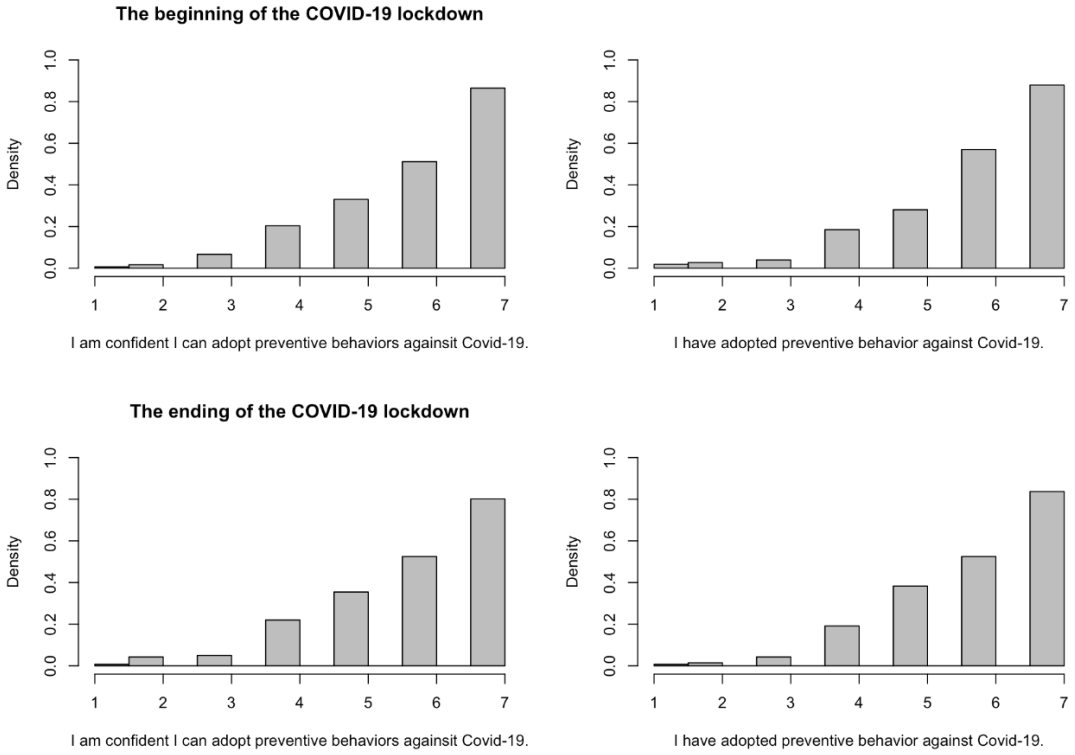
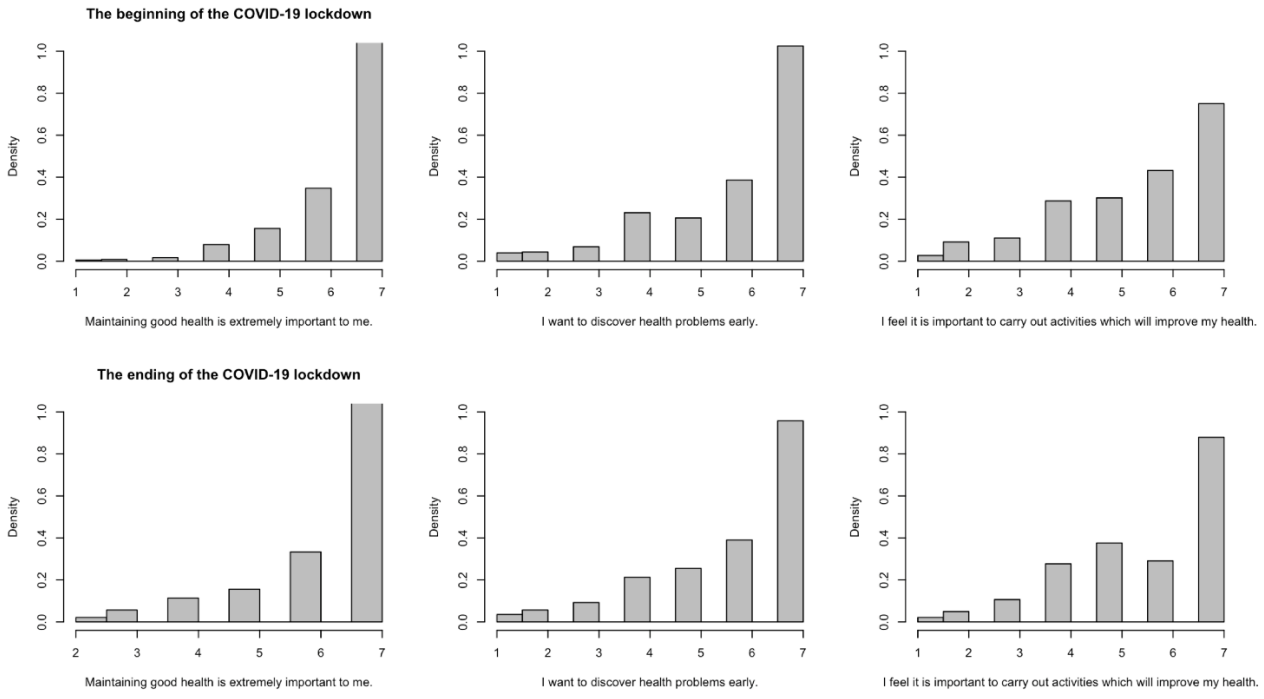


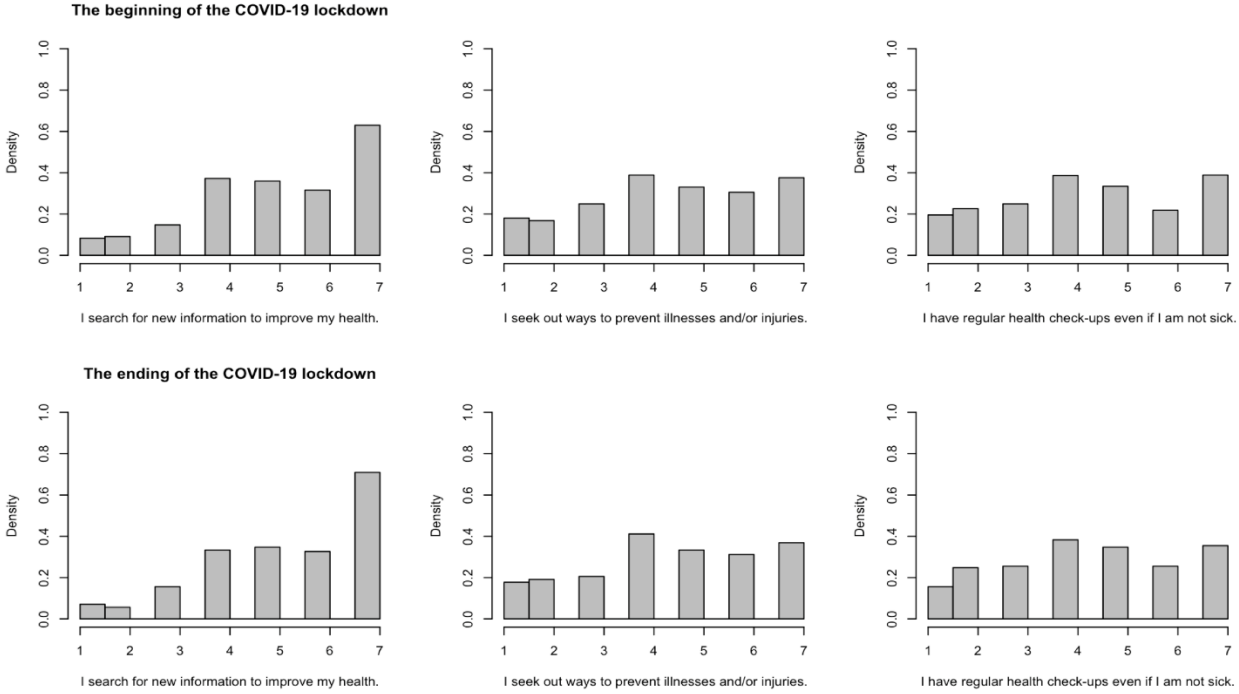

Figure 3 − Intention Statements, the Three Levels of Engagement



To further test the impact of impediments on the actual engagement with general healthcare measures, we compared the responses to three levels of engagement. Wilcoxon Signed-Rank tests were employed.

Figure 4 shows the responses registered for each level, at the beginning and the ending of the COVID-19 lockdown. Results revealed a significant decrease of actual engagement with general healthcare measures from the first to the second level of engagement, both at the beginning (W = 559360, p-value = 3.618e-16, r = 0.41) and the ending of the COVID-19 lockdown (W = 50196, p-value = 1.98e-08, r = 0.47). A significant decrease of actual engagement was also exposed at the beginning of the COVID-19 lockdown, between the second and the third level of engagement (W = 482610, p-value < 0.05, r = 0.1). The same decrease in actual engagement was not revealed to be significant at the ending of the lockdown (W = 41317, p-value = 0.2, r= 0.07). A significant decrease of actual engagement, between the first and the third level, holds at the ending of the lockdown (W = 51664, p-value = 1.93e-10, r = 0.5).

Figure 4 − Action Statements, the Three Levels of Engagement




Concerning the COVID-19 safety measures, dependent 2-group Wilcoxon Signed Rank tests revealed that the five perceived impediments increased from the beginning to the end of the COVID-19 lockdown (social pressure: W = 116010, p-value = 4.564e-05, r=0.105; limited time: W = 99408, p-value = 9.052e-15, r = 0.193; limited resources: W = 122410, p-value < 0.01, r= 0.071; general physical discomfort: W = 95802, p-value < 2.2e-16, r= 0.213; general psychological discomfort: W = 106010, p-value = 1.047e-11, r=0.159).

To further investigate the impact of the socio-economic factors, namely gender, age, income, and education, on the magnitude of the intention-action gap concerning general healthcare measures, an index of distance was calculated as the difference between the agreement to intention and agreement to action. One index was calculated for the first data collection (the beginning of the COVID-19 lockdown) and another for the second data collection (the ending of the COVID-19 lockdown). There is no significant difference between the median magnitude of the two indexes (W = 143010, p-value = 0.16, r = 0.04).

To investigate the impact of gender on the magnitude of the intention-action gap, 2-group Mann-Whitney U tests were conducted. No significant difference between genders was revealed at the beginning of the COVID-19 lockdown (W = 84550, p-value = 0.7, r = 0.012) or at the ending of the COVID-19 lockdown (W = 7517.5, p-value = 0.16, r = 0.084). Nor does age have a significant impact on the magnitude of the intention-action gap, with small correlations between age and distance indexes both for the first data collection (r = -0.14) and the second data collection (r = -0.05).

Kruskal–Wallis tests were conducted to examine the impact of income on the magnitude of the intention-action gap. Considering the first data collection, the test revealed a significant difference between groups concerning the median intention-action distance (Kruskal-Wallis X-squared = 14.222, df = 6, p-value < 0.05, eta squared = 0.009). However, with seven groups of comparison (7 levels of income) the chance of observing a rare event increases and, consequently, the likelihood of incorrectly rejecting a null hypothesis (a Type I error) increases. The Bonferroni correction compensates for that increase. Further, Dunn's pairwise tests were carried out for the seven pairs groups using Bonferroni correction. No significant difference between groups was revealed. For the second data collection, Kruskal–Wallis test displayed no between-group difference (Kruskal-Wallis X-squared = 8.6325, df = 6, p-value = 0.2, eta squared = 0.01).

Two-group Mann-Whitney U tests were conducted to examine the impact of education on the magnitude of the intention-action gap. In the first data collection (the beginning of the COVID-19 lockdown), a significantly higher difference between intention and action was revealed for the group that completed higher education compared to the group with secondary education (W = 117470, p-value < 0.05, r = 0.09). The difference did not hold significance for the second data collection (the ending of the COVID-19 lockdown; W = 8987, p-value > 0.9, r = 0.003).

## 6. Discussion

The first hypothesis was confirmed — there is a broader gap between intention and action regarding general healthcare measures than COVID-19 safety measures. When examining the attitude regarding general healthcare measures, results show that there is a significant difference between the responses registered for the statement comprising the intention and the one describing the corresponding action. The distance between these indicates an intention-action gap regarding general healthcare measures. This effect is present both at the beginning and the ending of the COVID-19 lockdown, meaning that the specific event did not have an impact on the intention-action gap regarding general healthcare measures. When considering the safety measures during the COVID-19 lockdown, no significant intention-action gap was revealed even if there was a significant increase of all five perceived impediments, namely social pressure, limited time, limited resources, general physical and psychological discomfort. The lockdown underlines strong behavioral engagement with intention. We argue that the social reaction to the virus outbreak meets multiple conditions specific to endorsed strategies to reduce the intention-action gap.

As proposed by the second hypothesis, the intention to engage in general healthcare measures decreases as implied impediments increase. Similarly, the actual engagement with health beneficial actions decreases as implied impediments increase. However, the decline is more consistent at the beginning than at the end of the COVID-19 lockdown. When dividing the increase of impediment into three levels of implied effort, we observe that at the beginning of the lockdown, both intention and actual engagement with general healthcare measures decrease from the first to the second level and from the second to the third level. At the ending

of the lockdown, there is no significant decrease between the last two levels of effort. This result can be explained by higher engagement motivated by the generalization of the interest and involvement during the COVID-19 virus outbreak.

The engagement with healthcare is most suggestively underlined by the confirmation of the third hypothesis. Even though the perceived impediments increase between the beginning and the ending of the COVID-19 lockdown, this was not followed by a decrease in the commitment to adhere to COVID-19 safety measures.

Further analysis meant to examine the influence of socio-economic factors on the magnitude of the intention-action gap concerning general healthcare measures shows that gender, age, and income have no significant impact. These results are supported both at the beginning and the ending of the COVID-19 lockdown. Even if education seems to play a marginal role, with a significantly higher difference between intention and action was revealed, at the beginning of the lockdown, for the group that completed higher education compared to the group with secondary education, the difference holds under effect sizes too small to be considered ($r < 0.1$). Moreover, the difference did not hold significance at the end of the lockdown.

### *6.1 Theoretical Implications*

The results provide insights into the intention-action gap effect and the ways to diminish it. It provides a comparative approach between two different health contexts and underlines the differences. Besides underlining the gap between intention and action, it discusses the coexistent gap at the intentional and actional level based on increasing impediments or implied effort. This way, in addition to the confirmation of different findings from extant literature in the context of the COVID-19 pandemic, it puts in the same pictures multiple results from the diverse literature on the intention-action gap.

The investigation of the influence of socio-economic factors on the magnitude of the intention-action gap shades light on contradicting literature. Our results show that gender, age, income, and education have no significant impact on the magnitude of the intention-action gap.

### *6.2 Practical Implications*

Revealing efficiency in diminishing the intention-action gap concerning healthcare, the COVID-19 lockdown proposes some recommendations for strong behavioral engagement with intention. Even if the global virus outbreak represents a rare and specific event, we can identify general constituent elements. Moreover, the identified conditions to reduce the intention-action gap are specific to strategies endorsed by extant literature, thus making the generalization valid. In other words, the COVID-19 lockdown is a rare event but not a phenomenon isolated from existing knowledge about human behavior and society.

This period's efficiency to avert the three types of mental processing barriers that hinder actions to match intentions (temporal barriers, awareness barriers, and information barriers) can be classified into three major elements: clarity, consistency, and authority.

Clarity was assured both at the intentional and actional level. Both the size of the health risk of the virus outbreak and the consequentiality of nonconforming behavior on the common good were conspicuous. Adequate risk perception and consequentiality understanding are proven crucial for behavioral engagement with actions that are frequently overlooked (Schwarzer & Luszczynska, 2008; Hidalgo-Baz et al., 2017). Citizens were regularly informed through all media communication channels about the existing threat to public health and short programs were describing the adequate behavior -- wearing masks, using alcoholic disinfectants, frequent hand washing. Moreover, the appropriate behavior was described according to the different social contexts -- public spaces, public transportation, parks,

supermarkets. Besides bringing clarity, these communications acted as reminders and intention actualization, also shown effective in reducing the intention-action gap (Sawyer et al., 2002; Lee et al., 2003, Roberts et al., 2007; Hand et al., 2019). Creating a code of good practice from the beginning of the pandemic reduced the formation of bad habits and ensured time proximity between intention and action (Sheeran & Webb, 2016), while prompt governmental response combined with transparent and actionable guidelines help implement early means of pandemic control and diminish the possibility of a widespread healthcare crisis (Hou et al., 2020)

In addition to the consistency between communications, stability was also ensured by invariant beliefs and purposefulness. Communities showed solidarization in the face of the threat, a major factor in overcoming impediments (Dawson & Verweij, 2012; Prainsack & Buyx, 2012). Being realistic about potential barriers is crucial in fulfilling intention (List, 2001; Ajzen et al., 2004; Kersten et al., 2015; Saddawi-Konefka et al., 2016). People were informed about potential impediments. The informative programs confronted citizens with specific situations and potential adversities. Citizens had the means to understand the barriers, limitations, and ways to overcome them. This approach resembles established methods in addressing awareness, such as the "cheap talk" approach, the "corrective entreaty" method, and the "implementation intentions" strategy. Therefore, the accurate understanding of a situation -- or the realism of the situation -- is a fruitful consequence of clarity and consistency.

Another central element of this period is authority, ensured both as the formal authority and scientific authority. As the COVID-19 period of emergency was a state-declared situation, it held the validity of legal importance. On top of that, complex information concerning the pandemic was highly promoted and called upon reliable data and scientific studies.

Therefore, based on values such as clarity, consistency, and authority, the strategies employed during the COVID-19 lockdown successfully mimicked established strategies to reduce the intention-action gap, among which we mention the "cheap talk" approach, the "corrective entreaty" method, the "implementation intentions" strategy, intention actualization through reminders, scientifically reliable communication, ensuring belief invariance and purposefulness. These values can be assimilated as managerial principles and the strategies proposed as recommendations for crisis management and the management of collective behavior. This way, the particular situation of the pandemic crisis can be illustrative for efficient ways to manage challenging situations from the perspective of the intention-action gap.

## 7. Conclusions

A rich body of research literature explored the action failure of individuals following their intentions and an even richer philosophical tradition. We often fail to act according to our intentions, be it for economic, environmental, or medical purposes. The current study confirms the existence of an intention-action gap regarding general healthcare measures. It also underlines the mitigating role of implied impediments on the intention and the actual engagement with healthcare measures, given the context of the COVID-19 pandemic.

The intention to engage in general healthcare measures decreases as implied impediments increase. Similarly, the actual engagement with health beneficial actions decreases as implied impediments increase. Nevertheless, a consistent decline is observable during the beginning, rather than the end of the COVID-19 lockdown. This result can be explained by the generalization of the interest and involvement with healthcare motivated by the COVID-19 virus outbreak. Indeed, during this period people succeed to act as intended more effectively than they usually do. Our results show that the COVID-19 virus outbreak motivated more consistency in behaviour with no significant distance between intention and action.

We argue that the COVID-19 lockdown presents specific features considered effective in diminishing the distance between intention and action. The clarity, consistency, and authority proved during the lockdown public communication resemble established methods to reduce the intention-action gap, such as the "cheap talk" approach, the "corrective entreaty" method, and the "implementation intentions" strategy. On top of that, intention actualization through reminders, scientifically reliable communication, and inspiring purposefulness contributed to strong behavioral engagement.

Even if the study discusses a rare and specific event, the social reaction to it presents general elements that can be assimilated as recommendations for crisis management and the management of collective behavior. The applicability of these recommendations is justified all the more as gender, age, and income are revealed to have no significant impact on the magnitude of the intention-action gap concerning general healthcare measures.

The present findings may contribute to a larger body of research concerning social-psychological factors which facilitate acting in desirable manners and foster both desirable societal participation and an efficient organizational climate if we extend it to managerial contexts. Furthermore, recent research also showed that subjects are more prone to act in positive behaviors like knowledge sharing inside an organization (Bock et al., 2005) when the source of the motivation is intrinsic. A cross-cultural research process would also be indicated to better comprehend the various fallacies which inadvertently may arise when individuals have to decide upon preventive measures.

### *7.1. Limitations*

Framing the crisis between its beginning and ending period would have been more conclusive through a comparative perspective with a post-emergency measurement. With all the other conclusions remaining unchanged, a post-emergency measurement would have contributed to the knowledge of the impact of state authority. Future studies could focus on this aspect.

An objection may be based on the specificity of the event considered that leads to faulty generalization. As argued before, even if a pandemic is a rare and specific type of crisis, social crises share common traits. Therefore, specific crisis analysis can be insightful for the management of other crises.

Some inconsistencies between the results observed for the beginning and the ending of the COVID-19 lockdown can be explained through the impact of the emergency period itself. However, results inconsistency can stand on small effect sizes as revealed in our analysis. Further investigation on the role of impediments is needed.

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