Preregistration

Framing effects on intentions and effectiveness related to Covid-19 messages contrasting economic and health concerns

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Study Information

Title	Framing effects on intentions and effectiveness related to Covid-19 messages contrasting economic and health concerns
Description	The Covid19 health crisis poses a threat of global scale. Latin-American countries are in a particularly vulnerable position since they have weaker health-care systems and are working almost to capacity (Gomes, 2019). In his context, behavioral health interventions are of special value since they can buy precious time to improve the preparedness of governments. Behavioral sciences can help communicating the risks associated and thus promote citizens´ cooperation by leveraging findings on framing (e.g., Tversky & Kahneman, 1981, Van Bavel, et al, 2020). It is then crucial to determine the best ways to communicate information on the pandemic in the

context of Latin-America. The media document tensions between competing sets of claims on the consequences of the pandemic. On the one hand, some argue that considerations on life and health should be the main drivers of prevention and control measures (Dayrit, & Mendoza, 2020; Toda,2020). On the other hand, others consider that economic arguments and livelihood issues should be preeminent in guiding our responses, particularly in a region that depends heavily on informal economy (Fernández-Kelly & Shefner, 2006). Here we set to explore how message framing allows a better understanding on attitudes towards health and economy guiding individual responses to the pandemic, and consequently what the best to communicate these concerns is.

We propose that framing messages in terms of losses will be considered more effective and associated with higher probability of public health measures compliance when presented with economics consequences. This, of course, might be a function of the particularbehaviors relevant for the crisis. For example, while washing your hands is a low-cost, low-risk behavior, staying at home is for many a costly and risky behavior (e.g. jeopardizing employment). Thus, the effectiveness of the messsage and the way is framed depends both on the way the problem faced is predominantly construed (an economic versus public health problem) and the frame (low risk behaviors might be more effectively framed as gains while high cost behaviors could be better framed as losses).

Recent literature suggests that people are more receptive to positively gain-framed messages than loss-framed messages when it comes to preventive behaviors that aligned with prior preferences on health and decision styles (Rothman, Joyal-Desmarais, & Lenne, 2020, see also Bartels, Kelly, & Rothman, 2010). However, we believe these findings are constraint to decisions that are clearly presented in the context of health care, while some of the behaviors expected from citizens in the context of the current pandemic can be considered both economic and health care decisions. We believe that message effectiveness will depend both on the content of the message — as it reveals individual preferences on the construal of the situation — and its framing —since it makes clear the undesirable consequences in the context of our region.

We will ask participants to rate matched messages in terms of their effectiveness, own-behavior probability others-behavior probability and risk perception. We will

also collect information on demographic data since framing effects can potentially as a function of these factors. Ethical approval was granted by the Universidad de los Andes Ethics Committee on 16th April 2020.

Hypotheses

Loss frames will be prefered in terms of effectiveness, attention, awareness and risk attitudes.

Frame and message content will interact on in terms of effectiveness, attention, awareness and risk attitudes. Particularly, we expect loss-framed economic messages to be rated more effective for others and the self.

Design Plan

Study type

Experiment. A researcher randomly assigns treatments to study subjects, this includes field or lab experiments. This is also known as an intervention experiment and includes randomized controlled trials.

Blinding

Participants will not know the treatment group to which they have been assigned.

Study design

This is a 2X2 mixed design with comparison type (between-frame or between-content) as between-subject factor, and information type (gain/loss vs economic/health) as a within subject variable. For each condition, content and frame will be balanced, respectively. This is a stimuli-and-participant within condition randomn effects design, following Westfall et al (2014), and analytic decisions are made accorndingly.

Message position will be randomized for all trials, so participants will see half of the posible combinations defined by position. We chose only some key combinations of the independent variables to avoid practice and fatigue effects and because we believe the messages presented represent an ecological valid contrast of the considerations people are making regarding the Covid-19 crisis. Increasing the number of trials risk losing ecological validity.

Randomization Participants will be randomly assigned to one of two types of comparison, between frames or between contents. Each participants will be then presented with four comparisons in random order, loss-gain contrasts for the first condition and health-economic issues for the second. All items for each trial will also be presented in a random order.

Sampling Plan

Existing data **Registration prior to creation of data**. As of the date of submission of this research plan for preregistration, the data have not yet been collected, created, or realized.

Data collection procedures Data will be collected by distributing the survey through social media and mailing lists of allied researchers in several Colombian cities.

Sample size Our target sample size is 300 participants, depending on time constraints.

Sample size rationale We ran a power analysis with g power for a mixed anova (See output below), with a between-subjects factor and seven measures. This suggests a sample size of 240 participants to detect an effect size of f = 15, with a .95 power. Given the unbalanced nature of our design, we also ran an alternative power analysis with crossed random effects (Westfall, et al, 2014). We set our within-subjects factor as a random effect within the comparison type factor. The suggested sample size of 300 participants to detect an interaction with a size effect of d= .35 (f=.175), with a power of 0.70, is 300 participants. We aim to recruit this number of participants, within the time constraints outlined below.

Stopping rule We will stop collecting data when we either complete the desired sample size or when the compulsory confinement in Colombia comes to an end (estimated April 27 2020).

Variables

Manipulated variables

We will manipulate two variables: comparison type (between-frame or between-content) as between-subject factor, and information type (gain/loss vs economic/health) as a within subject variable

Measured variables

The study will be conducted in Colombian Spanish. We will record 9 responses, grouped in three sets, self-behavior, other-behaviors and attitudes. Below the original items (with translations in brackets)

Self-behavior

¿Cuál de estos dos mensajes hace que sea más probable que usted... (Which messages makes it more likely that you ...) Se lave las manos varias veces al día (Wash your hands several times a day) Acate la cuarentena y se mantenga aislado en su casa (Comply with self-isolation measures and stay home)

Other-behavior

¿Cuál de estos dos mensajes hace que sea más probable que otros... (Which messages makes it more likely that other people...) Se lave las manos varias veces al día (Wash your hands several times a day) Acate la cuarentena y se mantenga aislado en su casa (Comply with self-isolation measures and stay home)

Effectiveness Cual de estos dos mensajes... (Which one of these two messages...)

Captura más mi atención (Captures my attention) Me hace pensar más sobre la importancia de hacer conductas de autoprotección (Makes me think more on the importance of self-care behaviors) Expresa mejor las consecuencias de hacer las conductas de autocuidado (Conveys better the consequences of self-care behaviors) Es más efectivo para motivar conductas de autocuidado (is more effective motivating self-care behaviors)

Risk Perception Me hace pensar que tengo mayor riesgo de contagio (makes me think I am at higher risk of contagion)

Responses will be collected by asking participants to move sliders to their preferred position, by providing three anchors (extremes and middle point). Participants will not see any numeric value when providing their response. At the end of the

survey participants will be asked to respond some basic demographic questions(age, gender, SES - with the mMacarthur scale of subjective social status-, city, education, political preference)

Indices We will perform reliability anlysis on the self and other behavior responses. If MacDonald Omega or Cronbach's alpha are greater than 0., we will create an index for each of these variables by averaging across the relevant items.

Analysis Plan

Statistical models We will perform three sets of analyses. First, we will fit a random effects models with random intercepts for participants and information type (See Westfall et al, 2014). Constrasts will be computed with the holm correction. For this step we will use the lmer and emmeans R libraries

Second, if we find significant results in the first step, we will fit a one factor anova, with comparison type as independent variable and post hoc comparisons (Tukey correction)

Third, all models from step one will be fitted including socio demographic variables.

Transformations No transformations will be perfomed except if required for data vizualisation.

Inference criteria We will use the standard $p<.05$ criteria for determining if the ANOVA, post hoc tests, linear model coefficients and associated contrasts suggest that the results are significantly different from those expected if the null hypothesis were correct. The post-hoc Tukey-Kramer test adjusts for multiple comparisons and Holm correction will be used for contrasts.

Data exclusion Data from participants who do no complete at least 90% of the survey will be excluded.

Missing data	If a participant does not complete the survey, their data will be excluded from confirmatory analyses but included in the exploratory ones.
Exploratory analyses (optional)	We will run comparisons based on demographic data and add demographic variables to the mixed models described above to identify statistical effects in the presence of the experimental variables.

Other

Other (Optional)	Enter your response here.

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