Combining individual and contextual data to study the dynamics of public opinion during COVID-19 pandemic

Riccardo Ladini, Francesco Molteni
PUBLIC OPINION DURING COVID-19

- Beyond health and economic consequences
- Impact on attitudes, values and opinions
- Pandemic as context
- Large diffusion of (CAWI) surveys in the pandemic period
- **Cross-sectional survey without a time-dynamic component:**
  
  *RQ: In the pandemic period, does factor X influence attitudes Y?*
  
  Issues: do results pertain only to the pandemic period? Or can they be extended to other period?

- **Panel survey (before and after the pandemic, e.g. Reeskens et al. 2020) and cross-sectional longitudinal surveys:**
  
  *RQ: How does the pandemic change individual attitudes?*

• Pandemic as a black box
• What about the dynamics of the pandemic (during the pandemic)?
Panel surveys with several waves during the pandemic (e.g. Austrian Corona Panel Project, Kittel et al. 2020)

Repeated cross-sectional surveys (several rounds across the pandemic)

*RQ: How does the dynamics of the pandemic influence individual attitudes?*

- Rolling cross-section surveys
  - Granularity of the daily observations (day of interview as a random variable)
  - Possibility of combining individual level-data with time-varying contextual characteristics
Investigating the social, economic and political consequences of the COVID-19 pandemic: A rolling cross-section approach

Cristiano Vezzoni  
University of Milan Statale

Riccardo Ladini  
University of Milan Statale

Francesco Molteni  
University of Milan Statale

Giulia M. Dotti Sani  
University of Milan Statale

Ferruccio Biolcati  
University of Milan Statale

Antonio M. Chiesi  
University of Milan Statale

Simona Guglielmi  
University of Milan Statale

Marco Maraffi  
University of Milan Statale

Andrea Pedrazzani  
University of Milan Statale

Paolo Segatti  
University of Milan Statale

In this article, we present an application of the rolling cross-section (RCS) design to monitor changes in public opinion during the COVID-19 pandemic in Italy (ResPOnsE Covid-19 project, University of Milan Statale). The RCS is a dynamic survey tool used predominantly in the analyses of public opinion during electoral campaigns. Because of its dynamic nature, we argue that it is an ideal instrument to monitor public opinion during a pandemic. Specifically, we present an RCS online survey implemented in Italy from April to July 2020 and we present some illustrative analyses of changes in behaviors, attitudes, and opinions during the Covid-19 crisis to highlight the potential of the design. Ultimately, we assert that RCS surveys could be very powerful instruments to inform policy makers of the dynamics of public opinion during a crisis, especially when inserted within existent high-quality survey infrastructures.

Keywords: COVID-19, survey methods, dynamic analysis, rolling cross-section, policy-making
THE ROLE OF THE CONTEXT IN SHAPING ATTITUDES, BEHAVIORS AND OPINIONS

Context as:
- Space
- **Time**
- Time and Space

During the pandemic, changing context:
- Time as days, at most weeks

Which contextual time-varying characteristics?
CONTEXTUAL CHARACTERISTICS

- **INTENSITY OF THE PANDEMIC**: How to measure it?
  - Number of COVID-19 deaths, contagions, hospitalizations
    
    **ISSUE**: Representation error (Gaia 2021)
    
    **CONTEXT**: Data communicated by the media as a liturgy during the first phase. And later?
    
    «Perceived» intensity of the pandemic

- **Cumulative deaths** (Schraff 2020): monotonic, always increasing
  
  **ISSUE**: not suited for capturing variation

- **Number of total daily deaths** (Bucci 2020)
  
  Objective intensity of the pandemic
CONTEXTUAL CHARACTERISTICS

• POLICIES/INTRODUCTION OF RESTRICTIVE MEASURES

Example: Italy, first phase of the pandemic, April-July 2020:
- 09 March - 03 May: strict lockdown
- 04 May - 03 June: partial lockdown
- 04 June: freedom of movement
European Journal of Political Research

Research Note  |  Free Access

Political trust during the Covid-19 pandemic: Rally around the flag or lockdown effects?

DOMINIK SCHRAFF

First published: 19 November 2020  |  https://doi.org/10.1111/1475-6765.12425  |  Citations: 12
Working example: The dynamics of institutional trust

At least two possible contextual effects:
- Anxiety effect
- Lockdown (response to policies) effect

Which contextual characteristics?
- Anxiety effect: Intensity of the pandemic
- Lockdown effect: Restrictive policies/measures
DATA: ResPOnsE COVID-19

Rolling Cross-Section Survey (RCS): daily interviews
CAWI method, quotes for area and age. Non probabilistic survey: opt-in panel

Wave 1: 2020
N=15,757, Daily obs ≈ 150

Wave 2: 2021
N=9,337, Daily obs ≈ 115
TRUST IN PARLIAMENT ACROSS THE PANDEMIC

The graph illustrates the trend of trust in parliament from April 2020 to June 2021, marked by various events such as partial lockdown, freedom of movement, and reopening. The x-axis represents the time period from April '20 to June '21, while the y-axis shows the trust level ranging from 0 to 6. The blue bars indicate the actual trust levels, with the solid line representing the trend over time. The graph also shows the daily COVID-19 deaths on the right y-axis.
TESTING HYPOTHESES: MEASURES AND METHODS

- Dependent variable: Trust in Parliament (0: not at all - 10: a lot)

- Independent variables (contextual-level):
  - Number of COVID-19 daily deaths
  - Time span by restrictive policies

- Multilevel linear regression models: individuals nested into days of interview (two different models: apr-jul 2020; mar-jun 2021)

- Individual-level controls: sex, age, education, geographical area, left-right position
RESULTS – First wave of the pandemic

Anxiety effect: Yes  Policies effect: No
RESULTS – Third wave of the pandemic

Anxiety effect: No

Policies effect: No
CONCLUSIONS

• Effect of contextual time-varying characteristics? It depends on the context itself (within phase vs between phases)

• Distinguishing between intensity of the pandemic and introduction of policies: Attention to multicollinearity!

• Intensity of the pandemic:
  o Measures interchangeable (high correlation among them and with time)
  o Take caution of absolute values of COVID-19 deaths when comparing different phases of the pandemic
  o Measurement issues (e.g. number of COVID-19 deaths) less relevant when used as IV and referred to a single phase
  o Official fatalities: Objective vs perceived intensity of the pandemic. Different impact?
Thank you!

Riccardo Ladini - riccardo.ladini@unimi.it
Francesco Molteni - francesco.molteni@unimi.it

NEXT (POTENTIAL STEPS)
• Space: Intensity of the pandemic at the regional level
• Time and Space: Variation of the intensity of the pandemic at the regional level
• Other contextual characteristics: number of vaccines...