



A selected literature review of the effect of Covid-19 on preferences

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Abstract

This article surveys the rapidly growing literature that examined the influence of Covid-19 on preferences. Based on 33 studies, the article examines how the pandemic impacted altruism, cooperation, trust, inequity aversion, risk-taking, and patience/time discounting. Even though the survey suggests the effect of the pandemic on preferences is heterogeneous, some noticeable patterns can be observed in the literature. First, in the case of incentivized preference elicitation, there is weak evidence that the pandemic positively influenced altruism and had no significant impact on time preferences or patience. Second, many studies that used balanced panel data and incentivized preference elicitation mechanisms do not find a significant effect of the pandemic on preferences. Last, studies that used unincentivized methods to elicit preferences show relatively higher variability in results when compared to the studies that used incentivized methods for preference elicitation. The organized synthesis and several noticeable patterns can help future research focusing on preference stability during Covid-19 and other unfavorable events.

Keywords Survey · Covid-19 · Preferences

JEL Classification D9 · D90 · D91

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1 Introduction

The world is grappled by the health and socio-economic impacts of the Covid-19 pandemic and many countries are still struggling to cope up with the multi-faced challenges posed by the pandemic. As of December, 22, the total number of global cases stand at around 651 million, and unfortunately, about 6.7 million people have died.¹ Even though social distancing and rapid vaccinations have helped curtail the virus to some extent, the global challenges and uncertainties caused by the pandemic continue to influence socio-economic decisions both at micro and macro levels.

The literature that examining the multifaced effects of Covid-19 on economic decisions has increased rapidly, and a recent survey by Brodeur et al. (2021) nicely summarizes several strands of this literature. Brodeur et al. (2021), however, do not synthesize studies focusing on the effect of pandemic on preferences. The synthesis of studies examining the pandemic's influence on preferences is vital because preferences play an important role in individual and collective - decision making and occupy an important position in experimental economics.² This study systematically surveys the rapidly growing literature on the effect of Covid-19 on social and economic preferences (altruism, cooperation, trust, inequity aversion, risk and patience/time discounting) and synthesizes the results based on 33 studies. The synthesis shows heterogeneity in the effect of pandemic on preferences, but there are some noticeable patterns observed in the data. First, there is weak evidence (four out of six studies) that the pandemic positively influenced altruism measured via incentivized dictator games. Second, no significant impact of the pandemic on time preferences or patience is observed in studies that used incentives to elicit these preferences. Third, many studies that used incentivized preference elicitation mechanisms multiple times with same subjects (balanced panel data) do not find a significant effect of pandemic on preferences (nine out of ten studies). Last, studies that used unincentivized methods to elicit preferences show relatively higher variability in results when compared to studies that used incentivized methods.

The rest of the study is organized as follows: Section 2 describes the study selection process and provides an overview of the studies. Section 3 summarizes the findings for the effect of the pandemic on preferences. Section 4 concludes the paper.

2 Data extraction and overview of studies

For data extraction, the key phrase "Covid-19 and Social Preferences" was used to locate relevant studies at RePEc (148 hits) and SSRN (68 hits) on 27th February 2022. To locate more studies, the key phrase "Covid-19 and Preferences" was used at RePEc (413 hits) and SSRN (229 hits) on 28th February 2022. Judging from the

¹ Source: WHO Coronavirus (Covid-19) Dashboard. <https://covid19.who.int>.

² Recent studies show that preferences are associated to the Covid-19 preventive behaviors as well (for example: Campos-Mercade et al., 2021; Umer, 2022).

Table 1 Summary of studies dependent on preference type

Preference type	Total studies	Published	Unpublished
Altruism	13	9	4
Cooperation	4	3	1
Trust	12	7	5
Inequity aversion	3	2	1
Risk	19	10	9
Patience/time preference	11	7	4

title and abstract of the studies the list was narrowed down to 50 papers. As a second step, the studies were closely examined and 16 relevant studies from RePEc and 6 from SSRN were selected. As a last step of the search, the references of the selected studies were examined to further identify six relevant papers. Five studies were included based on a suggestion by a referee during the review process, making the total number of studies 33. Almost 58% of studies (19) are published works. A breakdown of studies is reported in Table 1.³

3 The effect of pandemic on preferences

This section summarizes the studies exploring the effect of the pandemic on preferences. For each selected study information about authors, country of experiment or survey, economic games or other measures used to elicit preferences, methodology, main statistical tools and the main and most relevant findings are reported in the supplementary materials. Whenever a study reports multiple experiments performed with the same subjects (balanced panel data), it is mentioned exclusively. Furthermore, if a study conducts temporal analysis based on multiple waves of data collected mostly after the start of the pandemic, in such a case the number of waves is also reported. As incentives play an integral role in experimental economics, studies that used incentives are segregated from those relying on non-incentivized preference elicitation mechanisms. From a methodological perspective, this divide is necessary because incentivized and hypothetical decisions can lead to different outcomes (Bühren & Kundt, 2015). The information about magnitude of incentives is also provided only for the incentivized studies to facilitate readers to judge whether payoff dominance issues arise. For hypothetical decisions, this information is not reported because real incentives are irrelevant. Lastly, pre-pandemic in the subsequent sections refers to the time before the start of the Covid-19 while post-pandemic refers to the duration during the ongoing Covid-19.

³ If a preference is examined by less than three studies, it is not reported in the review because of very small sample size. Inter temporal risk preferences, ambiguity aversion and reciprocity are examined by less than three studies in the selected sample, and therefore excluded from the analysis.

3.1 Altruism

Covid-19 has caused severe economic disruptions and raised uncertainty in the labor market. Job loss or an expected decrease in future earnings can make people conservative in their current spending and decrease altruism. On the other hand, people might show higher altruism because they understand the need and efficacy of their donations have increased manifolds due to the human suffering linked to the pandemic (Umer 2023). Therefore, both outcomes are possible.

The impact of Covid-19 on altruism⁴ is examined through different channels in the literature. A number of studies examined how Covid-19 influences altruism by collecting data at multiple times after the start of the Covid-19, the results, however, do not converge. For example, Lotti (2020) find that altruism increased in the latter in comparison to the former experiments, Alsharawy et al. (2021), Heap et al. (2021) from the USA and Kiss and Keller (2022) from Hungary find no significant change in altruism across multiple surveys while Brañas-Garza et al. (2022) report altruism decreased with an increase in the Covid-19 severity in Spain.

A second set of studies compare altruism based on a pre-and-after the start of the pandemic data. The results again vary and some report no change (Lohmann et al., 2023; Umer 2023) while others find increased altruism after the start of the pandemic compared to the pre-pandemic setting (Aksoy et al., 2021; Shachat et al., 2021). A third set of studies examine the effects of the Covid-19 exposure and Covid-19 priming on altruism. Alsharawy et al. (2021), Grimalda et al. (2021) and Adena and Harke (2022) report a positive effect of the Covid-19 fear, exposure and local news on altruism, respectively. Adena and Harke (2022) and Cappelen et al. (2021) find that priming people with Covid-19 enhances altruism compared to the control group. Contrarily, Bogliacino et al. (2021) find no significant effect of the negative Covid-19 shocks (labor, health, stressful events and mental health shock) on altruism.

If we separately analyze incentivized (Supplementary Appendix A: Panel A) and unincentivized (Supplementary Appendix A: Panel B) studies we see that unincentivized studies show a higher variability in outcomes. On the other hand, for incentivized studies, there is a weak evidence that the pandemic had a positive impact on altruism. Further details about studies are reported in Supplementary Appendix A.

3.2 Cooperation

The prolonged social distancing and self-isolation due to the Covid-19 can make people less concerned about others and reduce cooperation. Furthermore, economic losses and labor market precarity experienced during Covid-19 can make people more selfish and reduce cooperation. On the other hand, care and compassion for others might increase due to the shared nature of suffering caused by the pandemic,

⁴ A recent meta-analysis by Umer et al. (2022) shows that altruism in the dictator game is dependent on the type of recipient. Therefore, the nature of recipient might play a significant role in shaping up altruism amid pandemic.

and subsequently enhance selfless behavior and promote cooperation. Therefore, the pandemic can have either a positive or negative impact on cooperation.

Four studies examine the impact of Covid-19 on cooperation and the results are diverging (details reported in Supplementary Appendix B). For example, Buso et al. (2020) find a negative effect of lockdown on cooperation in Italy, Shachat et al. (2021) find that in comparison to pre-lockdown, cooperation increased post-lockdown in the Stag Hunt Game while decreased in the Prisoner's Dilemma in China. Aksoy et al. (2021) report a higher cooperation after the start of the pandemic compared to the pre-pandemic situation in the USA while Lohmann et al. (2023) do not find any significant impact of city level Covid-19 severity on cooperation.

3.3 Trust

The heightened inequalities due to labor market disruptions caused by Covid-19 can translate into social unrest and erode trust. Moreover, reduction in interpersonal interactions due to mandatory social distancing and self-isolation can also decrease trust. On the other hand, the solidarity depicted by people from all across the globe to fight collectively against Covid-19 and massive efforts to produce vaccines and disseminate them quickly can positively impact interpersonal trust, trust in organizations, and science. Therefore, we might witness an increase or decrease in trust amid the pandemic depending on the relative strength of the above mentioned factors.

The outcomes for the effect of pandemic on trust show mixed results. Most studies report that direct or indirect exposure to the Covid-19 has no effect on the general or interpersonal trust (Brück et al., 2020; Bellani et al., 2022; Bogliacino et al., 2021) while other report it either increased (Gambetta & Morisi 2022) or decreased (Daniele et al., 2020) trust. A second set of studies compare trust measured pre-and after the start of pandemic and most of them report no change (Heap et al., 2021; Lohmann et al., 2023; Umer, 2023), while some report decreased (Li et al., 2020) or increased trust (Esaiaasson et al., 2021; Sibley et al., 2020). Even sub-group analysis based on whether a study used incentives or not also leads to mixed outcomes and it is difficult to pin down a noticeable pattern. Similarly, there are variations in the impact of the pandemic on the general and institutional trust as well. Further details are in Supplementary Appendix C.

3.4 Inequity aversion

Economic inequalities have mainly increased worldwide due to disruptions caused by the pandemic. Resultantly, people can become less averse to inequity because of their recent exposure to the disparities caused by the exogeneous Covid-19 shock. On the other hand, people living in countries with relatively less inequity might persist in their inequity aversion even during the ongoing pandemic due to their past experiences.

Three studies in this survey examine the effect of pandemic on inequity aversion. Cappelen et al. (2021) find that Covid-19 primed subjects became more accepting of inequalities due to luck in comparison to the non-primed group. Bellani et al. (2022)

find that infected people in Germany become more inequity averse compared to the uninfected ones while Brañas-Garza et al. (2022) do not find any significant change in equity aversion due to the severity of the pandemic in Spain. Further details are in Supplementary Appendix D.

3.5 Risk preferences

The existing evidence suggests that the negative shocks can increase fear of such events and their perceived likelihood of reoccurrence in future and make people more risk averse (Cassar et al., 2017). A predominant stream of existing studies that examined the impact of negative shocks also report increased risk aversion (Haushofer & Fehr, 2014). Therefore, Covid-19 is most likely to increase risk aversion. Contrarily, the existing evidence also suggests that negative shocks can reduce risk aversion (Eckel et al., 2009; Hanaoka et al., 2018) possibly due to enhanced monetary needs. Therefore, Covid-19 can induce more risk-taking among the affected people.

The influence of pandemic on risk preferences has gained significant attention of researchers. Five studies from the USA report different effects of pandemic on risk-taking. Aksoy et al. (2021) find that risk seeking increased in the risk project (safe versus risky investment) and willingness to take risk item while it decreased in the risk urns (multiple price list lottery versus sure amount) after the start of the pandemic as compared to the pre-pandemic situation. Zhang and Palma (2021) find that post emergency risk aversion in Balloon Analogue Risk Task (BART) increased while in gamble choices remained unchanged as compared to the pre-emergency setting. Alsharawy et al. (2021) find that the fear of Covid-19 reduces risk tolerance while local death rate has insignificant influence on risk-taking. Contrarily, Heap et al. (2021) find insignificant effect of the pandemic severity on risk-taking. Last, Harrison et al. (2022) report that risk premiums measured through binary lottery choices and expected utility theory (EUT) are relatively stable in the pre-and post-pandemic samples as well as across different data waves collected after the pandemic. However, when rank-dependent utility (RDU) models are applied, risk premiums show fluctuations (first decrease then increase) across different data waves collected post pandemic. Furthermore, pre-pandemic sample is largely risk neutral while post pandemic sample is risk averse as per RDU.

Four studies from China compare risk-taking pre-and after the start of the pandemic and report divergent results. In comparison to the pre-pandemic situation, Bu et al. (2020) and Li et al. (2020) find that risk-taking decreased while Shachat et al. (2021) report it increased after the start of the pandemic. On the other hand, Lohmann et al. (2023) use panel experimental data and find no significant impact of city level severity in the Covid-19 cases on risk elicited either through incentivized lottery choices or through hypothetical investment game.

Studies from other parts of the world also indicate that the effects of the pandemic on risk-taking are divergent. For example, based on panel data collected pre-and after the start of the pandemic, Angrisani et al. (2020) and Drichoutis and Nayga (2022) in the UK and Greece, respectively, report risk-preferences are stable,

Graeber et al. (2020) based on German data, Adema et al. (2022) based on data from Czechia, India, Mexico and Spain while Meunier and Ohadi (2021) based on data from the UK, US, Australia and mainland Europe report a decrease in risk-taking.

Two studies examine the impact of negative financial and health shocks due to the Covid-19 on risk-taking and again the outcomes vary. Frondel et al (2021) find that Covid-19 related financial losses decrease risk-taking in Germany while Bogliacino et al. (2021) find that negative Covid-19 shocks (labor, health, stressful events and mental health shock) increase risk-taking in Italy, Spain and the UK. Overall, there is significant variation in outcomes even when one focusses only on the subset of studies that used incentivized risk elicitation (Supplementary Appendix E: Panel A). Further studies and their details are reported in Supplementary Appendix E.

3.6 Patience/time discounting

The economic uncertainties created by the Covid-19 shock can enhance apprehensions about economic outcomes in the future and, resultantly, reduce current consumption in exchange for future benefits and increase patience. The pre-pandemic literature also shows increased patience amid unfavorable shocks (Callen, 2015). However, Covid-19 can increase fear about such shocks in the future and might induce higher current consumption. Some pre-pandemic studies also report reduced patience due to adverse shocks (Cassar et al., 2017). Therefore, both positive and negative impact of Covid-19 on patience is possible.

The patience or time discounting preferences are mostly measured through willingness to be patient or by using the typical choice between less money sooner or more money later. The results are relatively less fuzzy in comparison to other preferences with five out of eleven studies (Bogliacino et al., 2021; Drichoutis & Nayga, 2022; Frondel et al., 2021; Heap et al., 2021; Lohmann et al., 2023) reporting no change in patience or time discounting. However, the subgroup analysis based on studies that used incentivized decisions shows a noticeable weak pattern that patience is stable (four out of six studies) amid pandemic (Supplementary Appendix F: Panel A). Further details are reported in Supplementary Appendix F.

4 Conclusions and discussions

This study examined the research released so far related to the effects of Covid-19 on social and economic preferences that play a key role in economic decision-making. The annotated list of 33 studies and their content briefly organized into six preferences would hopefully facilitate future researchers that intend to examine the impact of Covid-19 on preferences. This literature review also provides information to readers interested in gathering knowledge about the impact of the pandemic on human behavior.

While there is significant variation in results, some interesting and noticeable patterns stand out. In the case of incentivized preference elicitation, there is weak

evidence that the pandemic had a positive impact on altruism and no significant impact on patience. Furthermore, an overwhelming large number of studies that used balanced panel data and incentivized preference elicitation mechanisms (nine out of ten studies) do not find a significant effect of the pandemic on preferences. Last, studies that used unincentivized methods to elicit preferences show relatively higher variability in results when compared to the studies that used incentivized methods for preference elicitation. The last two patterns highlight the critical role of the methodological aspects (incentivized experiments and balanced panel data) in preference stability investigations.

To conclude, some cautions related to the survey are important to mention here. First, only about 58% of the studies ($n = 19$) in this survey passed the scientific review process and are published. Second, the instruments used to elicit preferences and data analysis are not identical across studies and, therefore, necessitate caution both in the interpretation of the results and in cross-study comparisons. Last, due to time and space constraints, only RePEc and SSRN platforms are consulted to extract relevant studies. A comprehensive survey based on studies from all major and relevant databases is left for future research.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s40881-023-00127-5>.

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Data availability Not applicable.

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