Misinformation Belief, Health Behavior, and Labor Supply during the COVID-19 Pandemic: Evidence from Tricycle Drivers in the Philippines *

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Abstract

This study aims to analyze the behavioral consequences of people's beliefs in conspiracy theories and misinformation surrounding COVID-19 vaccines. We employ unique panel data to examine the relationship among belief in misinformation, vaccination behavior, and labor supply of tricycle drivers in the Philippines. We find that individuals with higher risk preference are more likely to hold misinformed beliefs. These beliefs, in turn, are associated with reductions in vaccination and other preventive health behaviors. We also find that beliefs in misinformation delay workplace recovery.

Keywords: COVID-19, Health Behaviors, Labor Supply, Misinformation.

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1 Introduction

The COVID-19 pandemic has caused profound disruptions worldwide. In the early stages, non-pharmaceutical interventions, such as lockdowns, mobility restrictions, mask mandates, and hygiene campaigns, played a critical role in mitigating viral spread. As the pandemic progressed, mass vaccination campaigns became central to controlling transmission and reducing mortality.

Three years into the pandemic, major logistical challenges, including vaccine supply shortages, inadequate distribution infrastructure, and workforce limitations, have largely been resolved. Yet, vaccine hesitancy has emerged as a major obstacle to achieving widespread immunization. A significant share of the global population remains unwilling to be vaccinated, influenced by limited understanding of vaccine safety and efficacy, as well as the proliferation of misinformation through social media platforms (Roozenbeek et al., 2020). As a result, vaccine booster uptake remains low across many countries. For instance, in the United States, fewer than half of the population has received a third dose of the COVID-19 vaccine (Mathieu et al., 2023).

In low- and middle-income countries (LMICs), the situation is mixed. While some LMICs have shown higher willingness to vaccinate compared to countries like the United States and Russia, others still report high rates of vaccine hesitancy (Ackah et al., 2022). In some cases, one in five adults remains unwilling to be vaccinated (Dayton et al., 2022). These patterns underscore the urgent need to understand the individual-level socioeconomic and behavioral determinants of belief in conspiracy theories and misinformation. However, empirical research on this topic, especially in LMIC contexts, remains scarce.

This study addresses that gap by analyzing how belief in misinformation shapes health behavior and labor supply decisions during the COVID-19 pandemic, using a novel panel dataset collected in the transport sector, a key vector of disease transmission in developing countries. We focus on tricycle drivers, who provide a widely used commuting service in low-income communities in the Philippines. A distinguishing feature of our data is that we observe individuals' risk and time preferences from lab-in-the-field experiments conducted just before the pandemic, which we match to repeated surveys on vaccination behavior and misinformation beliefs during the pandemic.

This study addresses the following research questions. First, what are the determinants of misinformation beliefs, particularly the role of economic preferences such as risk and time preferences? Second, how do beliefs in misinformation affect health behaviors, including COVID-19 testing, vaccination, and preventive measures? Finally, how does misinformation shape labor supply decisions among tricycle drivers under pandemic-related restrictions?

Our analysis yields three key findings. First, among the economic correlates of misinformation, education is strongly and negatively associated with belief in misinformation, while other socioeconomic characteristics show little predictive power. Additionally, individuals with higher risk tolerance are more likely to hold misinformed beliefs, suggesting that greater willingness to accept risk is linked to greater susceptibility to health-related misinformation.

Second, misinformation beliefs are closely associated with lower adoption of health-promoting behaviors. Drivers who hold more incorrect beliefs about COVID-19 are significantly less likely to receive vaccines, even though their work involves regular contact with passengers. We also find a negative relationship between misinformation and preventive behaviors such as avoiding social gatherings, frequent handwashing, and sneezing into one's elbow.[1]

Third, misinformation beliefs are associated with slower recovery in labor supply. After the initial strict lockdown phase, when restrictions were gradually lifted, drivers who held stronger misinformation beliefs were slower to return to work.

This paper makes three primary contributions. First, this study contributes to the literature on the psychological and economic foundations of misinformation beliefs. While past research has emphasized cognitive and social drivers (Ecker et al., 2022), we show that economic preferences, particularly risk tolerance, are significantly associated with susceptibility to misinformation. Specifically, we find that individuals who exhibited greater risk tolerance before the pandemic were more likely to hold misinformed beliefs during it. In line with existing studies, we also find that individuals with higher levels of education are less vulnerable to misinformation (Lazer et al., 2018; Roozenbeek et al., 2020).[2]

[1] We do not find a significant relationship between misinformation and face mask use, likely due to the mandatory nature of mask-wearing policies in the Philippines, which left little room for individual discretion.

[2] While we do not evaluate interventions to correct misinformation, prior studies show that simple nudges prompting individuals to consider the accuracy of information can reduce susceptibility (Pennycook et al., 2020; Epstein et al., 2021). However, fact-checking and corrective information can sometimes backfire and reinforce false beliefs (Vijaykumar et al., 2021; Nyhan et al., 2014; Pluviano et al., 2017; Carey et al., 2020; Chan et al., 2017).

Second, it adds to the literature on misinformation and public health behavior, reinforcing the finding that misinformed beliefs reduce compliance with preventive guidelines such as vaccination and hygiene practices (Bode and Vraga, 2018; Nyhan et al., 2014; Loomba et al., 2021; Romer and Jamieson, 2020; Roozenbeek et al., 2020; Earnshaw et al., 2020). Unlike many studies that rely on hypothetical vaccination intentions before vaccine rollout, we measure actual behavior and confirm that misinformation is negatively associated with vaccine uptake and other preventive actions.

Third, we contribute to the underexplored literature on labor supply during health crises. Prior studies have shown that lockdowns led to drastic reductions in mobility in Metro Manila and made tricycle operation infeasible (Hasselwander et al., 2021; Jiang et al., 2022). However, to our knowledge, no prior research has examined how misinformation beliefs influence the timing of return to work. We find that drivers who held misinformed beliefs were slower to resume work during the reopening phase.

The remainder of the paper is structured as follows. Section 2 provides institutional background on tricycle drivers, COVID-19-related mobility restrictions, and public health measures in the Philippines. Section 3 describes the data, descriptive statistics, and empirical methodology. Section 4 presents our main results on misinformation, health behaviors, and labor supply. Section 5 concludes with policy implications.

2 Institutional background

2.1 Tricycle drivers in the Philippines

In many developing countries, paratransit services play a vital role in meeting daily mobility needs, particularly where formal mass transit systems, such as mass rapid transit (MRT), light rail transit (LRT), or bus rapid transit (BRT), remain limited or underdeveloped. Although paratransit vehicles are often poorly regulated and operate under substandard conditions, they provide flexible, affordable, and accessible transportation, particularly in areas underserved by formal transit networks. Governments in the region increasingly recognize paratransit as an indispensable part of the urban transportation system. In Southeast Asia, examples include motodops and remorks in Cambodia, angkots and Bajajs in Indonesia, and jeepneys and tricycles in the Philippines.

In the Philippines, a tricycle is a motorcycle with a sidecar attached, typically accommodating three to four passengers. Tricycles are a common mode of transport in urban and peri-urban areas, especially on narrow streets where larger vehicles cannot easily pass. Compared to other modes, they offer low-cost and convenient transportation with highly flexible routing. For these reasons, tricycles remain one of the most widely used means of daily transportation for the general public (Chuenyindee et al., 2022). In addition to their mobility function, tricycles also represent a critical source of employment and income for many informal sector workers.

According to the Philippine Land Transportation Office, there were approximately 8.1 million registered motorcycles in the country in 2021, of which about 1.5 million were classified as tricycles. Although it is not possible to determine exactly how many of these tricycles are used for commercial passenger transport, the registration data provide an upper bound on the potential size of the commercial tricycle sector. The majority of registered tricycles are located on the island of Luzon, where Metro Manila is situated, highlighting the concentration of this transport mode in densely populated areas.

Tricycle drivers typically operate within Tricycle Operators and Drivers' Associations (TODAs), which are registered and overseen by municipal governments. A TODA functions as a cooperative-style organization that sets and enforces its own rules and codes of conduct among members. These associations usually maintain a fixed terminal or station, from which drivers serve local neighborhoods. TODAs also serve as informal governance units, mediating access to routes, pricing norms, and community engagement. They vary widely in size, from as few as 20 to as many as 300 members, with an average of around 60 drivers per TODA in Metro Manila.

2.2 COVID-19 policies

2.2.1 Mobility restrictions

The Philippine government implemented a three-phase approach to mobility restrictions in response to the COVID-19 pandemic. Phase 1, Enhanced Community Quarantine (ECQ), from March 17 to May 31, 2020, was the strictest stage. It included stay-at-home orders, the suspension of public transportation, and tight restrictions on individual mobility. Phase 2, General Community Quarantine I (GCQ I), from June 1, 2020, to March 28, 2021, marked a partial easing of restrictions. Public and private transport services were gradually restored, and tricycles were allowed to operate under specific constraints, such as reduced passenger capacity and a ban on back riders. Phase 3, General Community Quarantine II (GCQ II), began after March 28, 2021. Most restrictions were lifted, and near-normal activity resumed in many sectors. Our panel survey data span these policy transitions. The first survey round was conducted in December 2019, prior to the onset of the pandemic, while the second round took place in December 2021, during the GCQ II period, when most restrictions had been lifted.

Mobility restrictions during ECQ had a severe and immediate impact on tricycle drivers' ability to work. Public transportation services were suspended, with exceptions made only for shuttle vehicles serving health workers and essential personnel. Stay-at-home orders permitted only one designated individual per household to leave the residence, and all in-person schooling was suspended. These policies made it nearly impossible for tricycle drivers to operate, leading to a dramatic reduction in labor supply. During GCQ I, some restrictions were eased. Tricycles were allowed to resume operations, though with limitations on capacity. Drivers could not carry back riders, and the number of passengers was capped. Curfew hours, which had been set from 8:00 p.m. to 5:00 a.m. during ECQ, were shortened to 10:00 p.m. to 5:00 a.m. during GCQ I. Table 1 provides a detailed summary of restrictions imposed on public utility vehicles during this period.

The GCQ II phase saw a broad relaxation of mobility restrictions. Public transportation services expanded, with fewer operational limitations on capacity and route coverage. Curfew hours were further shortened to 10:00 p.m. to 4:00 a.m. More importantly, key sectors of the economy, including tourism, sports, and entertainment, were allowed to reopen. This relaxation led to increased mobility demand and created new work opportunities for tricycle drivers, allowing many to resume work and rebuild income lost during the earlier phases.

These three policy phases offer a natural framework for analyzing tricycle drivers' labor market behavior during the pandemic. The timing of our panel data allows us to capture pre-pandemic baseline conditions, as well as post-lockdown recovery during a period of eased restrictions. Understanding how mobility policies shaped drivers' work opportunities and constraints is central to interpreting our results on labor supply and the role of misinformation in the return to work.

2.2.2 Health policies

Throughout the COVID-19 pandemic, the Philippine government strictly enforced the use of face masks in public spaces. Following the formal declaration of the pandemic, the Inter-Agency Task Force (IATF) mandated universal mask-wearing in all public areas (IATF, 2020a). This mandate remained in effect throughout our study period, covering the Enhanced Community Quarantine (ECQ) through the second phase of General Community Quarantine (GCQ II) (IATF, 2020b). A minor policy shift occurred at the end of GCQ II, when the government allowed voluntary mask-wearing in both indoor and outdoor spaces, excluding healthcare facilities, medical transport, and public transportation (IATF, 2021). For tricycle drivers, who were classified as public transport operators, face mask use remained mandatory at all times. Compliance among drivers was exceptionally high: over 99% of respondents in our survey reported wearing masks during the GCQ II phase.

COVID-19 testing was made available through both public and private providers under the oversight of the Department of Health's Health Facilities and Services Regulatory Bureau (HFSRB). While symptomatic individuals and those with known exposure were encouraged to get tested, testing was not compulsory and relied on voluntary participation. Contact tracing was inconsistently implemented, and no specific testing protocols were imposed on tricycle drivers. In particular, there were no requirements for drivers to be tested before returning to work, and no regular testing mandates for transport workers. Consequently, testing behavior depended largely on individual initiative and access rather than regulatory enforcement.

The national COVID-19 vaccination campaign began in February 2021. Due to initial supply limitations, the Philippine government adopted a prioritization scheme based on the World Health Organization (WHO) Strategic Advisory Group of Experts (SAGE) framework.[3] Tricycle drivers were included in Priority Group A4, which encompassed frontline personnel in essential sectors, including uniformed services and transport workers. This classification allowed drivers early access to vaccination, and uptake among this group was notably high. By December 2021, 87% of drivers in our sample had received at least one dose of a COVID-19 vaccine, compared to a national average of 49% as of December 2, 2021. Figure 2 plots the month of vaccination for the drivers. While the initial pace of vaccination was strong, it slowed significantly after September 2021, with the coverage

[3] See https://doh.gov.ph/Vaccines/when-will-the-COVID-19-available-to-me

rate plateauing around 87%.

These policy features—universal enforcement of mask mandates, voluntary testing, and prioritized vaccination access—define the institutional environment in which tricycle drivers made health and work decisions during the pandemic. This context is critical for interpreting the behavioral outcomes we study, including compliance with preventive measures, labor supply decisions, and the influence of misinformation.

2.3 Misinformation on COVID-19 vaccines

Vaccine hesitancy, defined by the World Health Organization (WHO) as the delay in acceptance or refusal of vaccination despite the availability of vaccination services, has long been recognized as a significant public health concern (Schwartz, 2012). Even prior to the COVID-19 pandemic, the WHO identified vaccine hesitancy as one of the top ten threats to global health, citing its role in the resurgence of diseases such as measles (WHO, 2019). During the COVID-19 crisis, willingness to accept vaccines varied widely across countries. In the Philippines, willingness to receive a COVID-19 vaccine was notably low. Only about 40% of survey respondents indicated they would accept vaccination, compared to over 80% in many neighboring Southeast Asian countries (Bank, 2021).

A key factor contributing to low vaccine uptake in the Philippines is the long-standing mistrust resulting from the 2017 Dengvaxia controversy. The government launched a national school-based immunization program using Dengvaxia, the first commercially available dengue vaccine developed by Sanofi Pasteur. Subsequent findings revealed that the vaccine could increase the risk of severe dengue in children who had not previously been infected. The incident triggered widespread public alarm and led to a sharp decline in confidence in vaccines more broadly. Following the collapse in routine immunization, the country experienced a major measles outbreak.[4]

This historical distrust was compounded by the rapid development of COVID-19 vaccines and the spread of misinformation. Conspiracy theories and false claims, often shared via social media, amplified fears and deepened mistrust in both the government and healthcare providers (Berdida et al., 2023). These dynamics created a highly volatile environment. In some cases, panic and misinformation led to disruptions at vaccination centers,

[4] A similar erosion of public trust in health policy occurred in the United States following the disclosure of the Tuskegee syphilis study. Alsan and Wanamaker (2018) show that the study's revelation in 1972 led to increased medical mistrust and higher mortality rates among older Black men.

with crowds overwhelming facilities based on rumors about government restrictions or vaccine availability (Gomez, 2021).

To combat the spread of misinformation, the Philippine Department of Health (DOH) issued fact-check statements and organized public forums to clarify vaccine safety, dispel rumors, and rebuild public trust (Rucat, 2022; DOH, 2021). In this study, we leverage these DOH-issued fact checks to construct a measure of belief in misinformation. Using this measure, we examine how misinformation correlates with vaccine hesitancy and health behaviors among tricycle drivers, a group with high exposure to both public information campaigns and online rumors.

3 Data and Methodology

3.1 Data collection

This study uses data from two rounds of panel surveys of tricycle drivers in Metropolitan Manila. Figure 1 shows the timeline of two surveys and the Philippine government restrictions in response to the COVID-19 pandemic.

In December 2019, right before the outbreak of COVID-19, the first survey was conducted on randomly sampled tricycle drivers from Manila City and Quezon City. From TODAs that gave consent to participate in the survey, we acquired the list of entire drivers where approximately 8 to 10 drivers per TODA were randomly selected for interviews. In total, 2,189 drivers from 233 TODAs participated.

The first survey was conducted on the field with enumerators visiting TODA drivers in person. The survey included basic demographic and socioeconomic information, financial inclusion and cognitive skills. We also conducted lab-in-the-field experiments to measure their risk preference, time preference and economic rationality. The format of the experiments followed the graphic budget allocation tools used in Choi et al. (2007) and Kim et al. (2018). This produces a rich choice environment that enables calculating various experimental measures underlying preferences. Refer to Appendix A for details on experimental questions.

The second survey took place in December 2021, two years after the first round. With the outbreak of the COVID-19 pandemic right after the first survey, the project was temporarily suspended and we let nature take its course. After two years, with the relaxation in restrictions during the GCQ II phase, the second survey was conducted using Computer-Assisted Telephone Interview (CATI) seeking to reach all 2,189 tricycle drivers by using the contact information provided in the first survey.[5] The phone interviews were completed with 1,490 drivers, with a response rate of 68 percent. Reasons for attrition included incorrect or changed phone numbers, non-response, or refusal to be interviewed. The comparison between follow-up samples and attrited samples is provided in Appendix B. Respondents who completed the first survey but did not participate in the second were more likely to be older, unmarried, and more risk-taking, and they exhibited lower Raven's score, numeracy score, and CCEI.

The second survey measured health behaviors, labor supply decisions, and belief in misinformation on COVID-19 vaccines. The health behaviors consist of 3 categories: COVID-19 testing, vaccination and preventive behaviors. We recorded their vaccination status, the month of vaccination and the type of vaccines received. We also asked if they engaged in preventive behaviors in the past seven days of the survey. There were four questions on preventive behaviors; avoiding social gatherings, wearing a face mask when working, washing hands with soap or sanitizers, and coughing or sneezing into an elbow or a tissue instead of hands. An average of these four questions was used to make an index of preventive behaviors that range between 0 and 1.

Labor supply (i.e. employment, type of job, and work hours) was measured by asking drivers retrospectively (*i*) during ECQ, (*ii*) during GCQ I, and (*iii*) in the past four weeks at the time of the survey which belongs to GCQ II. To alleviate recall bias, questions for each period provided an exact date and brief description of the government restrictions during the period.

We also measured the beliefs in misinformation by asking 11 true or false questions on COVID-19 vaccines. They were sourced from the Philippines Department of Health "Fake vs Facts" pamphlet that listed common fake news regarding COVID-19 vaccines at the time and correct information. The 11 statements are listed below with answers in the order used in the survey.

1. COVID-19 vaccines can change the DNA of those vaccinated. (F)

[5] We primarily used the phone numbers of the drivers to contact them for interviews. Other tracking information provided in the first survey, such as the phone numbers from family members, colleagues, and TODA presidents, was also extensively used.

2. COVID-19 vaccines are fake and nothing but a lucrative money-making venture for manufacturers. (F)

3. There can be mild side effects after getting a COVID-19 vaccine, like headache and fever. (T)

4. COVID-19 vaccines will suppress or alter my immune system. (F)

5. Wearing a mask and face shields after getting vaccinated can further reduce the chance of COVID-19 infection. (T)

6. The COVID-19 vaccines are not effective given the short time for development. (F)

7. You can still pass the COVID virus on to others after vaccination. (T)

8. COVID-19 vaccines can cause sterility or infertility. (F)

9. COVID-19 vaccines contain magnets and microchips that could track those who get vaccinated. (F)

10. COVID-19 vaccines can reduce death from COVID-19. (T)

11. COVID-19 vaccines contain chopped parts of an aborted fetus. (F)

There were four correct statements and seven false statements. For each question, we code misinformation belief as one if the driver provides an incorrect answer. Hence, the variable equals one when a driver answers "True" to a false statement or answers "False" to a correct statement. We then construct an index of misinformation beliefs as the total number of incorrect answers across the 11 questions, normalized to be between 0 and 1.

3.2 Descriptive statistics

Table 2 presents descriptive statistics. Panel A provides a summary of the variables collected in the first survey.[6] Tricycle drivers are predominantly male (98.6%), mostly married (81.3%), on average 43 years old, and have about ten years of education at baseline.

[6]The demographic and experimental characteristics of drivers who joined both rounds of the surveys are reported in Table A1 in Appendix section B.

Thanks to extensive lab-in-the-field experiments conducted in the first survey, we have detailed information about their preferences and cognitive skills. The risk preference, impatience and CCEI measures are within unit intervals. The closer the risk preference measure is to one, the more risk-taking drivers are. CCEI captures the level of economic rationality and CCEI of one indicates full rationality. Present and future bias variables are dummy variables that indicate whether a tricycle driver exhibited present bias ($\beta < 1$) and future bias ($\beta > 1$), respectively, in the time preference experiment using the quasi-hyperbolic discounting (β, δ) model (Laibson, 1997). The omitted category is exponential discounting. Three types of test scores, Raven's score, numeracy score and financial literacy scores, are the share of correct questions from the total of 4, 8 and 11 questions.

Panel B of Table 2 provides descriptive statistics of the variables collected in the second survey. At the time of the second survey (December 2021), about 36 percent of drivers received COVID-19 testing at least once. Vaccination among tricycle drivers started in February 2021, and the share of vaccinated quickly increased from June to August 2021 (Figure 2). The average vaccination rate with at least one dosage was 89 percent. Compared to the average population take-up rate of 49 percent on Dec 2, 2021, it is much higher because drivers were categorized as essential frontline workers and were prioritized for vaccination. Checking four types of preventive behaviors reveals high compliance, especially in wearing face masks (99 percent of the respondents).

The share of incorrect answers given to each of the 11 misinformation questions is also reported. The variable equals one when a driver provides an incorrect answer, such that the closer it is to one, the more drivers hold incorrect beliefs. More than 70 percent of the drivers had a false belief that the COVID-19 vaccine can change DNA, while more than 80 percent correctly believed that mask helps in preventing COVID-19 infections even after vaccination. The misinformation index is calculated as the shares of wrong answers to 11 questions and summarizes the degree of misinformed beliefs drivers hold.

ECQ is the period when mobility restrictions were most stringent. While tricycle operation was generally prohibited, some drivers could find similar alternative jobs such as delivering food or providing shuttle services for essential workers, like medical staff. Table 3 shows the type of jobs drivers had during the pandemic. Strict restrictions resulted in only 18 percent of the drivers working in ECQ.[7] Among workers, about 30 percent had

[7] Our data only captures labor supply at the extensive margin. Working hours were measured at the first survey and at the recent four weeks of the second survey (GCQ II), but not during ECQ and GCQ I. Asking

a different job other than driving.

Mobility restrictions were eased and more drivers returned to work during GCQ I. 66 percent of drivers were working again, and among them, 90 percent were working as drivers, most likely on tricycles. By the time of the survey in December 2021, which was GCQ II, about 89 percent of the respondents had resumed work, and 88 percent of them were drivers. The pattern shows that as restrictions imposed by the government during the outbreak of the pandemic are lifted, drivers return to work, mostly as drivers.

3.3 Methodology

Our first analysis investigates the economic correlates of misinformation beliefs. Specifically, we regress an index of misinformation, $misinfo_{ic}$, on demographic and experimental characteristics. The econometric specification is given by

$$misinfo_{ic} = \alpha_0 + \mathbf{X_{ic}} + \gamma_c + \varepsilon_{ic}, \tag{3.1}$$

where $misinfo_{ic}$ denotes the misinformation index for individual i in TODA c, calculated as the share of incorrect answers to 11 questions. The vector $\mathbf{X_{ic}}$ contains demographic and experimental variables from the first survey, as reported in Panel A of Table 2. TODA fixed effects, γ_c, capture potential differences in government restrictions across regions and TODAs.

Next, we examine how belief in misinformation predicts health behaviors and labor supply. Since we lack exogenous variation for belief in misinformation, we employ rich individual-level data from the first survey to control for omitted variable bias. The econometric specification is given as follows:

$$y_{ic} = \beta_0 + \beta_1 misinfo_{ic} + \mathbf{X_{ic}} + \gamma_c + \varepsilon_{ic}, \tag{3.2}$$

Outcome variable, y_{ic}, is health behaviors and labor supply decisions for individual i of TODA c. Our independent variable of interest is $misinfo_{ic}$, an index of misinformation. We control for other factors that may affect both the outcome variable and belief in misinformation by including a vector of individual characteristics, $\mathbf{X_{ic}}$, and TODA fixed effects, γ_c.

daily working hours for a period more than one year ago would generate strong concern for recall bias.

Note that our specification relies on cross-sectional variation in misinformation beliefs across individuals and does not exploit any panel structure. Given these specifications, our results should be interpreted as correlations rather than causal estimates.

4 Results

4.1 Economic correlates of belief in misinformation

We begin by examining how individual characteristics and economic preferences are associated with belief in misinformation about COVID-19. Using data from lab-in-the-field experiments, we consider three key economic variables: risk preference, time preference, and the Critical Cost Efficiency Index (CCEI), a measure of economic rationality. Table 4 presents regression results, where the misinformation index is regressed on individual characteristics, controlling for TODA fixed effects. In Column (1), we focus on sociodemographic variables. While sex and marital status are not statistically significant, education is negatively associated with misinformation beliefs, consistent with prior findings (Roozenbeek et al., 2020; Delmastro and Paciello, 2022). Age also plays a non-linear role: the misinformation index declines up to approximately age 37, after which it begins to rise, as indicated by the positive coefficient on the quadratic term.

Column (2) incorporates experimentally measured economic preferences. The effects of education and age remain robust, even after the inclusion of additional variables. Among the economic preferences, risk preference is significantly and positively associated with misinformation beliefs. A possible interpretation is that those with a higher level of risk tolerance are more willing to accept the health-related risks from COVID-19 and are less motivated to search for information to correct misinformation beliefs. In contrast, time preference and CCEI show no statistically significant relationship with misinformation.

To further illustrate these associations, Figure 3 plots standardized correlations between education and risk tolerance with individual misinformation items. Education is consistently negatively associated with belief in false statements, while risk preference is positively associated. These patterns are particularly pronounced for highly inaccurate claims (highlighted in bold).

4.2 Misinformation beliefs and health behaviors

This section examines how misinformation beliefs relate to three key health behaviors during the COVID-19 pandemic: testing, vaccination, and preventive practices. We assume that belief in misinformation remains stable over the study period, consistent with findings from prior research on distrust in science and political contexts (Lewandowsky et al., 2012; Ecker et al., 2014, 2022). Table 5 presents regression results linking the misinformation index to these outcomes, with progressively richer control variables across columns.

Panel A shows that misinformation beliefs are negatively associated with the likelihood of undergoing COVID-19 testing, with the association statistically significant at the 10% level when the full set of control variables is included. The inclusion of demographic and experimental controls does not substantially alter the results.

Panel B provides stronger evidence of association. Across all model specifications, individuals with higher misinformation scores are significantly less likely to receive at least one dose of the COVID-19 vaccine. Back-of-the-envelope calculation suggests that a one standard deviation increase in the misinformation index is associated with a 5.2 percentage point (5.8 percent) reduction in vaccination take-up. This relationship is robust to the inclusion of both demographic and experimental covariates, suggesting that vaccine hesitancy is strongly linked to misinformed beliefs.

Panel C turns to other preventive behaviors. The results show that misinformation beliefs are negatively associated with several key practices, including avoiding social gatherings, frequent handwashing, and sneezing into the elbow. However, no significant relationship is found between misinformation and mask-wearing, likely due to the nationwide mandate that left little room for individual discretion. These patterns are consistent across individual behaviors as shown in Table 6.

Taken together, the results suggest that individuals who hold misinformed beliefs about COVID-19 and vaccines are less likely to engage in both preventive and protective health behaviors, potentially undermining public health efforts during pandemics.

4.3 Misinformation and labor supply

This section investigates how misinformation beliefs are associated with labor supply during different phases of the COVID-19 pandemic. We focus on three distinct periods defined by government mobility restrictions: Enhanced Community Quarantine (ECQ), General Community Quarantine I (GCQ I), and General Community Quarantine II (GCQ II). Belief in misinformation is assumed to be stable throughout the study period, consistent with prior research on distrust in science and political contexts (Lewandowsky et al., 2012; Ecker et al., 2014, 2022). Table 7 presents regression results under multiple specifications. The labor supply outcome is defined as participation in any type of work, not limited to tricycle driving.

During ECQ, the most restrictive phase, misinformation beliefs show no statistically significant association with labor supply. Across all specifications, the estimated coefficients are small and imprecise. This suggests that mobility restrictions were so binding that individual beliefs had limited influence on work decisions.

As restrictions eased under GCQ I, misinformation beliefs appear to have had a stronger effect. This period was marked by partial recovery of economic activity and growing optimism following the initial rollout of COVID-19 vaccines. Tricycle operations gradually resumed, and drivers were prioritized for vaccination. Despite these changes, individuals with higher misinformation scores were significantly less likely to return to work. A simple calculation indicates that a one standard deviation increase in the misinformation index is associated with a 2.3 percentage point (3.5 percent) decrease in the probability of working. This phase is the only period where we observe a statistically meaningful association between misinformed beliefs and labor supply.

By the GCQ II phase, most restrictions had been lifted and vaccination coverage had expanded. Misinformation beliefs no longer show a significant association with labor supply in this period. The point estimates are small and statistically insignificant, suggesting that most individuals had resumed work regardless of their beliefs. This indicates that misinformation may have delayed, but not prevented, return to the labor market.

The evidence shows that misinformation beliefs were most influential during the intermediate reopening phase (GCQ I), when individual discretion over labor supply was high but uncertainty remained. While misinformation did not lead to long-term labor market withdrawal, it likely contributed to a slower recovery in work activity.

We acknowledge that multiple mechanisms may explain the observed pattern. Individuals prone to misinformation might have initially overestimated COVID-19 risks before vaccination began and later shifted toward vaccine-related misinformation once vaccination became available. In addition, such tendencies—shaped by distrust in science or authority, low institutional confidence, and specific information-processing styles—could have produced overly cautious labor behavior during GCQ I, followed by overconfidence and reduced preventive behaviors by late 2021 (GCQ II). Because individuals endorsing misinformation often perceive official restrictions as illegitimate and are less willing to cooperate with institutions (Nicholls et al., 2024; Jennings et al., 2021; Zilinsky and Theocharis, 2025), this distrust may have simultaneously slowed their workplace return and lowered vaccination uptake. During the GCQ I phase, when the government eased work restrictions and prioritized tricycle drivers for vaccination, misinformed individuals may have expressed defiance by rejecting vaccination and disregarding the relaxed regulations, contributing to delayed labor-market recovery.

5 Conclusion

This study leverages a novel panel dataset of tricycle drivers in the Philippines to examine how misinformation beliefs relate to health and economic behaviors during the COVID-19 pandemic. Our analysis yields three key findings.

First, educational attainment and risk preferences are strongly associated with misinformation beliefs. Individuals with higher levels of education are less likely to believe in misinformation, while those with greater risk tolerance are more likely to hold misinformed views. This highlights the role of cognitive and behavioral traits in shaping susceptibility to misinformation.

Second, misinformation beliefs are negatively associated with critical health behaviors. Drivers who hold incorrect beliefs about COVID-19 and its vaccines are significantly less likely to be vaccinated or to adopt preventive health practices such as frequent handwashing, social distancing, and sneezing etiquette. These patterns are especially concerning given the high-contact nature of tricycle driving.

Third, misinformation beliefs are correlated with a delayed return to work following the most restrictive lockdown phase. During the period of gradual reopening, individuals who subscribed more strongly to misinformation were slower to resume economic activity, suggesting that false beliefs may hinder recovery even when formal restrictions are lifted.

While the analysis is correlational and does not establish causal relationships, the findings offer important policy insights. Addressing misinformation is critical not only for improving compliance with public health measures but also for accelerating labor market recovery in pandemic and post-pandemic contexts.

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6 Tables

Table 1: Passenger limits in public utility vehicles

Mode	Maximum Allowable Capacity (A)	Additional Restrictions (B)
Tricycles	Maximum of one passenger in sidecar	No passengers shall be seated beside or behind driver
Public utility buses, jeepneys, and shuttle services	50% of vehicle capacity (excluding driver and conductor)	Passengers seated on seat apart: no standing passengers. For jeepneys and shuttles: only one passenger in driver's row (if no conductor)
UV Express, taxis, and TNVS	Maximum two passengers per row	Only one passenger allowed in the driver's row

Notes: TNVS = Transport Network Vehicle Service (e.g., Grab taxi).
Source: Department of Transportation. Land Transportation Office Memorandum Circular No. 2020-2185.

Table 2: Descriptive statistics

	Mean	Standard deviation	N
Panel A. First survey			
Demographics			
Male	0.986	0.116	2189
Married	0.813	0.390	2189
Age	43.18	11.43	2189
Years of schooling	9.716	2.960	2184
Experiment			
Risk preference	0.587	0.085	2189
Impatience	0.381	0.199	2189
CCEI from risk domain	0.850	0.191	2189
CCEI from time domain	0.856	0.149	2189
Present bias	0.500	0.500	2189
Future bias	0.443	0.497	2189
Raven's test score	0.402	0.324	2189
Numeracy score	0.593	0.237	2189
Financial literacy score	0.603	0.165	2189
Panel B. Second survey			
COVID testing and vaccination			
Received COVID test ≥ 1	0.356	0.479	1490
Received COVID vaccine ≥ 1	0.889	0.315	1490
Preventive behavior			
Index for preventive behavior	0.866	0.173	1490
Avoid social gathering	0.837	0.370	1490
Wear mask	0.994	0.078	1490
Wash hands often	0.970	0.171	1490
Sneeze into elbow	0.664	0.473	1490
Labor supply			
Worked during ECQ	0.183	0.387	1490
Worked during GCQ I	0.655	0.476	1490
Worked during GCQ II	0.892	0.311	1490
Had a second job during ECQ	0.034	0.182	1490
Had a second job during GCQ I	0.113	0.317	1490
Had a second job during GCQ II	0.130	0.336	1490
Misinformation			
Index for belief in misinformation	0.486	0.229	1490
Vaccine can change DNA	0.756	0.430	1490
Vaccine is fake	0.430	0.495	1490
Vaccine suppresses immune system	0.666	0.472	1490
Vaccine is not effective	0.538	0.499	1490
Vaccine causes infertility	0.525	0.500	1490
Vaccine contains magnet	0.644	0.479	1490
Vaccine contains fetus	0.589	0.492	1490
Vaccine has side effects	0.264	0.441	1490
Mask helps even after vaccination	0.185	0.388	1490
Can still pass COVID after vaccine	0.303	0.460	1490
Vaccine reduces death	0.448	0.497	1490

Notes: This table reports descriptive statistics of all the variables used in this study. Risk preference, impatience and test score variables are within unit interval. The outcome variable equals one for an incorrect answer, indicating misinformed belief. Hence, the closer it is to 1, the more people are likely to believe in misinformation.

Table 3: Descriptive statistics

	ECQ (March-May 2020)		GCQ I (June 2020-Mar 2021)		GCQ II (April 2021-)	
Main occupation	Count	Percent	Count	Percent	Count	Percent
Driver of any vehicle	193	70.7	881	90.3	1,167	87.8
Delivery worker	23	8.4	81	8.3	97	7.3
Construction worker	4	1.5	11	1.1	22	1.7
Street vendor/shop	1	0.4	3	0.3	7	0.5
Daily laborer	4	1.5	4	0.4	10	0.8
Technician	1	0.4	4	0.4	6	0.5
Total who worked	273	100	976	100	1,329	100

Notes: This table reports the type of occupations held by initial tricycle drivers during the ECQ, GCQ I, and GCQ II periods. Tricycle driving belongs to the category, "Driver of any vehicle". Delivery worker is a sub-category of driver of any vehicle and refers to those delivering take-out foods. At the first baseline summary, no tricycle drivers were delivery workers.

Table 4: Economic correlates of belief in misinformation

	(1)	(2)
	Outcome var: Misinformation index	
Male	0.026	0.024
	(0.049)	(0.048)
Married	–0.017	–0.014
	(0.016)	(0.016)
Age/10	–0.059*	–0.059
	(0.036)	(0.036)
$(\text{Age}/10)^2$	0.008**	0.008**
	(0.004)	(0.004)
Years of education	–0.013***	–0.012***
	(0.002)	(0.002)
Risk preference		0.191**
		(0.081)
Impatience		0.051
		(0.033)
CCEI (risk domain)		–0.031
		(0.041)
CCEI (time domain)		0.013
		(0.048)
Present Bias		0.023
		(0.031)
Future Bias		0.017
		(0.031)
Raven's test score		0.007
		(0.023)
Numeracy score		–0.029
		(0.031)
Financial literacy score		–0.012
		(0.039)
Mean	0.486	0.486
N	1,479	1,479
TODA FE	Y	Y

Notes: This table reports association between belief in misinformation and individual characteristics. Risk preference, impatience and test score variables are within unit interval. Age variable is divided by 10 to make coefficients larger. The marginal effect of 1 year increase in age is one tenth of the reported coefficients. Both specifications include TODA fixed effects. Robust standard errors are used. A */**/*** indicates significance at the 10/5/1% levels.

Table 5: Misinformation and health behaviors

	(1)	(2)	(3)
Panel A. Outcome: Received COVID test ≥ 1			
Misinfo index	–0.126**	–0.107*	–0.105*
	(0.054)	(0.056)	(0.056)
Mean	0.356	0.356	0.356
Panel B. Outcome: Received COVID vaccine ≥ 1			
Misinfo index	–0.258***	–0.226***	–0.226***
	(0.039)	(0.041)	(0.041)
Mean	0.889	0.889	0.889
Panel C. Outcome: Preventive behavior index			
Misinfo index	–0.143***	–0.132***	–0.132***
	(0.022)	(0.023)	(0.023)
Mean	0.866	0.866	0.866
N	1,480	1,479	1,479
Controls			
TODA FE	Y	Y	Y
Demographic		Y	Y
Experimental			Y

Notes: This table reports association between misinformation index and health behaviors during COVID-19 pandemic. All specifications include TODA fixed effects. The set of demographic and experimental variables are reported in Table 2. Robust standard errors are used. A */**/*** indicates significance at the 10/5/1% levels.

Table 6: Misinformation and preventive health behaviors

	(1)	(2)	(3)	(4)
	Avoid social gathering	Wear mask	Wash hands often	Sneeze into elbow
Misinfo index	–0.209***	–0.006	–0.078***	–0.236***
	(0.050)	(0.009)	(0.022)	(0.060)
Mean	0.837	0.994	0.970	0.664
N	1,479	1,479	1,479	1,479
Controls				
TODA FE	Y	Y	Y	Y
Demographic	Y	Y	Y	Y
Experimental	Y	Y	Y	Y

Notes: This table reports association between belief in misinformation and four types of preventive health behaviors. All specifications include TODA fixed effects, and demographic and experimental control variables reported in Table 2. Preventive behavior index is the average of the four types of preventive behaviors. Robust standard errors are used. A */**/*** indicates significance at the 10/5/1% levels.

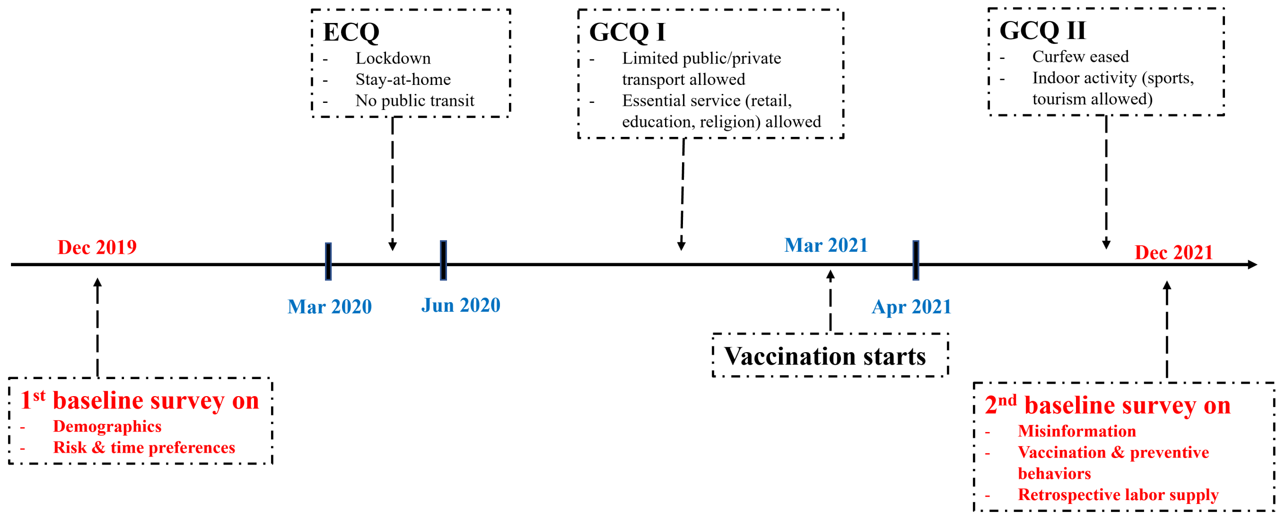
Table 7: Misinformation and labor supply

	(1)	(2)	(3)
Panel A. Outcome: Labor supply during ECQ			
Misinfo index	–0.035	–0.033	–0.035
	(0.046)	(0.048)	(0.048)
Mean	0.183	0.183	0.183
Panel B. Outcome: Labor supply during GCQ I			
Misinfo index	–0.146***	–0.106*	–0.099*
	(0.056)	(0.058)	(0.057)
Mean	0.655	0.655	0.655
Panel C. Outcome: Labor supply during GCQ II			
Misinfo index	0.006	0.017	0.018
	(0.036)	(0.038)	(0.039)
Mean	0.892	0.892	0.892
N	1,633	1,631	1,631
Controls			
TODA FE	Y	Y	Y
Demographic		Y	Y
Experimental			Y

Notes: This table reports association between misinformation index and labor supply during COVID-19 pandemic. All specifications include TODA fixed effects. The set of demographic and experimental variables are reported in Table 2. Robust standard errors are used. A */**/*** indicates significance at the 10/5/1% levels.

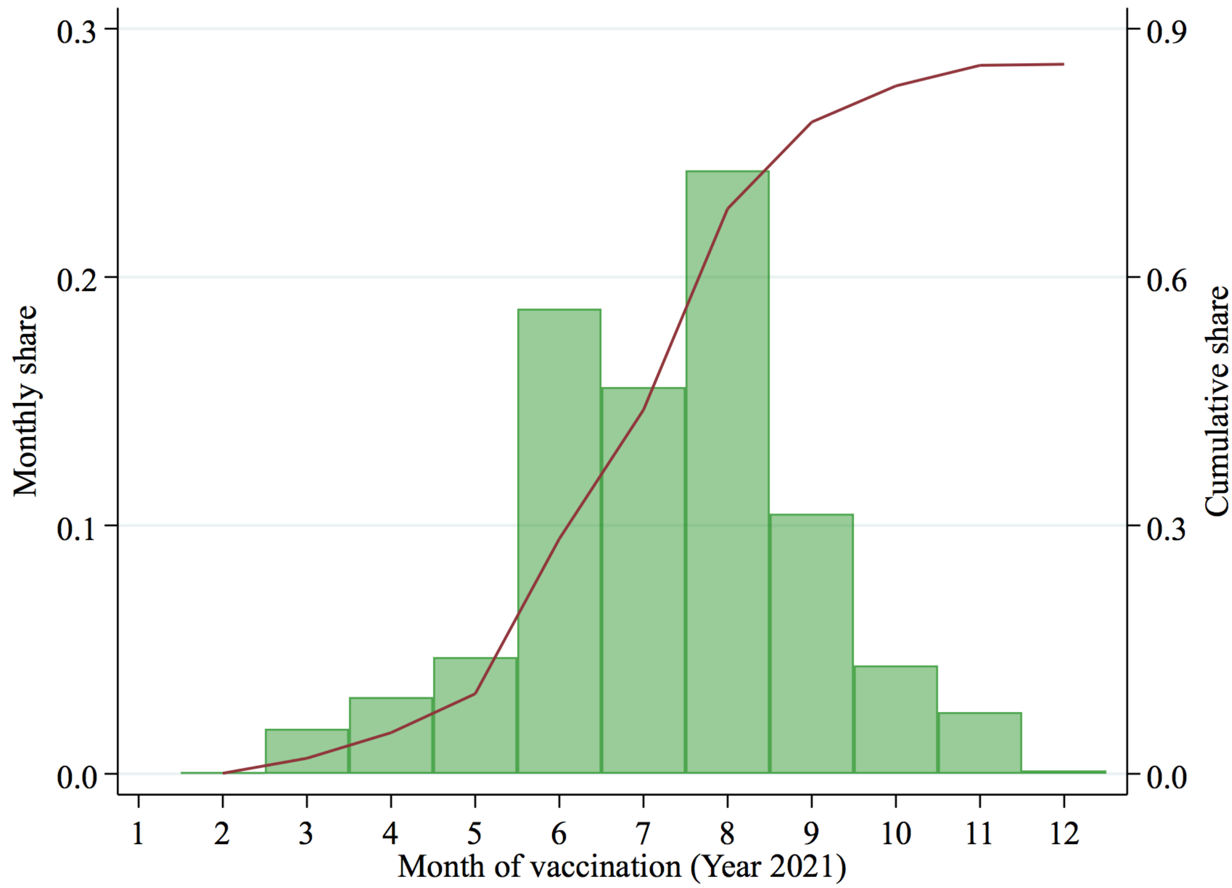
7 Figures

Figure 1: Survey timeline



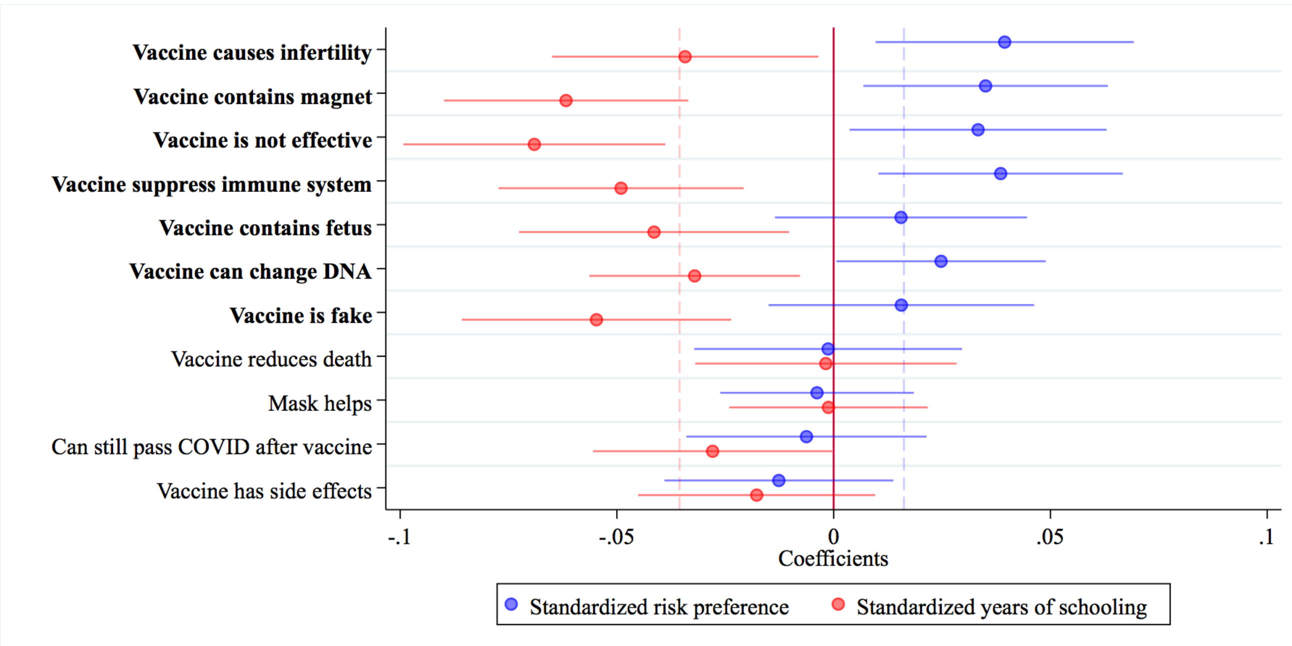
Notes: This figure shows the timeline of two waves of baseline survey and three periods of government-imposed COVID-19 restrictions.

Figure 2: Month of vaccination



Notes: The figure plots the month of vaccination among tricycle drivers in 2021. Orange line plots the cumulative vaccination rate among tricycle drivers, and uses the y-axis on the right.

Figure 3: Coefficients for individual misinformation questions



Notes: This figure reports the coefficients and 95% confidence intervals of standardized risk preference variable and the standardized years of schooling variable in regressions where outcome variable is individual misinformation question with a full set of control variables. The vertical dashed lines indicate averages of risk preference coefficients and years of schooling coefficients. The outcome variable equals one for an incorrect answer, indicating misinformed belief. Hence, the closer it is to 1, the more people are likely to believe in misinformation. The misinformation questions in bold are wrong statements and the rest are true statements.

Appendices

A Experimental Measurements of Economic Variables

Risk preference was measured using 20 questions of budget allocation between risky assets. Each question contained 11 options ranging from the most risky asset (all or nothing) to the safest asset (guaranteed amount with certainty), and drivers were asked to choose one. Among 11 options, some are first order stochastically dominated, and the choice of dominated options were used to test the understanding of risks.[8] At the end of the game, a random portion of the drivers were invited to actually play the game based on their choices. Using random number generator embedded in the tablets used for surveys, enumerator randomly chose one question out of 20 to play, randomly chose one state out of two, and the driver was paid by his or her own choice.[9]

Similarly, 30 questions of budget allocation between two distinct time frames were utilized to measure time preference. 15 questions were on choices between receiving a certain amount of money today vs another amount of money 50 days later, and the other half were on choices between 50 days later and 100 days later with the same payment scheme. This set of questions allows us to calculate a measure of time preference, and additionally detecting potentially time-inconsistent preferences such as present bias or future bias. Drivers were also randomly invited to play a game in time preference section, independently of risk preference section. One question out of the 30 questions was randomly selected and the participants were paid the amount of their choice on the selected question.

The graphic budget allocation tool has another merit of lending itself to the analysis of economic rationality. The set of choice data can be used to compute the Critical Cost Efficiency Index (CCEI) developed by Afriat (1972) that can be used as a measure for the level of economic rationality in each domain of risk preference and time preference. The measure captures the degree to which choices made by drivers in different budget allocation questions should be relaxed to satisfy the Generalized Axiom of Revealed Preference

[8]This information is used to create measures of understanding of risk and is used as control variables in the analysis.

[9]Drivers were told in the beginning of the survey that they will be randomly invited to actually play the game to encourage earnest participation.

(GARP).

B Attrition

Table A1: Attrition

	(1)	(2)	(3)
	1st & 2nd survey	Only 1st survey	Difference
Male	0.984	0.991	–0.008
	(0.126)	(0.092)	(0.005)
Age	42.51	44.61	–2.10***
	(11.05)	(12.08)	(0.54)
Years of schooling	9.738	9.669	0.069
	(2.921)	(3.042)	(0.138)
Married	0.830	0.778	0.051***
	(0.376)	(0.416)	(0.018)
Raven's test score	1.659	1.505	0.154***
	(1.309)	(1.266)	(0.059)
Numeracy score	4.817	4.578	0.239***
	(1.891)	(1.889)	(0.087)
Financial literacy score	4.848	4.768	0.079
	(1.324)	(1.313)	(0.060)
Risk preference	0.584	0.592	–0.008*
	(0.085)	(0.085)	(0.004)
Impatience	0.378	0.387	–0.009
	(0.193)	(0.210)	(0.009)
Present bias	0.507	0.486	0.020
	(0.500)	(0.500)	(0.023)
Future bias	0.440	0.449	–0.009
	(0.497)	(0.498)	(0.023)
CCEI from risk domain	0.855	0.837	0.018**
	(0.187)	(0.198)	(0.009)
CCEI from time domain	0.861	0.846	0.014**
	(0.147)	(0.153)	(0.007)
N	1490	699	

Notes: This table characterizes sample attrition by comparing those who were included in both 1st and 2nd survey with those who dropped out in the 2nd survey. The mean and standard deviations of the entire sample are reported in Table 2. Robust standard errors are used. A */**/*** indicates significance at the 10/5/1% levels.

C Association between labor supply and risk/time preference

Table A2: Association between health behaviors and experimental measures

	(1)	(2)	(3)
	COVID test	COVID vaccine	Preventive behavior
Risk preference	–0.100	0.000	0.027
	(0.160)	(0.118)	(0.065)
Impatience	–0.095	–0.061	–0.015
	(0.066)	(0.047)	(0.028)
Mean	0.356	0.889	0.866
N	1,479	1,479	1,479
Controls			
TODA FE	Y	Y	Y
Demographic	Y	Y	Y
Experimental	Y	Y	Y

Notes: This table reports association between health behaviors during COVID-19 pandemic and risk and time preference (impatience) measures. All specifications include TODA fixed effects and the full set of demographic and experimental controls (see Table 2 in the main text). Only the coefficients of risk preference and impatience are reported. Robust standard errors are used. A */**/*** indicates significance at the 10/5/1% levels.

Table A3: Association between health behaviors and misinformation instrumented by risk/time preference

	(1)	(2)	(3)
	COVID test	COVID vaccine	Preventive behavior
Misinfo index	–0.894	–0.342	0.012
	(0.788)	(0.527)	(0.299)
Mean	0.356	0.889	0.866
N	1,479	1,479	1,479
Controls			
TODA FE	Y	Y	Y
Demographic	Y	Y	Y
Experimental	Y	Y	Y

Notes: This table reports association between health behaviors during COVID-19 pandemic and misinformation index using two-stage least square regression. Misinformation index is instrumented by the risk and time preference (impatience) measures. All specifications include TODA fixed effects and the full set of controls described in Table 2 of the main text. Robust standard errors are used. A */**/*** indicates significance at the 10/5/1% levels.

Table A4: Association between labor supply and experimental measures

	(1)	(2)	(3)
	ECQ	GCQ I	GCQ II
Risk preference	0.079	0.193	–0.013
	(0.132)	(0.172)	(0.111)
Impatience	0.007	–0.110	–0.017
	(0.058)	(0.068)	(0.048)
Mean	0.183	0.655	0.892
N	1,479	1,479	1,479
Controls			
TODA FE	Y	Y	Y
Demographic	Y	Y	Y
Experimental	Y	Y	Y

Notes: This table reports association between labor supply during COVID-19 pandemic and risk and time preference (impatience) measures. All specifications include TODA fixed effects and the full set of demographic and experimental controls (see Table 2 in the main text). Only the coefficients of risk preference and impatience are reported. Robust standard errors are used. A */**/*** indicates significance at the 10/5/1% levels.

Table A5: Association between labor supply and misinformation instrumented by risk/time preference

	(1)	(2)	(3)
	ECQ	GCQ I	GCQ II
Misinfo index	0.319	0.063	–0.145
	(0.611)	(0.764)	(0.499)
Mean	0.183	0.655	0.892
N	1,479	1,479	1,479
Controls			
TODA FE	Y	Y	Y
Demographic	Y	Y	Y
Experimental	Y	Y	Y

Notes: This table reports association between labor supply during COVID-19 pandemic and misinformation index using two-stage least square regression. Misinformation index is instrumented by the risk and time preference (impatience) measures. All specifications include TODA fixed effects and the full set of controls described in Table 2 of the main text. Robust standard errors are used. A */**/*** indicates significance at the 10/5/1% levels.

D Association between individual misinformation questions and outcomes

This section examines the association between responses to individual misinformation questions and health behaviors and labor supply during COVID-19. While the main analysis used a composite misinformation index, this section uses individual misinformation questions as explanatory variables. The econometric specification is given as follows.

$$y_{ic} = \eta_0 + \sum_{q=1}^{11} \eta_q question_{ic}^q + \mathbf{X_{ic}} + \gamma_c + \varepsilon_{ic}, \tag{D.1}$$

There are eleven questions on misinformation beliefs. We include all eleven questions ($question_{ic}^q$, with $q = 1, 2, ..., 11$) in each regression. Each variable equals one if the respondent answered incorrectly (i.e., answering Yes to incorrect statements and No to correct statements). Our coefficients of interest, η_q for $q = 1, 2, ..., 11$, capture the correlation between belief in a given misinformation and an outcome variable. All specifications include TODA fixed effects as well as demographic and experimental controls, reported in Table 2.

Tables A6, A7, and A8 present the results. Overall, the direction of the coefficients is consistent across items: misinformation tends to correlate negatively with vaccination and preventive behaviors, and with slower recovery in labor supply. However, the magnitude and statistical significance of individual coefficients vary. Some items, particularly those related to vaccine safety, show larger and more precisely estimated effects, while others are smaller or insignificant. Given the limited sample size, we do not have sufficient power to test each item individually or to apply multiple-hypothesis testing corrections that would yield meaningful adjusted p-values. Therefore, we focus on the general pattern rather than individual coefficient significance. Across outcomes, the same directionality emerges, with certain types of misinformation—such as doubts about vaccine efficacy—playing a more prominent role in specific behavioral domains. Together, these results suggest that misinformation consistently undermines preventive and protective actions, even if item-level precision varies.

Table A6: Individual misinformation questions and health behaviors

	(1)	(2)	(3)
	Test	Vaccine	Preventive behavior index
Vaccine causes infertility	–0.032	–0.007	0.009
	(0.033)	(0.022)	(0.013)
Vaccine contains magnet	0.039	–0.009	–0.019
	(0.033)	(0.021)	(0.011)
Vaccine is not effective	0.015	–0.015	–0.004
	(0.031)	(0.021)	(0.012)
Vaccine suppresses immune system	–0.008	–0.084***	–0.004
	(0.031)	(0.019)	(0.011)
Vaccine contains fetus	–0.007	–0.001	0.025**
	(0.033)	(0.024)	(0.012)
Vaccine can change DNA	–0.025	–0.005	–0.021*
	(0.033)	(0.020)	(0.012)
Vaccine is fake	–0.042	–0.031	–0.030**
	(0.032)	(0.021)	(0.012)
Vaccine reduces death	–0.013	–0.021	–0.023**
	(0.028)	(0.019)	(0.010)
Mask helps	–0.002	–0.062**	–0.056***
	(0.037)	(0.026)	(0.014)
Can still pass COVID after vaccine	0.033	–0.017	–0.040***
	(0.029)	(0.020)	(0.011)
Vaccine has side effects	–0.054*	0.010	–0.036***
	(0.031)	(0.020)	(0.012)
Mean	0.356	0.889	0.866
N	1,479	1,479	1,479
Controls			
TODA FE	Y	Y	Y
Demographic	Y	Y	Y
Experimental	Y	Y	Y

Notes: This table reports association between individual misinformation questions and health behaviors during COVID-19 pandemic. All misinformation questions equal one for an incorrect answer, indicating misinformed belief. Hence, it equals one when answered Yes to incorrect statements and No to correct statements. Questions in bold are wrong statements and the rest are true statements. All specifications control TODA fixed effects and the set of demographic and experimental variables, reported in Table 2. Robust standard errors are used. A */**/*** indicates significance at the 10/5/1% levels.

Table A7: Individual misinformation questions and preventive health behaviors

	(1)	(2)	(3)	(4)
	Avoid social gathering	Wear mask	Wash hands often	Sneeze into elbow
Vaccine causes infertility	0.002	0.001	0.003	0.032
	(0.027)	(0.006)	(0.014)	(0.034)
Vaccine contains magnet	–0.033	–0.012**	–0.006	–0.024
	(0.027)	(0.006)	(0.011)	(0.034)
Vaccine is not effective	0.009	–0.002	–0.011	–0.013
	(0.026)	(0.006)	(0.013)	(0.033)
Vaccine suppress immune system	0.019	0.006	0.004	–0.044
	(0.026)	(0.005)	(0.011)	(0.032)
Vaccine contains fetus	0.047*	0.013*	0.001	0.041
	(0.027)	(0.008)	(0.013)	(0.034)
Vaccine can change DNA	–0.065**	–0.005	–0.002	–0.014
	(0.028)	(0.005)	(0.011)	(0.033)
Vaccine is fake	–0.027	–0.001	–0.031***	–0.062**
	(0.026)	(0.006)	(0.012)	(0.031)
Vaccine reduces death	–0.068***	–0.005	0.001	–0.021
	(0.023)	(0.004)	(0.010)	(0.029)
Mask helps	–0.105***	–0.008	–0.040**	–0.072*
	(0.031)	(0.008)	(0.017)	(0.037)
Can still pass COVID after vaccine	–0.040*	–0.002	–0.014	–0.103***
	(0.024)	(0.006)	(0.011)	(0.030)
Vaccine has side effects	–0.085***	0.000	0.008	–0.069**
	(0.027)	(0.006)	(0.010)	(0.033)
Mean	0.837	0.994	0.970	0.664
N	1,479	1,479	1,479	1,479
Controls				
TODA FE	Y	Y	Y	Y
Demographic	Y	Y	Y	Y
Experimental	Y	Y	Y	Y

Notes: This table reports association between individual misinformation questions and preventive health behaviors during COVID-19 pandemic. All misinformation questions equal one for an incorrect answer, indicating misinformed belief. Hence, it equals one when answered Yes to incorrect statements and No to correct statements. Questions in bold are wrong statements and the rest are true statements. All specifications control TODA fixed effects and the set of demographic and experimental variables, reported in Table 2. Robust standard errors are used. A */**/*** indicates significance at the 10/5/1% levels.

Table A8: Individual misinformation questions and labor supply

	(1)	(2)	(3)
	ECQ	GCQ I	GCQ II
Vaccine causes infertility	0.032	0.015	–0.000
	(0.028)	(0.033)	(0.021)
Vaccine contains magnet	–0.023	0.022	–0.001
	(0.029)	(0.033)	(0.021)
Vaccine is not effective	–0.035	–0.067**	0.023
	(0.027)	(0.032)	(0.019)
Vaccine suppress immune system	–0.004	–0.001	–0.030
	(0.028)	(0.031)	(0.020)
Vaccine contains fetus	–0.026	0.014	0.035*
	(0.028)	(0.033)	(0.020)
Vaccine can change DNA	0.015	0.007	0.020
	(0.029)	(0.035)	(0.021)
Vaccine is fake	0.017	–0.017	–0.013
	(0.026)	(0.031)	(0.020)
Vaccine reduces death	0.013	–0.016	–0.025
	(0.023)	(0.028)	(0.019)
Mask helps	–0.050	–0.053	0.010
	(0.031)	(0.037)	(0.023)
Can still pass COVID after vaccine	0.002	0.028	–0.027
	(0.025)	(0.030)	(0.020)
Vaccine has side effects	0.008	–0.072**	0.007
	(0.027)	(0.031)	(0.020)
Mean	0.183	0.655	0.892
N	1,479	1,479	1,479
Controls			
TODA FE	Y	Y	Y
Demographic	Y	Y	Y
Experimental	Y	Y	Y

Notes: This table reports association between individual misinformation questions and labor supply during COVID-19 pandemic. All misinformation questions equal one for an incorrect answer, indicating misinformed belief. Hence, it equals one when answered Yes to incorrect statements and No to correct statements. Questions in bold are wrong statements and the rest are true statements. All specifications control TODA fixed effects and the set of demographic and experimental variables, reported in Table 2. Robust standard errors are used. A */**/*** indicates significance at the 10/5/1% levels.