Threat on Society or Health?
How Different Framing of Covid-19 Affects People's Willingness to Give Money and Time*
사회 또는 건강에의 위협?
코비드19의 프레이밍이 사람들의 돈과 시간의 기부의사에 미치는 영향에 관한 연구

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As the coronavirus outbreak spreads, the pandemic has affected every region of the world, and its impacts are multi-fold; economic, political, and social. This research investigates how Covid-19 influences individuals' prosocial intentions and behaviors through a random experiment and analysis of field data from a crowdfunding platform. When Covid-19 is described as a disease impacting society (vs. individual's health), people perceive its threat more severely. We find that participants' age moderates this relationship between Covid-19 descriptions and perceived severity. While perceived severity linearly increases with age in the health perspective condition, it does not vary by age in the social perspective condition. More importantly, this increased perception of Covid-19 severity subsequently leads to a higher willingness to help others with money (i.e., donation) but not with time (i.e., volunteering). We use a difference-in-difference approach using large data from a loan-based crowdfunding platform, Kiva, and find that projects with society-related words yield higher funding success rates than those with health-related words after Covid-19. Our results suggest that highlighting the social aspect of Covid-19 rather than health-related issues would be a more effective communication strategy for encouraging prosocial behaviors.

Key Words: Covid-19, Prosocial Behaviors, Perceived Severity, Age Difference, Multi-methods Approach, Text Analysis

Ⅰ. Introduction

Since its outset, the coronavirus (hereafter, Covid-19) pandemic has severely affected every aspect of our lives. As of January 29, 2022, 370,103,175 people have been infected, and the death toll due to Covid-19 reached 5,667,005 (Worldometer, 2022). Covid-19's impact, however, is not limited just to the health domain. It is severely disrupting the global economy. Millions of workers permanently lost their jobs after the outbreak. With the activation of vaccine access and policy support, the global economy is gradually recovering (International Monetary Fund, 2021). However, the global economy is still difficult to overcome uncertainty. According to the World Bank 2021 Report, the global economy is expected to grow 5.9% in 2021 and 4.9% in 2022, down 0.1% points from the July forecast. This unprecedented outbreak has also affected our society broadly. According to recent statistics (e.g., Carnegie Endowment, 2022), Covid-related anti-government protests have erupted in 25 countries since March 2020. Most countries have witnessed chaos in their medical as well as education systems. Covid-19 poses enormous health, economic, and social challenges to the entire world population in a nutshell.

Although this pervasiveness distinguishes Covid-19 from other previous outbreaks such as Ebola and SARS, a high level of uncertainty is another important characteristic of Covid-19. No countries, research institutions, or scientists so far have successfully tackled this pandemic either medically or socially. No one knows how long this pandemic would persist. We know for sure that nobody is free from Covid-19's threat ranging from infection to financial hardship. Consequently, people are becoming more and more cautious in their activities and spending. People have focused on what is deemed essential while avoiding using their resources (e.g., time and money) for non-essential areas such as charitable giving. For instance, a recent survey shows that 14% of Baby Boomers and 25% of Gen Xers will decrease their donations (Fidelity Charitable, 2020). This trend will likely last until a breakthrough in developing a preventive vaccine and treatment is made. Although the sheer number of people in need of help has increased and will be likely to continue to increase, many people seem to be reluctant to extend a helping hand due to the high level of uncertainty and increased risk of financial distress caused by the Covid-19 pandemic. For example, New York Times reported that more than 40% of the 165,000 coronavirus-related campaigns posted on GoFundMe from March to August 2020 received no donations at all (Ovide, 2021). How could non-profit organizations respond to these challenges posed by Covid-19 and encourage people

to help others in difficult times? The current research aims to address this issue.

The objective of the current research is to examine how presenting Covid-19 information from different perspectives influences people's prosocial intentions and behaviors. We propose that highlighting Covid-19's impact on society rather than on health would disproportionately increase perceived severity and influence an individual's willingness to donate money. Further, this effect would be conditional on the participants' age. Across two studies, we tested our propositions. The results of our experiment and secondary data analysis show a pattern consistent with our hypotheses. The rest of the paper is organized as follows. We first review prior literature on prosocial behavior and Covid-19 to develop our hypotheses. Then we present two empirical studies we conducted to examine our hypotheses. Finally, theoretical and practical implications are discussed to conclude the paper.

II. Theoretical background

2.1 Prosocial Behavior and Covid-19

Prosocial behavior refers to any voluntary behavior to benefit others, which encompasses a wide range of behaviors such as helping, comforting, and sharing (Batson et al., 1981;

Batson, 1987). Since prosocial behavior is inherently costly to the individual who performs the action, many researchers have long sought to understand why people are engaged in this costly behavior to help others. So, early research effort has been focused on diverse motives that lead to prosocial behaviors (e.g., Andreoni, 1990; Kahneman & Knetsch, 1992; Frey & Goette, 1999; Gneezy & Rustichini, 2000; Ariely et al., 2009). For example, researchers found that financial incentives such as tax benefits enhance an individual's prosocial intention (Frey & Goette, 1999; Gneezy & Rustichini, 2000) while non-financial motives such as self-image enhancement (Ariely et al., 2009; White & Peloza, 2009) or the need for moral satisfaction (Andreoni, 1990; Kahneman & Knetsch, 1992) also play an important role in prosocial behavior. Another line of research has been focused on how recipients' traits influence an individual's prosocial intention (Jenni & Loewenstein, 1997; Kogut & Ritov, 2005; Kogut & Ritov, 2007; Jenq, Pan, & Theseira, 2015). For instance, prior research shows that people are more willing to help those who are attractive (Jenq et al., 2015), in-group members (Kogut & Ritov, 2007), singles (Kogut & Ritov, 2005), or identified (Jenni & Loewenstein, 1997).

The extant literature also shows that an individual's prosocial behavior is heavily dependent on message framing (White & Peloza, 2009; Ceylan & Hayran, 2021; List et al.,

2021). For example, people are more likely to donate when they see a message that emphasizes the impact their actions will have on the society than it does to emphasize the direction in which society will improve (List et al., 2021). Specifically, people donated more when the message was focused on the self (e.g., "Warm Your Heart") than others (e.g., "Make Alaska Better") when solicited to donate to Alaska. However, self-focused messages are not always effective in inducing prosocial behavior. People have a desire to positively build their self-public image by volunteering or donating. Therefore, in public situations, other-focused messages have more influence than self-focused messages. More specifically, White and Peloza (2009) divided the messages that encourage students to volunteer into other-benefit appeals (e.g., help make the community a better place for everyone) and self-benefit appeals (e.g., build your resume by developing and practicing job skills). Other-benefit messages were more effective in public conditions, while self-benefit messages were more effective in private conditions. Recently, Ceylan and Hayran (2021) examined effective messages that cause people to help after Covid-19. The authors revealed that after Covid-19, it is more effective when it focused on prosocial appeals rather than self-interested appeals. Since COVID-19 has a highly contagious characteristic, individual prevention is important, but social prevention such as social distancing

also has important characteristics. The prosocial appeal works more effectively than self-interested appeal because it evokes the importance of people's community quarantine activities.

We argue that people's helping behavior will vary depending on whether the Covid-19 message focused on society or individual health. A social-focused message will be more effective in triggering people's helping behavior than an individual's health-focused message. And this effect will be moderated by the observer's age due to the characteristics of the virus. Scientists have identified two key features of Covid-19: high transmissibility and low fatality rate (Hao et al., 2020; Ioannidis, 2020). According to epidemiologists, the basic reproduction number (R0) of Covid-19 is much higher (3.54) than that of severe acute respiratory syndrome (SARS) or Middle East respiratory syndrome (MERS) (Hao et al., 2020). In contrast, the infection fatality rate is much lower (median 0.26%) than that of the above counterparts (Ioannidis, 2020). In addition, research shows that the fatality rate of older adults is six times higher than that of younger people (median of 0.04% vs. 0.25%). This means that younger people are much less vulnerable to Covid-19 than older people. This low fatality rate and the low risk of complications have led young people to perceive Covid-19 not as seriously as older people do (Gunia, 2020), which has incurred costs

to our society because they can still spread the virus covertly. Therefore, emphasizing Covid-19 as a threat to individual health is not effective in making young people take the disease seriously compared to older people.

From this perspective, a message strategy focusing on Covid-19's health impact seems not very persuasive for young people. Therefore, we argue that a message focusing on Covid-19's social impact would be more effective than a health-focused message because it directs people's attention to others, not just to the self. Thus, we propose that, when a Covid-19 description highlights its impact on individuals' health, younger people would not perceive Covid-19 as severely as older people do. However, when a Covid-19 description highlights its impact on society, perceived severity would be equally high for all age groups. This reasoning led to the following hypotheses.

Hypothesis 1a: Younger people would perceive Covid-19 more severely when the description of Covid-19 is focused on its social (vs. health) impact.

Hypothesis 1b: Older people would perceive Covid-19 equally severely independent of its focus.

2.2 Time vs. Money

Although both time and money can be used as resources for helping others such as volun-teering or donation amounts, previous studies have shown that time and money are perceived differently by people (Okada & Hock, 2004; MacDonnell & White, 2015). Time is perceived as an ambiguous and flexible resource due to its variable valuation (Okada & Hoch, 2004). Whereas, money is perceived as a specific and fixed resource due to its consistent valuation over time (MacDonnell & White, 2015). Since there is a clear difference in recognizing the two resources, the selected resources may be different depending on when to help others. Song and Kim (2020) revealed that when people plan to help others in the near future, they tend to donate money, a resource that has more specific characteristics. Whereas, when they plan to help others in the distant future, they choose to volunteer, a resource that has more ambiguous characteristics when they help others in the far future. It is consistent with construal level theory (Liberman et al., 2007; Trope et al., 2007), and implies that the selection of resources is affected by psychological distance. In the near future, people tend to choose a specific resource, money, whereas, in the distant future, they choose a relatively ambiguous resource, time.

According to prior research, people tend to prefer donating their time over donating money (Liu & Aaker, 2008; Brown et al., 2019). Practically, from the perspective of charities, large donations amounts are more helpful than volunteer activities. Nevertheless, many peo-

ple tend to prefer to donate their time (Brown et al., 2019). The authors explained that donating time provides individuals with greater psychological benefits, such as moral satisfaction or warm-glow, compared to donating money. In a similar vein, Liu and Aaker (2008) showed that when participants are asked how much time they will donate, their emotional mindset is more active, giving them a positive feeling of happiness, while when they are asked how much money they will donate, their value maximization mindset is activated, focusing on the currency rather than on personal satisfaction. Ultimately, rather than focusing on the value of money, an individual's positive emotions have a more positive effect on the actual amount of donation.

However, we expect that the more people feel serious about Covid-19, the more they will be inclined to donate money rather than time. Specifically, we propose that the salience of Covid-19 would influence an individual's willingness to donate time and money differently. Prior literature in evolutionary psychology suggests that disease-related threats could influence people's intention to seek the company of others (e.g., Griskevicius & Kenrick, 2013; Schaller, 2016). Schaller (2016) argued that humans have evolutionarily developed a psychological safety-seeking mechanism to avoid infectious diseases. Thus, when a disease cue is present, the psychological behavioral immune system (hereafter BIS) triggers

the disease-avoidance motives, emotions, cognitions, and behaviors. For instance, if a person suspects that other individuals could be potential carriers of infection, s/he would feel fear, worry about infection, and distance herself/himself away from them.

Importantly, the BIS is so oversensitive that, if an individual is concerned about disease, s/he is more likely to avoid even other non-infected individuals (Sacco et al., 2014). Based on this, we argue that when Covid-19 is perceived as severe, people would be reluctant to be in the company of others, and thus would be less willing to volunteer their time. In contrast, people's willingness to donate money would not vary by perceived severity because donating money does not require an individual to be in the company of others (i.e., no conflict with the BIS). This reasoning led to the following hypotheses.

Hypothesis 2a: Perceived Covid-19 severity would mediate the interactive effect of Covid-19 focus and age on the willingness to donate money

Hypothesis 2b: Perceived Covid-19 severity would not mediate the interactive effect of Covid-19 focus and age on the willingness to volunteer time.

We test our hypotheses with a controlled experiment and secondary data analysis.

III. Study 1

The goal of study 1 is to examine our hypotheses in a controlled experiment. We test if people are more likely to donate money but not volunteer time when Covid-19's social (vs. health) impact is made salient. To test this hypothesis, we manipulated Covid-19's salience with two versions of Covid-19 articles.

3.1 Method

3.1.1 Participants and design

A total of 200 U.S. adults (Female = 52%, Mage = 39.55, SD = 12.873) were recruited through Amazon's mTurk. Participants were randomly assigned to one of the two experimental conditions (Covid-19 Focus: Social Focus vs. Health Focus). We administered the study online using Qualtrics software. No participants were excluded from the analysis. Additional demographic data and descriptive statistics are provided in ⟨Table 1⟩.

3.1.2 Procedure

Participants first read the online informed consent form and indicated their willingness to participate in the study. They were also asked to check a CAPTCHA box (Von Ahn et al., 2003) to ensure that they are not bots but human participants. On the next page, participants were informed that they would participate in two unrelated short studies. In the first part of the study, participants were presented with one of the two articles about Covid-19. Each article describes Covid-19's impact from different perspectives. Specifically, those in the Health Focus condition read about how Covid-19 influences their health by affecting many organs. In contrast, those in the Social Focus condition read about how Covid-19 influences society by affecting many groups of people (see Appendix A). After reading an article, participants responded to the two items designed to measure perceived Covid-19 severity on 9-point scales ("How likely would you be affected by Covid-19?", 1=very unlikely, 9=very likely, "How serious would the impact of Covid-19 be?", 1=not at all serious, 9=very serious; Cronbach's alpha =.682).[1]

Then, participants were informed that the first study was completed. Following this message, the next part of the study was introduced as an unrelated second study. Participants

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[1] Two points are worth mentioning. First, some may point that question wording of these two items are ambiguous – we did it with intention. For the first question, we used the word 'affected' rather than 'infected' to prevent participants from interpreting this question only from the health perspective. Likewise, we did not specify the object of Covid-19's impact in the second question for the same reason. By adding some degrees of ambiguity to these questions, we aim to lead the participants in the social-focus condition to consider these questions from the social perspective, and those in

〈Table 1〉 Sample demographics (n = 200)

Characteristics		Frequency	Percent
Gender	Female	104	52%
	Male	96	48%
Age	18-30	54	27%
	31-40	72	36%
	41-50	28	14%
	51-60	29	14%
	〉60	17	8%
Marital	Married	90	45%
Status	Widowed	5	2%
	Divorced	16	8%
	Separated	3	1%
	Never Married	86	43%
Religion	Christian	67	33%
	Catholic	35	17%
	Jewish	3	1%
	Islamic/Muslim	1	0.5%
	Hindu	1	0.5%
	Buddhist	2	1%
	No religion (includes atheist, agnostic)	86	43%
	Other	5	2%
Political	Republican	51	25%
Affiliations	Democrat	84	42%
	Independent	54	27%
	Other	6	3%
	No preference	2	1%

were presented with a fictitious non-profit advertisement that solicits help for the homeless (see Appendix B). The advertisement shows a picture of a man serving meals to the homeless along with the following copy - "In times of difficulty, we need your help more than ever! Feed the homeless in your town! Any help will be appreciated (e.g., time, money, etc.)." Then, participants were asked to indicate their willingness to donate money ("How

the health-focus condition from the health perspective. Second, these two items seem to measure two different constructs: the first item measures the likelihood of being affected by Covid-19 while the second item measures the degree of seriousness of Covid-19's impact. The relatively lower reliability score (.682) partly supports the idea, too. However, we chose to use these two seemingly disparate items to measure Covid-19's severity based on our reasoning that participants would estimate the severity of Covid-19 using the following formula: (Probability) x (Impact). As people may differ in their estimation for each, we measured each component separately and combined them later. Despite the potential shortcomings, we believe that considering these two items combinedly provides us with a more precise picture of what effects operate here. Moreover, when we analyzed the data using two items separately, results did not change (please see footnote 2).

much would you be willing to donate your money to help the homeless?", 1=not at all, 9=very much) and the actual amount of money they want to donate ("How much money would you like to donate($)?"). Participant's willingness to volunteer time and the specific number of hours to volunteer were measured in a similar manner ("How much would you be willing to volunteer your time for serving meals to the homeless?", 1=not at all, 9=very much; "How many hours would you like to volunteer?"). The question order was counterbalanced such that half of the participants responded to the money questions before the volunteer questions while the other half responded in reverse order. Our analysis shows that the question order does not interact with our manipulated variable (i.e., Covid-19 Focus). Thus, we collapsed the data across the question order.

Finally, participants answered several demographic questions, including gender, marital status, religion, political affiliations, and age. Previous research shows that people are more likely to help others when their mortality is made salient (Jonas et al., 2002; Zaleskiewicz et al., 2015). Given the possibility that exposure to Covid-19 information could make mortality salient, we measured participant's mortality salience ("While you were reading the Covid article, did you ever think about death?" 1=not at all, 9=very much) to control for its effect on our dependent variables. We predicted that perceived Covid-19 severity would vary by age in the Health Focus condition while it would not differ by age in the Social Focus condition. Further, we expected? this increased perceived severity to mediate the effect of Covid-19 Focus on the willingness to donate money (but not volunteer time). The descriptive statistics of the answers to all questions are shown in ⟨Table 2⟩.

⟨Table 2⟩ Statements

| Statement	Mean	Std. deviation
How likely would you be affected by COVID-19?	5.5	2.01
How serious would the impact of COVID-19 be?	6.52	2.17
How much would you be willing to donate your money to help the homeless?	5.4	2.52
How much money would you like to donate ($)?	27.82	59.32
How much would you be willing to volunteer your time for serving meals to the homeless?	5.13	2.60
How many hours would you like to volunteer?	4.857	9.57
While you were reading the COVID article, did you ever think about death?	5.105	2.60

3.2 Results

3.2.1 Perceived Covid-19 severity

When we ran a 2x2 ANOVA with perceived severity of Covid-19 as the dependent variable, the result showed that those in the Social Focus condition perceived Covid-19 more severely (M_{Social} = 6.46, SD_{Social} = 1.64) than those in the Health Focus condition (M_{Health} = 5.57, SD_{Health} = 1.90, $F(1, 198)$ = 12.55, $p \langle$ 0.001). In contrast, when we ran the same ANOVA with mortality salience as the dependent variable, the difference between the two conditions was not significant (M_{social} = 5.15, SD_{social} = 2.38, M_{Health} = 5.06, SD_{Health} = 2.83, $F(1, 198) \langle 1$), suggesting that participants in both conditions did not differ from each other regarding the degree to which the concept of death was salient in their minds. Thus, any subsequently observed difference in participants' willingness to help others (either with money or time) should be attributed to a different factor, not their mortality salience.

3.2.2 Moderating role of age

To test the moderating role of age in the relationship between Covid-19 Focus and Perceived Covid-19 Severity (H1a & H1b), we regressed Perceived Covid-19 Severity on Covid-19 Focus (0 = Health Focus, 1 = Social Focus), participant's age, and their interaction (PROCESS model 1; Hayes, 2018). The results yielded a significant main effect of Covid-19 Focus (β = 2.57, SE = .80; $t(196)$ = 3.20, p = 0.02), a significant main effect of Participant's Age (β = 0.4, SE = .01; $t(196)$ = 2.70, p = 0.08), and a significant interaction effect of Covid-19 Focus and participant's Age (β = -0.4, SE = .02; $t(196)$ = -2.18, p = 0.3).[2] Additionally, a floodlight analysis using the Johnson-Neyman technique (Spiller et al., 2013) showed that participant's Perceived Covid-19 Severity in the Social (vs. Health) Focus condition was significantly higher at the age levels smaller than 47.41 (BJN = .57, SE = .29, p = .05; see 〈Figure 1〉). The difference between the two conditions, however, became nonsignificant at the age level greater than 47.41. This result indicates that

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2) When we conducted the same analyses for each of the two items separately, results barely changed. Specifically, when we regressed the likelihood of being affected by Covid-19 (i.e., the first item) on the same independent variables and their interaction term, the results yielded a significant main effect of Covid-19 Focus (β = 2.64, SE = .89; $t(196)$ = 2.97, p = 0.03), a significant main effect of Participant's Age (β = .03, SE = .02; $t(196)$ = 2.26, p = 0.25), and a marginally significant interaction effect of Covid-19 Focus and participant's Age (β = -.04, SE = .02; $t(196)$ = -1.95, p = 0.53). For the second item only, results were basically identical; a significant main effect of Covid-19 Focus (β = 2.49, SE = .97; $t(196)$ = 2.57, p = 0.11), a significant main effect of Participant's Age (β = .01, SE = .02; $t(196)$ = 2.39, p = 0.18), and a marginally significant interaction effect of Covid-19 Focus and participant's Age (β = -04, SE = .02; $t(196)$ = -1.81, p = 0.71). Thus, we report the results using the composite measure hereafter.
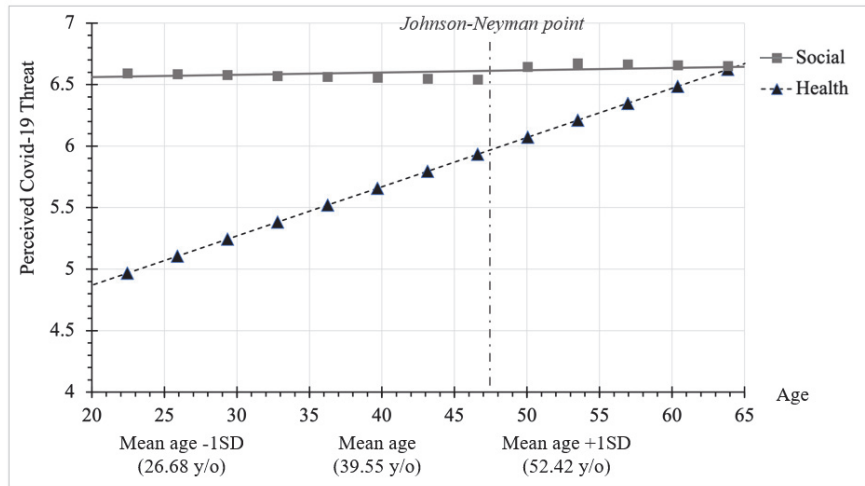
〈Figure 1〉 Perceived Covid-19 threat by Covid-19 focus and age

those younger than 47 years old (i.e., $age <$ $M_{age} + .61SD_{age}$) tend to perceive Covid-19 more severely when the description of Covid-19 is focused on its social rather than health impact. In contrast, those older than 48 years old (i.e., $age > M_{age} + .61SD_{age}$) perceive Covid-19 equally severely regardless of the focus of Covid-19's impact (See 〈Figure 1〉 above). Together, these results support our H1a and H1b that participant's age moderates the effect of Covid-19 Focus on Perceived Covid-19 Severity.

3.2.3 Moderated Mediation

Having established that Age moderates the Covid-19 Focus' impact on Perceived Covid-19 Severity, we go on to test if Perceived Covid-19 Severity would mediate the interactive

effect of Covid-19 Focus and Age on the willingness to donate money (H2a) and the willingness to volunteer time (H2b). We predicted that this moderated mediation effect would be observed only in the money domain (H2a) but not in the time domain (H2b). To test these hypotheses, we performed a moderated mediation analysis using the bootstrapping method with Covid-19 Focus as an independent variable, Perceived Covid-19 Severity as a mediator, participant's Age as a moderator, and the willingness to donate money (for H2a) and the willingness to volunteer time (for H2b) as a dependent variable, respectively (PROCESS model 7; see 〈Figure 2〉). The results showed that the direct effect of Covid-19 Focus on the willingness to donate money was not significant ($\beta = -.19$, $SE = .35$, $t = -.55$, $p = .55$). However, the conditional indirect effect
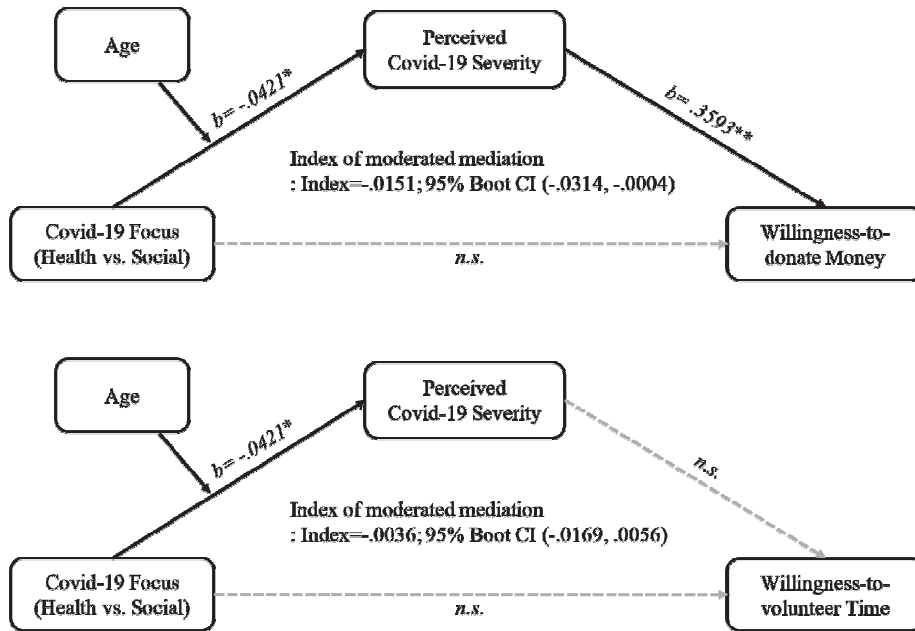
⟨Figure 2⟩ Moderated mediation

of Covid-19 Focus and Age on the willingness to donate money through Perceived Covid-19 Severity was significant at the .05 level (β = -.01, *BootSE* = .008, 95% *CI*(-.0314, -.0004). In contrast, neither the direct (β = .30, *SE* = .38, *t* = .79, *p* = .43) nor the conditional indirect effects were significant for willingness to volunteer time (β = -.003, *BootSE* = .005, 95% *CI*(-.0169, .0056). These results are consistent with our prediction and thus support H2a and H2b.

Additionally, following the suggestions by Zhao, Lynch, and Chen (2010), we tested whether the interaction of Covid-19 Focus and Age directly influence participants' willingness to donate money and willingness to volunteer time. Neither of the effects appeared significant (all p's ⟩.185), suggesting that our effect is the 'indirect-only' mediation (please see ⟨Figure 2⟩ in Zhao et al., 2010).

3.3 Discussion

Study 1 showed that the degree to which people perceive Covid-19's severity is influenced by the way it is described. People perceived Covid-19 more severely when its social than health impact was highlighted. Additionally, our results showed that this effect is moderated by the participant's age. When Covid-19's impact was described with a focus on health, the perceived Covid-19 se-

verity increased with age. However, when Covid-19's impact was described with a focus on society, perceived Covid-19 severity did not vary by age. Importantly, the younger people perceived Covid-19 more severely when the description of Covid-19 was focused on its social rather than health impact, while the older people perceived Covid-19 equally severely independent of the focus. Further, our results showed that this increased perception of Covid-19 severity mediates the effect of Covid-19 focus on the willingness to donate money. However, we did not find the same mediation for the willingness to volunteer time.

It is noteworthy that the context for prosocial behavior we employed in study 1 (i.e., serving the homeless) was irrelevant to the Covid-19 situation. That is, the effect of increased perception of Covid-19 severity was carried over to unrelated prosocial domains. Given that there exists no direct link between Covid-19 and the homeless, our result suggests that the impact of Covid-19 may extend beyond context-specific domains to much broader areas. Taken together, study 1 provides initial evidence for our hypotheses.

IV. Study 2

The objective of study 2 is to investigate if our findings in study 1 can be replicated with field data. We collected large-scale field data (n=175,318) from Kiva.org, one of the largest prosocial lending platforms, to test our hypotheses. As the Covid-19 pandemic created appropriate circumstances for a natural experiment, drawing on the timeline of its outbreak (i.e., before and after Covid-19) and the description of microlending posting as factors, we test our hypotheses.

4.1 Empirical Setting

Kiva.org is a lending-based crowdfunding platform founded in 2005. Kiva's mission is to expand financial access to help those who are financially excluded and do not have access to other affordable credit sources. Headquartered in San Francisco, Kiva operates in more than 80 countries on five continents. Compared to many other lending platforms, collaboration with field partners is a special feature of Kiva. The role of the field partner is to establish a regional presence and advance funds to lenders before posting the loan request on the Kiva platform, allowing lenders to preoccupy entrepreneurial ventures. To date, Kiva has provided over 1.5 billion dollars in loans to the crowd, and the historical repayment rate is 96.0%. Potential borrowers submit requests for a loan with help from a local field partner for a specific amount along with the description of the project on the Kiva platform. After browsing through the projects

posted on Kiva.org, lenders consider the characteristics of the borrower and the project such as gender, residential country, repayment terms, and intended use of the money, and then decide to contribute $25 or more to a preferred project. If a project fails to reach the goal within a prespecified deadline (typically 30 days), the borrower ends up receiving nothing.

4.2 Data

We retrieved our data from Kiva's public API (Yoo et al., 2022a; Yoo et al., 2022b). The funding start date of the projects spans from August 01, 2019, to August 31, 2020. The date was selected based on the six months before and after Covid-19 was declared a public health emergency of international concern by the World Health Organization (WHO) on January 30, 2020 (World Health Organization, 2020). We aim to examine whether lenders commit more to social-focused projects than to health-focused ones after Covid-19. In our dataset, 71,073 out of 175,318 projects were posted after the Covid-19 declaration. We deleted 4,578 projects that mention the word Covid-19 in the project description after the Covid-19 outbreak. We predict that there will be no significant difference in funding success between the social- and health-focused projects before the Covid-19 outbreak and that social-focused projects will have better funding performance than health projects after the pandemic.

4.2.1 Dependent Variable

Our dependent variable, Funding Success, is a binary indicator that takes the value 1 if a project succeeded in funding by reaching the goal amount the borrower set and 0 otherwise.

4.2.2 Independent Variables

We created two key indicator variables, Time and Project type. Time would take the value of 1 if the project posting date was later than January 30, 2020, and 0 otherwise. We used Linguistic Inquiry and Word Count (LIWC) to classify the projects into social- vs. health-focused ones. LIWC is a lexicon-based method for sentiment classification, and this text analysis program automatically classifies unstructured text into predefined psychology-related categories (Pennebaker et al., 2015). Potential lenders can read long and extensive descriptions of a project. We extracted all the words used in the long description of the projects and counted the number of words belonging to each of the sub-categories of LIWC, affiliation or health of LIWC. After making the difference between the values of affiliation and health, we generated a dummy variable (i.e., Project type) classified as 'social' if the difference is greater than 0, 'health' if it is less than 0, and 'else' otherwise. Description of the variables used in the model and the summary statistics along with corre-

lation matrix are presented in 〈Table 3〉 and 〈Table 4〉.

4.2.3 Control Variables

We included the characteristics of the loan applicants as controls; the borrower's *gender*, whether the borrower is a single person or a *group* of people, and the borrower's *country* of residence. 74% of the projects involved at least one female borrower, reflecting the fact that the main targets of microfinance programs are women. There are sixty-six countries with the highest number of projects coming from the Philippines (24%). The characteristics of the projects are included, too. Kiva allocates each project into one of the fifteen sectors (*sector*), and in our data, 30% are classified as Agriculture, 18% as Food, and 15% as Retail.

Borrowers are asked to write two descriptions of his/her project, a short description being displayed in the Kiva's main webpage and a long description only in the specific project webpage. *Short description word count* and *long description word count* are the numbers of characters in the descriptions. We also controlled *target loan amount,* a goal amount for the project, *repayment term,* the promised payback duration, and *repayment interval,* the frequency/interval of repayment (e.g, at the end or term, irregularly, or monthly). Loans at Kiva are made in US dollars, but field partners disburse to and receive repayment from borrowers in local currency, creating a risk due to currency exchange rate change (*currency*). The field partners decide whether to take the full risk or share it with the lenders.

〈Table 3〉 List of variables

Variables	Range or Levels	Mean (Std. dev) or Percentage
Funding success*	Yes / No	Yes (98%, n=168,256), No (2%, n=2,484)
Time*	Before Covid-19 / After Covid-19	Before Covid-19 (61%), After Covid-19 (38%)
Project type*	Social / Health / Else	Social (77%), Health (7%), Else (14%)
Target loan amount	$25 ~ $100,000	739.60 (1,208.28)
Repayment term	3 months ~ 144 months	13.39 (6.67)
Repayment interval*	At end of term / Irregularly / Monthly	At end of term (12%), Irregularly (4%), Monthly (83%)
Long description word count	10 words ~ 288 words	108.80 (40.83)
Short description word count	1 word ~ 40 words	11.94 (5.83)
Gender*	Female / Male / Mix	Female (74%), Male (19%), Mix (5%)
Group*	Single / Group	Single (88%), Group (11%)
Currency*	None / Shared	None (60%), Shared (39%)
Country*	66 countries	Philippines (24%), Kenya (15%), Uganda (4%)
Sector*	15 sectors	Agriculture (30%), Food (18%), Retail (15%)

* : categorical variables.

〈Table 4〉 Summary statistics and correlation matrix

Variable	Mean	Std. dev	VIF	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Funding success	0.985	0.119														
2 Time (After Covid-19)	0.389	0.487	1.216	**0.070**												
3 Project type (health)	0.07	0.271	1.176	-0.014	0.011											
4 Project type (else)	0.148	0.355	1.091	0.000	-0.003	**-0.123**										
5 Target loan amount	739.60	1,208.28	1.403	**-0.056**	-0.012	-0.001	-0.046									
6 Repayment term	13.39	6.67	2.552	**-0.076**	0.017	0.054	-0.010	**0.124**								
7 Repayment interval (irregularly)	0.044	0.206	2.268	-0.004	0.052	0.005	0.004	**0.081**	**0.229**							
8 Repayment interval (monthly)	0.835	0.362	4.123	0.002	-0.053	0.030	0.058	**-0.034**	**-0.032**	**-0.502**						
9 Long description word count	108.80	40.83	1.650	-0.014	-0.019	0.031	**-0.116**	**0.200**	**0.123**	0.054	**-0.118**					
10 Short description word count	11.94	5.83	1.521	-0.014	0.004	0.007	-0.032	-0.038	0.029	0.045	**-0.158**	**0.252**				
11 Gender (male)	0.194	0.396	1.721	**-0.091**	0.009	0.041	0.008	-0.005	**0.128**	0.094	**-0.229**	0.023	0.033			
12 Gender (mix)	0.055	0.229	4.059	-0.011	-0.025	-0.058	-0.043	**0.209**	**-0.110**	0.007	**-0.234**	**0.141**	-0.012	**-0.119**		
13 Group (group)	0.112	0.315	5.803	-0.005	-0.026	-0.080	-0.014	**0.331**	**-0.195**	0.023	**-0.213**	**0.179**	-0.035	**-0.145**	**0.682**	
14 Currency (shared)	0.396	0.489	1.550	**-0.118**	**-0.215**	-0.042	0.008	-0.018	-0.007	0.040	**-0.249**	0.066	0.086	0.096	**0.164**	**0.209**

Note: Correlations in bold are statistically significant at the $p < .05$ level.

4.2.4 Model

We use a logit regression model with the following specification:

$$log_{it}\{P(Y_i = 1 | T_i + D_i + T_iD_i + X_i + \epsilon_i)\}$$
$$= \beta_0 + \beta_1 T_i + \beta_2 D_i + \beta_3 T_i D_i + \beta_4 X_i + \epsilon_t$$

where T_i and D_i are dummy variables that denote whether the time period belongs to "after" the Covid-19 outbreak and the project type (i.e., social, health, else), respectively. X_i denotes the control variables. $T_i D_i$ is an interaction between the time period and the project type. ϵ_i is the error term.

4.3 Results

The estimation results from the logit models are displayed in ⟨Table 5⟩. Model 1 includes only the control variables; two main variables are included in model 2; model 3 is the full model with two-way interaction. There is a significant negative two-way interaction effect between Time and Health-focused project (β = -0.792, p ⟨ 0.001, see model 3 in ⟨Table 5⟩). After the outbreak of Covid-19 the funding success rates for health-focused projects is lower than that of reference group (i.e., social-focused project). Next, we applied the Johnson-Neyman technique to examine if there is a statistical difference in funding success rates by health-focused projects depending on the

Time (Spiller et al. 2013). Before the outbreak of Covid-19, there is no statistical difference in funding success rates between health projects and reference group (i.e., social-focused project), but after the outbreak of Covid-19, there is a statistical difference in funding success rates between health projects and reference group (i.e., social-focused project) (β = -0.843, p ⟨ 0.001). In other words, health-focused projects have lower funding success rates than social-focused projects after Covid-19. The main effect of Time is also significant in that the success rate of funding at Kiva is further raised after the Covid-19. With regard to the control variables, the results show that the target loan amount, repayment term, and currency have adverse effects on funding success. Female borrowers are more likely to get funded. The success rate also varied significantly across the borrowers' residential countries and the sectors to which the projects belong. As a robustness check, we created a subset by randomly selecting 2484 projects that were successfully funded and keeping all 2484 projects that failed (King & Zeng, 2001). The estimation results from this under-sampled data are presented in the ⟨Table 6⟩.

4.4 Discussion

After Covid-19, lenders are more likely to fund social projects rather than health projects. Although we were not able to run an exact

〈Table 5〉 Estimation coefficients from the logit model

Variables	Model		
	(1)	(2)	(3)
Time		0.941***	1.066***
		(0.074)	(0.089)
Project type_Health		-0.151	-0.051
		(0.080)	(0.086)
Project type_Else		-0.082	-0.066
		(0.065)	(0.068)
Time * Project type_Health			-0.792***
			(0.182)
Time * Project type_Else			-0.184
			(0.199)
Target loan amount	-0.109***	-0.105***	-0.106***
	(0.033)	(0.033)	(0.033)
Repayment term	-0.065***	-0.069***	-0.069***
	(0.004)	(0.004)	(0.004)
Repayment interval_Irregularly	-0.350*	-0.298	-0.289
	(0.177)	(0.177)	(0.177)
Repayment interval_Monthly	-1.135***	-1.000***	-0.991***
	(0.135)	(0.133)	(0.133)
Long description word count	0.004***	0.004***	0.004***
	(0.001)	(0.001)	(0.001)
Short description word count	0.016***	0.016***	0.015***
	(0.005)	(0.005)	(0.005)
Gender_male	-1.572***	-1.581***	-1.580***
	(0.056)	(0.056)	(0.056)
Gender_mix	-0.810***	-0.784***	-0.780***
	(0.165)	(0.167)	(0.167)
Group_group	-0.185	-0.156	-0.150
	(0.156)	(0.158)	(0.158)
Currency_shared	-3.010***	-2.696***	-2.705***
	(0.075)	(0.079)	(0.079)
Country	Yes	Yes	Yes
Sector	Yes	Yes	Yes
Number of observations	170,740	170,740	170,740
-2(log-likelihood)	17,479	17,289	17,273
AIC	17,657	17,473	17,461
BIC	18,551	18,397	18,406
pseudo-R^2	0.34	0.35	0.35

*** p < .001 ** p < .01 * p < .05

Notes: The dependent variable is a dummy variable with a value of one if the loan is successfully funded and zero otherwise (i.e., expired). Robust standard errors are in parentheses.

〈Table 6〉 Estimation Results (Undersampled Subset)

Variables	Model		
	(1)	(2)	(3)
Time		1.109***	1.205***
		(0.140)	(0.156)
Project type_Health		0.039	0.216
		(0.167)	(0.183)
Project type_Else		0.129	0.144
		(0.140)	(0.154)
Time * Project type_Health			-0.856*
			(0.349)
Time * Project type_Else			-0.116
			(0.341)
Target loan amount	-0.353	-0.320	-0.322
	(0.504)	(0.511)	(0.513)
Repayment term	-0.127***	-0.131***	-0.131***
	(0.019)	(0.020)	(0.020)
Repayment interval_Irregularly	-0.199	-0.274	-0.274
	(0.350)	(0.366)	(0.367)
Repayment interval_Monthly	-1.068***	-1.014***	-1.006***
	(0.251)	(0.257)	(0.257)
Long description word count	0.003	0.003	0.003
	(0.002)	(0.002)	(0.002)
Short description word count	0.043***	0.040***	0.040***
	(0.009)	(0.009)	(0.009)
Gender_male	-1.828***	-1.906***	-1.904***
	(0.129)	(0.133)	(0.134)
Gender_mix	-1.529***	-1.619***	-1.614***
	(0.313)	(0.327)	(0.327)
Group_group	-0.031	-0.043	-0.034
	(0.554)	(0.561)	(0.561)
Currency_shared	-3.607***	-3.178***	-3.183***
	(0.163)	(0.168)	(0.168)
Country	Yes	Yes	Yes
Sector	Yes	Yes	Yes
Number of observations	4,968	4,968	4,968
-2(log-likelihood)	3,211	3,127	3,122
AIC	3,383	3,305	3,304
BIC	3,943	3,884	3,896
pseudo-R^2	0.70	0.71	0.71

*** p < .001 ** p < .01 * p < .05

Notes: The dependent variable is a dummy variable with a value of one if the loan is successfully funded and zero otherwise (i.e., expired). We created a dataset by under-sampling (i.e., randomly selecting a subset of the projects that were successfully funded). In this data, the number of successes is 2484 successes, which matches the number of 2484 failures. Robust standard errors are in parentheses.

replica test of Study 1 due to the unavailability of lenders' age information, we found that Covid-19 salience enhances lender's funding decisions for a cause related to society than health.

Ⅴ. General discussion

5.1 Summary of Findings

Across two studies, we found corroborating results that support our hypotheses. In study 1, when we manipulated the focus of Covid-19's impact by highlighting its impact on either society or health, those exposed to the social (vs. health) impact description reported higher perceived severity. This enhanced perception of severity subsequently mediates the effect of Covid-19 on the willingness to donate money but not to volunteer time. This indirect effect of Covid-19 focus on the willingness to donate money was conditional on the participant's age. In study 2 where we examined our hypotheses with massive field data, we found that people's actual prosocial behavior exhibited a similar pattern. When we compared people's funding behavior to projects described with social-related or with health-related words, the funding success rates of social projects were significantly higher than those of health projects. However, this

pattern holds only in the dataset after (vs. before) the Covid-19 outbreak. This result lends additional support for our claim that Covid-19 salience enhances people's prosocial intention for a cause related to society than health. It is noteworthy that our results are not driven by an individual's increased mortality salience (Zaleskiewicz et al. 2015). Participants differ in their perceived Covid-19 severity by Covid-19 Focus but not in their mortality salience. This result suggests that the psychological mechanism underlying our results is entirely different from how mortality salience operates.

5.2 Theoretical Contributions and Practical Implications

Although researchers in diverse fields have investigated Covid-19 (e.g., Park et al., 2022; Lee et al., 2022), our knowledge about Covid-19 and its impact on human values and behaviors is still sparse. By delineating how Covid-19 is different from other disease-related threats, the current research contributes to the burgeoning literature on Covid-19. Additionally, by demonstrating how different Covid-19 descriptions can shape an individual's prosocial intention differently, we suggest that Covid-19 is a complex, multi-faceted construct that may have diverse impacts on various domains of human behaviors.

The current research has several practical implications on how non-profit organizations can effectively communicate with potential donors and lenders. First, we found that people's perceived Covid-19 severity was higher when the description of Covid-19 was focused on its social (vs. health) impact. Thus, non-profit organizations can create a compelling message strategy by directing people's attention to Covid-19's impact on society rather than health. Second, the results of Kiva data showed that, when Covid-19 becomes salient, people are more likely to provide monetary help for the social rather than health projects. Thus, non-profit organizations may consider putting more social-related words in their project descriptions to encourage people's pro-social behavior. Third, we found that participants' age is an important factor that influences perceived Covid-19 severity. This finding suggests that non-profit organizations can use participants' age as the basis for segmentation. Finally, our results suggest that a social-focused Covid-19 message can encourage people to donate money for causes not directly tied to the Covid-19 pandemic. Thus, non-profit organizations can consider using Covid-19 in their marketing communications for a wide range of causes.

5.3 Limitations and Future Research

Several limitations are worth mentioning.

Although we consistently found the stronger link between Covid-19 and social issue rather than health issue, we do not know yet what causes this effect. One potential explanation for our finding is that Covid-19 activates the concept of social interdependence. By testing our theorizing more directly, future research can provide more definite conclusions. In addition, the field data analysis may lead to interpretation of the estimation results which is different from the one presented in this research. Last but not least, some may think our mediational analysis for volunteering time is counterintuitive. That is, increased perceived Covid-19 severity should have resulted in participants' lower willingness to volunteer time. However, this mediation was not supported by our data. Future research may address this issue, too.

5.4 Conclusion

Covid-19 has been making tremendous impacts on all aspects of human life. No one would doubt that Covid-19 will leave a permanent trace on how we think, consume, learn, or interact with others. Despite its huge potential to reshape our lives in a variety of ways, Covid-19 has been still understudied. The current research is a small step towards a better understanding of this unprecedented disease, and we hope our research sparks further work in this area.

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〈APPENDICES〉

Appendix A. Covid-19 Articles used in Study 1

(a) Social-focused Covid-19 Stimulus

How does COVID-19 impact our society?

Social Impact of COVID-19
COVID-19 Affects Many People

We are facing a global health crisis unlike any in the 75-year history of the United Nations — one that is killing people, spreading human suffering, and upending people's lives. But this is much more than a health crisis. It is a human, economic and social crisis. The coronavirus disease (COVID-19), which has been characterized as a pandemic by the World Health Organization (WHO), is attacking societies at their core.

The COVID-19 outbreak affects all segments of the population and is particularly detrimental to members of those social groups in the most vulnerable situations, continues to affect populations, including people living in poverty situations, older persons, persons with disabilities, youth, and indigenous peoples. If not properly addressed through policy the social crisis created by the COVID-19 pandemic may also increase inequality, exclusion, discrimination and global unemployment in the medium and long term.

(b) Health-focused Covid-19 Stimulus

How does COVID-19 impact your health?

Health Impact of COVID-19
COVID-19 Affects Many Organs

CDC is actively working to learn more about the whole range of short- and long-term health effects associated with COVID-19. As the pandemic unfolds, we are learning that many organs besides the lungs are affected by COVID-19 and there are many ways the infection can affect someone's health.

One of the health effects that CDC is closely watching and working to understand relates to COVID-19 and the heart. Heart conditions associated with COVID-19 include inflammation and damage to the heart muscle itself, known as myocarditis, or inflammation of the covering of the heart, known as pericarditis. These conditions can occur by themselves or in combination. Heart damage may be an important part of severe disease and death from COVID-19, especially in older people with underlying illness. Heart damage like this might also explain some frequently reported long-term symptoms like shortness of breath, chest pain, and heart palpitations.

Appendix B. Fictitious Advertisement used in Study 1

In times of difficulty, we need your help more than ever!
Feed the homeless in your town!
Any help will be appreciated (e.g., time, money, etc.).

Appendix C. Examples of Kiva project description

(a) Social-focused project

Center 182 Uswag Himogaan Women'S Association Group's story

Estela is the President of Center 182 Uswag Himogaan Women's Association, which helps members earn a living. She has been a member of NWTF for many years and takes higher loans that help a lot in establishing and stabilizing her business.

She farms sugarcane and raises pigs. The members of the Association have banded together to earn additional income for their families while helping the community.

Estela is requesting a loan to purchase piglets, sacks of feed, vitamins, and other supplies needed to raise the pigs. She wants the group to be strong and earn profits to help their families.

Estela still continues to encourage other member of NWTF to join the group to improve their living conditions.

(b) Health-focused project

Oscar Ramon's story

Oscar is 41 years old, single, and lives with his father in Mexico City.

Years ago, his father was diagnosed with a chronic degenerative disease that has been complicating his health. For this reason, he was admitted into a private hospital where he could receive better medical care. Unfortunately, his father has limited resources and the medical expenses continue to increase. For this reason, Oscar is requesting the assistance of a loan so as not to affect his family's finances.

Oscar is confident that his father's health will improve.