Effects of perceived scarcity on COVID-19 consumer stimulus spending: The roles of ontological insecurity and mutability in predicting prosocial outcomes

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Abstract
In 2021, the United States government provided a third economic impact payment (EIP) for those designated as experiencing greater need due to the COVID-19 pandemic. With a particular focus on scarcity and ontological insecurity, we collected time-separated data prior to, and following, the third EIP to examine how these variables shape consumer allocation of stimulus funds. We find that scarcity is positively associated with feelings of ontological insecurity, which, interestingly, correlates to a greater allocation of stimulus funds toward charitable giving. We further find evidence that mutability moderates the relationship between ontological insecurity and allocations to charitable giving. In other words, it is those who feel most insecure, but perceive that their resource situation is within their control, who allocated more to charity giving. We discuss the implications of these findings for theory, policymakers, and the transformative consumer research (TCR) movement.

KEYWORDS
charitable giving, mutability, ontological security, scarcity
1 | INTRODUCTION

Individuals globally are experiencing scarcity at unprecedented levels (Hamilton, 2021), from a lack of financial resources to maintain basic needs such as housing or food to feeling strapped for time while trying to both work and care for family. While scarcity—defined as a perceived lack of resources and the feeling of having “too little” to acquire needed goods and services (Shah et al., 2012, p. 682)—has received increased attention in the consumer literature (e.g., Cannon et al., 2019; Goldsmith, Hamilton, & Griskevicius, 2020; Goldsmith, Roux, & Wilson, 2020; Park et al., 2020), the COVID-19 pandemic presents a once-in-a-lifetime opportunity to examine the complex ways in which scarcity impacts how consumers allocate their resources. Specifically, the current research examines self-reported spending behaviors resulting from the third economic impact payment (EIP) in the United States (US) distributed in the spring of 2021, delivered ostensibly with the intended purpose of alleviating experiences of scarcity.

Authorized by the American Rescue Plan Act of 2021, the third EIP was issued to US citizens and resident aliens whose adjusted gross income (AGI) was not more than $150,000 if filed jointly or as a qualifying widow or widower, $112,500 if filed as the head of household, or $75,000 for individuals (IRS, 2021). Each eligible citizen/resident received $1400 and an additional $1400 for each qualifying dependent, with payment amounts tapering as earnings rose above the aforementioned AGI threshold (IRS, 2021). Without restrictions placed on how consumers could spend this money, the EIP differs from other governmental benefits like the Supplemental Nutrition Assistance Program (SNAP) in that there are ample ways in which individuals could choose to allocate the funds. In this research, we aim to examine how both scarcity and ontological insecurity—defined as the degree to which consumers believe their identity, the world around them, and their role within it is insecure and unpredictable (Campbell et al., 2020, p. 314)—impact consumer spending of the third EIP.

To address these interests, we collected data prior to, and following, the third EIP in March–April 2021 to examine how scarcity and ontological insecurity influenced spending across a wide range of categories tracked by the US Census Bureau (2021). We find that, while the experience of scarcity directly predicted stimulus spending on staple categories (e.g., spending more on rent and contributing less to savings) as theory would predict (Okada, 2005), it also had a positive relationship with feelings of ontological insecurity, which was subsequently correlated with a greater allocation of stimulus funds toward charitable giving. We further find evidence that mutability, or one’s perception of his or her ability to change their current situation (Cannon et al., 2019), moderated the relationship between ontological insecurity and allocations to charitable giving such that those who feel most insecure, but perceive that they have greater agency over their resource situation, allocated more to charity.

This research has a number of theoretical and practical implications, in line with the transformative consumer research (TCR) movement. To begin, our work is among the first empirical examinations of the relationship between scarcity and ontological insecurity (Ghafoorifard et al., 2022). Given that these constructs are inherently important for TCR, as the experience of either can threaten one’s identity and well-being (Roux et al., 2015), we show that they can actually contribute to collective well-being by encouraging charitable giving under certain conditions. We also identify the moderating role of mutability Cannon et al. (2019) and stand as the first research to empirically demonstrate the relationship between mutability, scarcity, and ontological insecurity. Finally, we add depth to research investigating positive outcomes associated with experiences of scarcity (e.g., Goldsmith, Hamilton, & Griskevicius, 2020; Goldsmith,
Roux, & Wilson, 2020). Specific to the transformative consumer research movement, this greater understanding of consumer stimulus spending and charitable responses has direct benefits for consumer welfare, as such actions have broad reaching impact for societal well-being.

2 CONCEPTUAL DEVELOPMENT

2.1 Scarcity and consumer behavior

The experience of scarcity can arise in myriad ways. For example, a consumer’s lived experiences might be shaped by a real or perceived lack of resources (Shah et al., 2012) and, even when this is not the case, they are likely to situationally encounter media and marketing messages that activate a scarcity mindset (Hamilton et al., 2019). Because scarcity is driven by one’s perceived resource shortcomings in a particular domain, it can manifest in a range of different forms, including being short on time, money, materials, knowledge, or in social status or relationships with others. Perceived scarcity is unsurprisingly theorized to result in greater levels of psychological insecurity (Campbell et al., 2020), which subsequently leads to increased anxiety and a motivation to rectify one’s current situation (Cannon et al., 2019). As such, scarcity has important downstream effects on consumer preferences and behavior. Specifically, consumers experiencing constraints on their time and money often feel the need to rationalize their choices and display a greater willingness to spend limited resources on functional, utilitarian options (Okada, 2005). Thus, scarcity can impact every stage of the consumer decision journey, from the consideration and evaluation of compensatory alternatives, to the choice among these alternatives, and the resulting consumption experience (Hamilton et al., 2019).

Scarcity has typically been associated with potentially adverse outcomes for individuals including increased valuation of material goods (Chaplin & John, 2007), increased impulsivity and risk-taking (Griskevicius et al., 2013), borrowing of future resources for present needs (Leary & Ridinger, 2020), declining physical and mental health (DeSousa et al., 2020), and increased competitive orientation (Roux et al., 2015). Recent research, however, has begun to investigate scarcity’s more positive and prosocial consequences. For example, Goldsmith, Hamilton, and Griskevicius (2020); Goldsmith, Roux, and Wilson (2020) find that consumers experiencing scarcity are more inclined to choose a sustainable product when prosocial (vs. personal) benefits are emphasized and when the costs to the self are low, as the reminder of resource scarcity promotes a more abstract level of construal. Similarly, Piff et al. (2012) find that heightened scarcity (as operationalized by social class) can lead to more ethical behavior among individuals, depending upon whether the behavior was self-beneficial (as opposed to benefitting others; Dubois et al., 2015). Scarcity can also prompt a focus on the welfare of others, resulting in increased generosity, trust, and helpfulness (Piff et al., 2010).

In short, research has begun to identify conditions under which scarcity can increase prosocial and ethical behaviors, shedding light on positive outcomes that can result from the experience of scarcity. This prior work has provided a foundation and motivation for the current research to further understand conditions under which scarcity can result such outcomes for individuals and society. Accordingly, we explore a mechanism through which perceived scarcity may lead individuals to spend resources on others via charitable giving by examining ontological insecurity, which is theorized to follow perceptions of scarcity (Campbell et al., 2020).
2.2 | Ontological insecurity

Individuals have an innate desire to maintain a sense of continuity and constancy in their lives and in the world around them. However, this ordered state, and one's very identity, can be threatened by the perceived experience of scarcity. Known as ontological insecurity (Campbell et al., 2020), this disruption of order and stability can lead to uncertainty and loss of agency, diminished confidence in one's self-identity, and, subsequently, a heightened motivation to regain a sense of control by reestablishing predictability and order to the world around them (Giddens, 1991). Importantly, ontological insecurity is not the complete absence of security but, rather, the perceived diminishment of security. In fact, individuals move along a continuum between ontological security and insecurity depending on his or her current state (Banham, 2019).

Responses to the experience of ontological insecurity range from increased anxiety, stress, and fear, to feelings of helplessness, loneliness, need for connection, and mortality salience (Campbell et al., 2020). In turn, ontological insecurity evokes a host of behavioral responses, including a preference for functional products to help alleviate the uncertainty caused by the disruption of order and stability in one's life. For example, during the early stages of COVID-19 when uncertainty and fear were at their highest, consumers resorted to hoarding risk-mitigating products like toilet paper and hand sanitizer, ostensibly in an effort to restore order (Garbe et al., 2020). This behavior is consistent with research showing that, when faced with a perceived resource shortage, consumers are willing to spend more money on utilitarian products that require less justification for their purchase (Okada, 2005).

Interestingly, ontological insecurity can also lead to positive outcomes. For example, it can prompt a “change mindset” where people seek variety and are more accepting of new products (Wood, 2010), in addition to a “fresh start mindset” in which consumers respond to insecurity with new goals and behaviors (Price et al., 2018). These positive responses have perhaps never been more evident than during the COVID-19 pandemic, as demand for self-improvement and self-development products and services like virtual fitness programs, meditation apps, and online training and certifications soared amidst heightened levels of insecurity (Roux, 2020). The disruption of existing habits and routines freed consumers in a sense, allowing them to take chances and risks without the fear of failure, and offering an opportunity to recreate oneself for a post-pandemic world (Lamberton & Wood, 2020).

In this research, we ask whether similar positive outcomes under conditions of scarcity and heightened ontological insecurity might extend to actions toward others. That is, might consumers experiencing scarcity and ontological insecurity be more willing to give to others through charitable actions, thereby illustrating an additional bright side to scarcity? We argue that this may indeed be the case, as scarcity prompts greater dependence on others (Hamilton et al., 2019) and, importantly, the restoration of security and predictability is not only a matter of self-preservation, but also relies on “the well-being of others” (Banham, 2019, p. 134). Consumers may thus be motivated to help less fortunate others through charitable giving in an attempt to address their own feelings of insecurity and to restore order to their lives and their world. Indeed, given that ontological insecurity can threaten one’s sense of identity (Campbell et al., 2020), it is particularly notable that consumers have been found to use charitable giving as a means of making sense of their world by expressing who they are and how they view themselves through their giving behavior (Aaker & Akutsu, 2009).

This conjecture is perhaps counterintuitive, as the previous research presented suggests that consumers should be more likely to spend limited resources on immediate and scarcity-mitigating
causes like rent, food, household supplies, etc. However, our theorizing is consistent with the “warm glow” theory of impure altruism (Andreoni, 1989, 1990), in which individuals receive intrinsic benefits for his or her charitable actions beyond the utility of helping others. These egoistic motives, such as the joy and satisfaction derived from “doing good” and doing one's part to help others, inspire charitable behavior beyond pure altruistic motives focused solely on the recipient. For instance, in the current context, individuals may be motivated to reduce feelings of insecurity and restore order through helping others, as doing so provides innate psychological benefits and can help bolster his or her diminished identity. Importantly, wealth is not presumed to have a direct bearing on one's decision to give under the warm glow theory (Andreoni, 1990). Thus, lower income individuals will give to charity even in the face of scarcity if the intrinsic benefits provide strong enough motivation to do so.

Additionally, our theory that heightened ontological insecurity can positively influence charitable giving aligns with the effective-altruism hypothesis, which argues that when consumers are motivated to give to altruistic causes, they should be motivated to allocate their resources in such a way as to maximize social welfare and gain (Berman et al., 2018). In this manner, giving to charity fulfills the utilitarian purpose of maximizing the well-being of others, which is a necessary precondition to restoring order and overcoming ontological insecurity (Banham, 2019). Accordingly, we might expect that consumers experiencing heightened ontological insecurity under conditions of scarcity may, surprisingly, be likely to give more to charity in an effort to address their current state of insecurity by helping others and maximizing social well-being.

It is likely, however, that charitable giving under conditions of scarcity and ontological insecurity will not be uniform across all consumers. Rather, we propose that the decision to spend precious scarce resources on others will be a function of the degree to which the individual believes they have agency over his or her current resource situation. With this in mind, we next explore the moderating role of mutability.

### 2.3 Mutability

When experiencing scarcity, the strategy one selects for reacting, coping, and adapting to the resource shortage depends in large part on the mutability of the resource discrepancy; that is, one's ability to change the situation through a personal investment or cost (e.g., time, money, and/or physical cognitive effort; Cannon et al., 2019). Stated differently, how one chooses to allocate his or her scarce resources depends on whether they believe they have agency over these resources in the presence of uncertainty and instability. When individuals perceive that scarcity, and thus subsequently ontological insecurity, can be overcome through personal investment, the situation is said to be one of high mutability and individuals are motivated to expend the effort necessary to reconcile the shortcoming. Conversely, a low mutability situation is one that is unlikely to be rectified through investment, leading an individual to avoid expending effort to change his or her situation (Cannon et al., 2019). Given the role that mutability is theorized to occupy in one’s response to scarcity, we believe it is likely that it will play a moderating role in whether someone spends money on others when faced with reduced resources and heightened ontological insecurity.

In sum, our theory proposes that the experience of perceived scarcity leads to increased feelings of ontological insecurity for consumers. In turn, this insecurity will be associated with higher levels of charitable giving, as giving will allow individuals to reaffirm his or her
threatened identity and restore predictability to his or her world. We further posit that the effect of ontological insecurity on charitable giving will be moderated by the perceived mutability of the scarce experience. Figure 1 provides an overview of our conceptual model. To test these predictions, we collected data prior to and after the distribution of the third EIP and assessed how consumers allocated these funds.

3 | PRESENT RESEARCH

3.1 | Method

3.1.1 | Participants

One thousand and fifteen (1015) participants from the United States were recruited through Prolific Academic (http://prolific.co) for the first survey. Of those, 743 completed the second survey, with 636 having received the third EIP. These 636 participants ($M_{Age} = 39.35$, $SD = 12.68$; 57% female) comprise the sample used in the analyses presented.

3.1.2 | Procedure

The predictor (survey 1) and criterion (survey 2) variables were temporally separated by 3 weeks to reduce the likelihood of common method variance inflating observed relationships, as measuring constructs at the same time increases the risk of artifactual covariance that can bias results (Podsakoff et al., 2003). Our focal variables were measured as part of a large-scale data collection effort to capture consumer behavior relative to the EIP distribution (see Data S1 for all scale items collected).

In the first survey, after providing consent, participants responded to the ontological insecurity scale (e.g., “I have no identity of my own; my identity is shaped by how others see me” from Marlowe et al., 2020; six items; $\alpha = 0.83$). We next assessed perceived scarcity using a range of scarcity experiences that one might encounter. Participants answered questions assessing their perceived relational scarcity (e.g., “There are people in my life I can go to for support when I need it;” four items; $\alpha = 0.89$), knowledge scarcity (e.g., “If there is something I need to know, I know where to look up the information;” four items; $\alpha = 0.87$), material scarcity (e.g., “I have had to borrow money from family or friends to pay my bills;” five items; $\alpha = 0.84$), and time scarcity (e.g., “I have enough time to meet all of my responsibilities;” five items; $\alpha = 0.79$) from

![Conceptual model](image.png)
DeSousa et al. (2020). These four scarcity subscales were recoded where necessary such that a higher score reflected greater perceived scarcity and then combined into a composite perceived scarcity variable (18 items; \( \alpha = 0.84 \)). Participants also completed four mutability items (e.g., “The ability to obtain resources is out of my control;” \( \alpha = 0.85 \)) from Simpson et al. (2020).

See Table 1 for zero order correlations and descriptive statistics.

Participants were then asked if they had received none, one, or both, of the first two COVID-19 stimulus payments in 2020, whether they were aware or not that Congress had passed a third EIP, and whether they expected to receive the third EIP. They were then thanked and redirected to Prolific for payment.

Approximately, 3 weeks later, an invitation was sent to all participants who had completed the first survey and indicated they either expected to receive or were not sure if they would receive the third EIP. The second survey began by asking participants whether they had received the third EIP in the time since they completed our first survey. If they answered “yes,” participants were asked to provide an estimate of the percentage of the EIP they spent in a series of consumption categories (food, utilities, household supplies, rent, vehicle payments, mortgage, clothing, debt payments, savings, investments, charitable donations, recreation, not yet used or allocated) using sliders on a scale from 0% to 100%. These categories were from the Household Pulse Survey administered by the US Census Bureau (2021). The sliders did not allow for a sum greater than 100%, ensuring consumers estimated the allocation percentages accurately. That is, they were asked to indicate how they actually spent the money. Upon completion, all participants, including those who had not received the third EIP, provided demographic information (i.e., age, gender, marital status, household income, and education level) before being redirected to Prolific for payment.

### 3.2 Results

#### 3.2.1 Validity checks

To assess measurement validity, a principal components analysis (PCA) with Oblimin rotation was conducted with the items comprising the ontological insecurity and mutability scales, and the four scarcity subscales. The Kaiser–Meyer–Olkin measure (KMO = 0.89) verified the

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**Table 1** Descriptives and zero order correlations

|                          | Means | SD  | OI | RS  | KS  | MS  | TS  | CS  | Mut. |
|--------------------------|-------|-----|----|-----|-----|-----|-----|-----|------|
| Ontological insecurity (OI) | 1.87  | 0.89|     |     |     |     |     |     | 1    |
| Relational scarcity (RS)  | 1.80  | 0.90| 0.34**|     |     |     |     |     | 1    |
| Knowledge scarcity (KS)   | 1.92  | 0.85| 0.47**| 0.49**|     |     |     |     | 1    |
| Material scarcity (MS)    | 1.67  | 0.97| 0.31**| 0.26**| 0.30**|     |     |     | 1    |
| Time scarcity (TS)        | 2.66  | 0.89| 0.21**| 0.15**| 0.16**| 0.13**|     |     | 1    |
| Composite perceived scarcity (PS) | 2.03  | 0.59| 0.50**| 0.67**| 0.68**| 0.70**| 0.58**|     | 1    |
| Mutability (Mut.)         | 3.61  | 0.89| -0.27**| -0.39**| -0.51**| -0.27**| -0.29**| -0.54**| 1    |

**Significant at \( p < 0.01 \) level (2-tailed).
sampling adequacy for the analysis, and Bartlett’s test of sphericity ($\chi^2(378) = 14408.19, p < 0.001$) indicated the correlations between items were sufficiently large for PCA. Results revealed a six-component solution (eigenvalues >1) with 65.15% variance explained ($R^2 = 0.65$). All items loaded onto their respective component (>0.60) with no cross-loadings (coefficients suppressed below 0.20). Thus, we proceeded with confidence that our scales represented separate but correlated constructs, including the four different types of scarcity measured. Further details are presented in Data S2.

3.2.2 | Description of statistical approach

To test the relationship between scarcity, ontological insecurity, and downstream spending allocation behavior, data were analyzed using PROCESS Macro Model 14 (5000 bootstraps; Hayes, 2018), with the perceived scarcity subscales ($X$), ontological insecurity ($M$), perceived mutability ($W$), and each spending category ($Y$) specified in the model. Continuous variables that contributed to the interaction were mean-centered. The Johnson-Neyman technique was used to conduct a “floodlight analysis” (Spiller et al., 2013) to determine the region of significance for the ontological insecurity by mutability interaction on spending category. Finally, consistent with previous research on scarcity (Prediger et al., 2014) and charitable giving (Korndorfer et al., 2015), and given that the first two rounds of the EIP were unequally distributed and allocated across demographic categories (Garner et al., 2020; US Census Bureau, 2021), the variables of age, gender, marital status, household income, and education were entered as covariates.

3.2.3 | Statistical analyses

We ran moderated mediation models for each of the four scarcity subscales (i.e., relational, knowledge, material, time) on the 13 spending categories assessed at $t_2$ (i.e., food, utilities, household supplies, rent, vehicle payments, mortgage, clothing, debt payments, savings, investments, charitable donations, recreation, and not yet allocated), for a total of 52 models (see previous section for model specifications). Of these 52 models, only the four assessing charitable donations had a significant index of moderated mediation; specifically, relational scarcity (index = 0.15, $SE = 0.07$; 95% CI [0.05, 0.33]), knowledge scarcity (index = 0.22, $SE = 0.10$; 95% CI [0.07, 0.45]), material scarcity (index = 0.10, $SE = 0.05$; 95% CI [0.03, 0.22]), and time scarcity (index = 0.08, $SE = 0.04$; 95% CI [0.02, 0.17]). That is, only for charitable donations did mutability moderate the theorized relationship between perceived scarcity, ontological insecurity, and EIP allocation, a relationship that was significant for all types of perceived scarcity measured. As such, we henceforth only present the results of the composite scarcity variable for parsimony (index = 0.33, $SE = 0.14$; 95% CI [0.11, 0.67]). See Table 2 for this moderated mediation result. Comprehensive results for the other spending categories are contained in Data S3.

The results of Model 14 demonstrated that the relationship between scarcity and ontological insecurity was significant ($R^2 = 0.53; F_{(6,626)} = 40.74, p < 0.001$), with the experience of scarcity positively associated with greater feelings of ontological insecurity (coefficient = 0.58, $SE = 0.05$; $t = 11.78, p < 0.001$; 95% CI [0.49, 0.68]). Likewise, the model also significantly predicted charitable donations ($R^2 = 0.04; F_{(9,623)} = 2.56, p < 0.01$). As might be expected, no direct effect on charitable donations was present for scarcity (coefficient = −0.56, $SE = 0.48$;
t = −1.17, p = 0.24; 95% CI [−1.51, 0.35]) or mutability (coefficient = −0.09, SE = 0.27; t = −0.32, p = 0.75; 95% CI [−0.61, 0.44]), yet in line with our theorizing there was a positive and significant relationship between ontological insecurity and charitable donations (coefficient = 0.78, SE = 0.31; t = 2.46, p < 0.05; 95% CI [0.18, 1.39]). Importantly, there was also a significant interaction between ontological insecurity and mutability (coefficient = 0.56, SE = 0.28; t = 2.02, p < 0.05; 95% CI [0.01, 1.10]). The Johnson-Neyman points showed that the interaction on the dependent variable was significant above values 3.33 (on a 5-point scale), such that 65.24% of cases fell above this point. Thus, the interaction was significant at roughly two-thirds of mutability values with individuals experiencing ontological insecurity more likely to allocate their EIP funds toward charity, but only when they perceived themselves to have agency over these scarce resources. See Figure 2 for path model.

Though we focus on charitable giving as the domain of interest in this research, model results also demonstrate significant direct effects between scarcity and variables that one might intuitively expect. Rent allocation was positively correlated with scarcity (coefficient = 4.09, SE = 1.71; t = 2.39, p = 0.02; 95% CI [0.74, 7.44]), and direct negative effects emerged between scarcity and savings (coefficient = −8.38, SE = 3.34; t = −2.51, p = 0.01; 95% CI [−14.92, −1.83]) and clothing purchases (coefficient = −1.26, SE = 0.48; t = −2.60, p = 0.01; 95% CI [−2.21, −0.31]). These results suggest that consumers were responding directly to scarcity as the literature (e.g., Okada, 2005) would predict by spending scarce resources on functional, scarcity-mitigating outlets. However, moderated mediation was not present when ontological insecurity and mutability were added to the model, lending credence to our theoretical account.
that consumers gave to charitable causes to help reduce the experience of ontological insecurity.

These results support our theory positing that mutability moderates the relationship between ontological insecurity and charitable donations, yet it is also possible that mutability could moderate the path between scarcity and ontological insecurity. In other words, the agency one perceives over his or her resources could mitigate the feelings of ontological insecurity following perceived scarcity, as those with greater perceived agency might be less inclined to experience the uncertainty and disruption of order associated with ontological insecurity. To test this alternative account, we analyzed our data using PROCESS macro Model 58 (5000 bootstraps; Hayes, 2018), specified with the same variables as our previous Model 14. This model tests the mutability moderator on both the $a$-path between scarcity and ontological insecurity and the $b$-path between ontological insecurity and charitable donations. Results show that mutability was not associated with ontological insecurity (coefficient = $-0.0005$, $SE = 0.04$; $t = -0.01$, $p = 0.99$; 95% CI $[-0.07, 0.07]$) and there was no interaction between scarcity and mutability on ontological insecurity (coefficient = $0.03$, $SE = 0.05$; $t = 0.60$, $p = 0.55$; 95% CI $[0.06$ to 0.12]).

Additionally, it is possible that mutability could intervene on the path between scarcity and charitable giving. One’s degree of perceived mutability over his or her resources could impact their tendency to allocate these resources to charitable causes following the experience of scarcity. To assess this possibility, we used PROCESS Macro Model 15 (specified as before; 5000 bootstraps; Hayes, 2018), to simultaneously test the mutability moderator on the $b$-path and $c$-path between scarcity and charitable giving. Results show that, while the $b$-path remained significant, the interaction between scarcity and charitable giving ($c$-path) was not significant (coefficient = $-0.43$, $SE = 0.40$; $t = -1.07$, $p = 0.29$; 95% CI $[-0.12, 0.36]$). Thus, the null results of these two alternative accounts serve as additional robustness checks for our theoretical model. See Data S3, Tables S3.1 and S3.2 for Model 58 and Model 15 results, respectively.

Taken together, these findings illustrate that only for charitable giving does the effect of scarcity operate through ontological insecurity, with this indirect effect conditional based on the degree of mutability. Specifically, those who perceive themselves to have greater agency over their resources are more likely to give to charity, a finding not observed for any other category. This discovery is particularly powerful considering that the other spending categories were arguably more salient and utilitarian during the COVID-19 pandemic and that the data was collected from actual self-reported behavioral spending. We expand upon the implication of this finding in our discussion section below.

![Path model](FIGURE 2 Path model)
GENERAL DISCUSSION

During the COVID-19 pandemic, many consumers experienced (or are still experiencing) unprecedented levels of scarcity (e.g., Hamilton, 2021). Although scarcity can indeed result in negative outcomes such as impulsivity and risk-taking (Griskevicius et al., 2013) and declining health (DeSousa et al., 2020), the current research demonstrates a novel bright side of perceived scarcity: increased charitable giving due to experiences of ontological insecurity.

Our findings highlight that during times of scarcity (such as, but not limited to, the COVID-19 pandemic), consumers spend more money on short-term survival categories (e.g., rent is prioritized over saving) as previous literature would predict. Yet consumers also experience heightened levels of ontological insecurity as a result of scarcity, with their world both less secure and more unpredictable (Campbell et al., 2020). We find this increased ontological insecurity is associated with stimulus funds being diverted to charitable causes, a relationship amplified among individuals experiencing average to high mutability (i.e., greater perceived ability to change a situation; Cannon et al., 2019). In other words, those who are experiencing ontological insecurity as a result of scarcity, but believe they have agency over their resources, are more likely to donate to charity. Our theory suggests that this charitable giving under conditions of scarcity and ontological insecurity allows one to restore a sense of security and predictability to his or her world and bolster their diminished self-identity.

4.1 Theoretical implications

This research has a number of theoretical and practical implications in line with the Transformative Consumer Research (TCR) movement. To begin, our work is among the first empirical examinations of the relationship between scarcity and ontological insecurity, making a substantial theoretical contribution to the consumer welfare literature. Consistent with Campbell et al.’s (2020) theorizing, we find that the threat of scarcity induces a greater degree of ontological insecurity, as the experience of a resource shortage heightens one’s sense of insecurity and unpredictability in his or her world. As additional methodological contributions, we introduce a measure of ontological insecurity to the consumer literature and add empirical evidence to theorizing in the scarcity and consumer welfare domains. Doing so allows future researchers to build upon our work to advance the understanding of how ontological insecurity impacts customer behavior in particular, and consumer well-being more broadly.

While existing research on ontological insecurity has predominantly focused on the resulting negative outcomes (e.g., Ghafoorifard et al., 2022), our findings illustrate that, under certain conditions, ontological insecurity can prompt consumers to use scarce resources to help others. We theorize that this perhaps unexpected outcome might be a form of impure altruism (Andreoni, 1989, 1990), in which individuals experiencing scarcity and ontological insecurity give to others as a way of alleviating this insecurity while restoring order to the world around them. That is, the intrinsic benefits received from giving to charitable causes provide motivation above and beyond the extrinsic utility associated with helping others, leading one to allocate his or her scarce resources to others.

In addition, we identify the moderating role of mutability, with the current research standing as the first to empirically demonstrate the relationship between scarcity, ontological insecurity, and mutability. A deeper understanding of the role that mutability, or the sense of agency one feels about his or her resource situation, plays in shaping scarcity outcomes is critical to
developing theoretically-derived practical interventions to help consumers and practitioners navigate downstream outcomes from scarcity experiences. Our finding that mutability moderates the relationship between ontological insecurity and consumer spending outcomes is of particular note, as previous theorizing has only considered mutability’s role as it directly relates to scarcity experiences (Cannon et al., 2019). Further, our follow-up analyses show that mutability does not moderate the relationship between scarcity and ontological insecurity, but rather only the relationship between ontological insecurity and charitable giving, providing additional support for our theory. We therefore contribute to the growing literature that examines the mechanisms and boundary conditions by which scarcity shapes consumption and spending behavior.

4.2 | Practical implications

The practical implications of this research hold value for marketers, public policy makers, and consumers to encourage personal and collective well-being, consistent with the TCR movement. Each of these stakeholders may be interested in understanding how scarcity and ontological insecurity jointly impact how consumers spent government-issued disbursements. For instance, the data indicate that perceived scarcity led to greater allocation of stimulus funds to rent, while reducing the allocation to savings and clothing. These findings provide some evidence that, indeed, the stimulus funds relieved financial pressure on Americans, as consumers responded directly to scarcity by allocating resources to more immediate, salient purposes. Given the unique nature of the stimulus payment, in that individuals received funds with no predefined purpose, understanding their allocation is important for the design of future stimulus measures. Furthermore, marketers will benefit from additional insight into why consumers might differently respond to experiences of scarcity, as such understanding can help design communication efforts aimed at changing behavior.

That said, scarcity is a nuanced concept, and our research reiterates marketers should expect to see consumer spending decrease in times of uncertainty, but also that there are some circumstances in which the psychological effects of scarcity (such as ontological insecurity) can lead to unexpected, and even prosocial, outcomes. Our research introduces unique insight via the incorporation of ontological insecurity, and in the interest of consumer welfare, all stakeholders may seek to learn more about this construct, in addition to its antecedents and consequences. Given the lack of research in the consumer literature on the effects of ontological insecurity, marketers might consider being cautious in their use of scarcity appeals given our findings that scarcity is positively related to heightened feelings of ontological insecurity. In other words, it is possible that prompting scarcity in an attempt to influence behavior might have the unintended consequence of activating a sense of uncertainty, which could potentially have detrimental downstream effects.

Our results further imply, however, that this sense of ontological insecurity may actually produce positive outcomes, provided consumers feel they have control over scarce resources. Thus, stakeholders might consider employing interventions grounded in mutability to facilitate charitable giving. That is, organizations should consider encouraging agency among consumers by providing consumers with information about how they can engender change through their giving. Recent research has shown that enhancing perceived agency can increase donation behavior (e.g., Heist & Cnaan, 2018). Our work complements this research by demonstrating this effect even among those experiencing heightened levels of scarcity and insecurity. Thus, we believe one possible way to increase donation behavior is through messaging highlighting the
availability of the resource and one’s control over the use of that resource. For example, the Canadian Blood Service’s long-running “It’s In You to Give” campaign inherently demonstrates the individual’s control over a scarce resource and highlights his or her autonomy.

Regarding consumer advocacy, this research highlights the need to examine the potential ways in which these findings might, intentionally or unintentionally, be misappropriated. In the spirit of TCR, we conducted this research to explore bright sides of scarcity, yet the positive relationship between ontological insecurity and charitable giving raises important questions about the ethical use of the ontological insecurity construct. Namely, could not-for-profits and/or Non-Governmental Organizations (NGOs) attempt to use scarcity and ontological insecurity to elicit donations, and what might the consumer welfare consequences of doing so entail? Though we note this as a possibility, there is a need for more research to provide better understanding and help address these types of concerns and related questions for consumer welfare. Generally speaking, from a consumer well-being standpoint, marketers should keep in mind that the use of scarcity appeals may have negative consequences for consumers and their sense of certainty in their place in the world.

4.3 Limitations and future directions

Although we have aimed to be as thorough as possible, this manuscript is not without its limitations. First, our data was self-reported, meaning we are relying on accurate reporting from our respondents. That said, self-reported surveys are highly accurate (e.g., Tuomela et al., 2019) and a valuable tool for large-scale research such as the present. Second, self-reported surveys are susceptible to common method bias (Podsakoff et al., 2003). The temporal separation of our predictor and outcome variables helps limit the effect of common method variance should increase confidence in the observed results. Third, while we believe our results provide evidence of a set of potential causal relationships, the correlational nature of our analysis limits our ability to infer causation between the focal variables. Finally, our focus was on consumer behavior during the COVID-19 pandemic; given the composite measure of scarcity employed, though, we believe our results are generalizable to many scarcity-related situations. Future research could examine different, or more specific, situations of scarcity (e.g., loss of a job, loved one, health) to determine if there are differential effects based on the type of scarcity experienced.

Building from these limitations, there are a number of possible future directions that emerge from this research. The current manuscript is among the first to provide empirical evidence of how ontological insecurity can predict consumer behavior (Ghafoorifard et al., 2022). Thus, it may be valuable to develop manipulations of ontological insecurity in order to increase its use in theoretical research. Doing so would allow the construct to be used more readily as a predictive mechanism to explain effects. Secondly, we did not explicitly test why consumers were likely to increase charitable giving in the current context. Future research might confirm or reject our theorizing that charitable allocations increase as a function of individuals seeking intrinsic benefits beyond simply helping others, such as to bolster a diminished identity and address feelings of insecurity. Additionally, there remains the possibility that the observed effects are the result of the “house money effect” (Thaler & Johnson, 1990), in which the unearned and/or unanticipated nature of the EIP might have caused individuals to allocate the received funds differently than money they previously earned. Future research should experimentally examine this possibility by having consumers earn (versus being endowed) resources they can then allocate as they see fit.
Finally, we conceptually bundle resource scarcity and perceived scarcity (i.e., the psychological experience of scarcity) together; however, the empirical examination and further validation of the role of ontological insecurity relative to consumer scarcity may seek to make important distinctions in consumer scarcity. That is, that economic hardship and psychological scarcity are not necessarily one and the same. For example, a consumer may have objectively limited resources (resource scarcity) but feel that they have “enough” (low perceived scarcity), whereas another consumer may have objectively more abundant resources (resource abundance) but may not feel that they have “enough” (high perceived scarcity). Thus, future research may seek to tease apart resource constraints and perceptions of scarcity, in seeking to understand which in particular shapes consumer action, and under what conditions.

CONFLICT OF INTEREST
The authors declare that there are no conflicts of interest that could be perceived as prejudicing the impartiality of the research reported.

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