UNIVERSITY OF CALIFORNIA,
IRVINE

Administering Aid in the Face of Scarcity: Downstream Holistic Impacts on Consumers

DISSERTATION

submitted in partial satisfaction of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

in Management

by

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Dissertation Committee:
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2021

DEDICATION

To

my meme, mama, and brother

in recognition of the sacrifices they made and for teaching me to be strong and resilient

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ACKNOWLEDGEMENTS

Dr. Connie Pechmann, Dr. Roxane Silver, and Dr. Tonya Bradford: Thank you all for being part of my dissertation committee. I am so honored and consider all of your support, advice, and guidance to be a privilege. You have worked to help turn me into the researcher and academic that I am today, and I will always be grateful.

Dr. Tonya Bradford, you taught me to see the world in a captivating new way and opened my heart to observing consumer experiences in a very endearing, transformative way, but more importantly, you have been a strong mentor and always supported me. You welcomed me into the academic community and helped me feel at home. Even during tough times, you were always a bright light guiding the way.

Dr. Roxane Silver, you set me up for success by giving me a strong foundation to build my research on by teaching me best practices in research methods. You also helped to inspire me not only by introducing me to fascinating ways to approach psychological research but also by the wonderful, impactful work that you do. I hope I can help shape perspectives and policies in the great ways that you do.

Last, but by no means least, Dr. Connie Pechmann, you took a chance on me and gave me the opportunity to pursue my dreams as an academic, and for that, I'll never be able to thank you enough. Since my interview with you, you have invested in me. You pushed me each day to ensure that I produced my best work. You gave me your time, support, care, and dedication day after day, and you were my greatest champion. It was an honor and privilege to be under your advisement. You have now forever changed my life, and I hope that I can make you proud day after day.

In addition, I'd like to acknowledge a number of other faculty that have helped to support and inspire me throughout my educational journey including: Dr. Kevin Bradford, Dr. Imran Currim, Dr. Wolfgang Hinck, Dr. Lee Ann Kahlor, Dr. Isabelle Cunningham, Dr. Daniel Mann, and so many more.

These few words are not enough to thank you all for everything that you all have done for me. The little girl in me never would have dreamed that I could have gotten here, and for all that you have done, I can only hope to make each of you proud with my research and throughout my academic career. Thank you so much for being part of my journey and helping me get to where I am today!

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ABSTRACT OF THE DISSERTATION

Administering Aid in the Face of Scarcity:
Downstream Holistic Impacts on Consumers

by
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University of California, Irvine, 2021
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In the United States, numerous governmental and charity organizations have been established to provide aid to millions of people struggling with resource scarcity; however, these programs have faced challenges, such as securing funding and not being fully utilized by those in need. While researchers have investigated specific challenges associated with aid programs, there are opportunities to continue examining the holistic effects — cognitive, emotional, and behavioral — of aid programs on the individuals facing resource scarcity. In fact, research has shown that individuals, faced with resource scarcity, can respond differently depending on their situational factors. Thus, I proposed the lack of participation in aid programs is the result of heavy regulations requiring individuals to invest higher effort to reduce their resource scarcity but providing them little beneficial resources. Furthermore, I proposed individuals will perceive those situations as less just, which will influence their participation in programs. Lastly, I proposed that heavily regulated programs, where individuals are investing higher effort to reduce their resource scarcity but receiving little beneficial resources, can make individuals anxious as they are unable to reduce the threat to their resource security even with high effort. One secondary data analysis and two lab experiments were conducted to examine how aid regulations impacted participation in programs,

perceived justice, and anxiety. Study 1, a secondary data analysis of actual participants of the U.S. Food Stamps program, found that there was an association between the effort required by aid programs and participation among individuals receiving benefits. When individuals were earning closer to the poverty line and thus receiving lower benefits, effort due to excessive regulation lowered participation in the aid program, but these effects disappear when individuals were receiving higher benefits. Studies 2 and 3, both lab experiments, followed up on this association and examined causality. In Studies 2 and 3, participants were split between being more or less educated and were mostly Caucasian. The median per household member income in the prior month was $1,400- $1,667. For the U.S. Food Stamps program, participants have typically been less educated and Caucasian, and the monthly income allowed for a one-person household was $1,383. Thus, while my sample was slightly more educated and from a slightly higher socioeconomic status, the COVID-19 pandemic hit affluent communities harder with reports of food stamp caseloads rising quicker in richer versus poorer counties, so this allowed opportunities to study a wider range of individuals. Study 2 (N =201) found that when benefits were lower, individuals who exerted more effort to apply for assistance showed lower intent to participate. Study 3 (N= 272) reinforced the findings of Study 2 and additionally found that justice was an important mediator influencing participation in aid programs, such that when perceived justice was lower then intent to participate decreased. Study 3 also found that when benefits were lower, individuals who exerted more effort to apply for assistance experienced elevated state anxiety. Together, this research provided insight into how organizations can regulate aid to minimize effort, improve benefits, increase participation in programs, and improve psychological reactions to aid including perceptions of justice and feelings of anxiety.

Introduction

"If you can capture the humanity of a family struggling in an economic crisis you can make a difference. You can raise awareness just of the simple humanity." ― Emily Blunt

In January 2020, the World Health Organization declared the Coronavirus (COVID-19) disease outbreak an internationally concerning, public health emergency (Centers for Disease Control, 2020). Later in March 2020, the Coronavirus disease (COVID-19) was declared a global pandemic (Centers for Disease Control, 2020), and it was predicted that job losses could total 47 million in the United States as a result of the Coronavirus (COVID-19) pandemic (CNBC, 2020). Quickly this health crisis shifted to become an economic crisis, and at the end of May 2020, more than 41 million people had filed for unemployment in the U.S. (PBS, 2020), and it was estimated that 42% of all Coronavirus (COVID-19) job losses would become permanent (Forbes, 2020).

In the midst of this, food hoarding, waste, and insecurity began to rise, and due to safety concerns, charity organizations struggled to find volunteers to assist with delivering goods to those in need (National Geographic, 2020). About 23% of U.S. households became food insecure during the Coronavirus (COVID-19) pandemic as they struggled to get unemployment and lines grew long at the limited number of open food pantries (New York Times, 2020). Within the first three months of the pandemic, more than six million people enrolled in food stamps, and the pandemic even hit affluent communities hard with reports of food stamp caseloads rising more quickly in richer counties versus poorer counties (New York Times, 2020). With no clear end in sight, many individuals simply lacked the ability to obtain necessary resources, and they began to struggle with

resource scarcity — a discrepancy between an individual's current resource level and a more favorable resource level (Cannon, Goldsmith, and Roux, 2018).

To assist individuals facing resource scarcity, such as those experiencing food insecurity during the Coronavirus (COVID-19) pandemic, safety net programs (e.g., Food Stamps) and charity programs (e.g., Feed America) are helpful. Numerous charity organizations try to help individuals reduce resource scarcity by gaining access to basic resources such as food, including Feeding America's food assistance programs (Feeding America, 2020) and the Salvation Army's meal programs (The Salvation Army, 2020). In addition, the United States government spends over $300 billion on safety net programs (Center on Budget and Policy Priorities, 2019). Having access to safety net programs is extremely important for those facing resource scarcity, and research has shown that each $1,000 received from safety net programs can reduce challenges, such as food security, by four percentage points (Schmidt, Shore-Sheppard, and Watson, 2013). However, while safety net programs and charitable aid can help alleviate the challenges associated with resource scarcity, these programs have faced numerous issues over the years including: 1) understanding why providers help those in need and encouraging them to do so, 2) understanding how beneficiaries respond to aid and encouraging them to utilize aid, and 3) attempting to capture and understand all individuals impacted by resource scarcity and providing them aid that improves their overall well-being. Below I expand upon these issues.

First, when looking at the provider perspective, charity and government organizations face obstacles because both policy makers, organizations, and donors have different perspectives on the reasons why they should help and the best ways to help those in need. For example, during the Coronavirus (COVID-19) pandemic, policy makers debated on policy regulations around safety net programs (New York Times, 2020) and how to best support those facing resource scarcity.

However, researchers have examined factors influencing helping behavior — a behavior that promotes the welfare of others by providing them a benefit (Bendapudi, Singh, and Bendapudi, 1996). Generally, providers may not believe assistance is necessary unless they perceive a considerable gap in beneficiaries' current state of well-being and a more favorable one (Batson, 1987); thus, providers are essentially judging if an individual's resource scarcity is large enough to warrant help.

Furthermore, there are numerous underlying provider factors that can influence helping behavior, such as a provider's perceptions of what makes a cause or person worthy of help and other internal motivations of the provider (Bendapudi, Singh, and Bendapudi, 1996). For example, when looking at a donor's perceptions of help worthiness, researchers have found that well known and effective charities elicit a greater response from donors (Harvey 1990). Additionally, research has found that when providers are asked to allocate resources, they are concerned about equity (Tyler, 1994); hence, providers are more inclined to help others when the need results from external, uncontrollable factors versus factors controlled by the beneficiary (Griffin et al., 1993). Specifically, if a beneficiary is thought to cause their own need, providers may perceive their outcome (resource scarcity) as appropriate and not help; however, if a beneficiary is thought to be in need due to no fault of his/her own, providers may perceive their outcome (resource scarcity) as unfair and seek to restore justice by helping (Bendapudi, Singh, and Bendapudi, 1996). Brickman et al. (1982) also developed models to identify individuals' behaviors when they try to help others, and when it comes to welfare, Brickman et al. note that individuals assume beneficiaries need to be taken care of but differ on the degree to which they blame people for needing help.

Despite a provider's perceptions of worthy causes, the provider's internal motivations also play a key role in helping behavior. Typically, a provider's motivation to help is egoistic, altruistic, or both (Bendapudi, Singh, and Bendapudi, 1996). Egoistic motivations focus on an individual's own well-being (Martin, 1994), and this form of motivation is often linked to the potential for a provider to gain rewards or avoid punishment and emotional distress (Bendapudi, Singh, and Bendapudi, 1996). On the other hand, altruistic motivations focus on the well-being of those in need (Martin, 1994), and this form of motivation is often linked to a provider's ability to experience empathy (Bendapudi, Singh, and Bendapudi, 1996) or to view a situation from the beneficiaries' perspectives and experience their feelings (Hoffman, 1984).

In addition to aid provider factors (e.g., perceptions of help worthiness and internal motivations) that can influence helping behavior, other non-provider factors may also play a role, such as the state of the economy, competing charities, or social norms (Bendapudi, Singh, and Bendapudi, 1996). Over the years, researchers have continued to investigate helping behavior including examining various models of helping (Brickman et al., 1982), the role of provider self-enhancement (Yong Seo and Scammon, 2014), upward or downward comparisons (Schlosser and Levy, 2016), judgments of beneficiaries' mental capabilities (Schroeder, Waytz, and Epley, 2017), and expectations of help effectiveness (Kossowska et al., 2020). Overall, several economic, sociological, and psychological factors can impact helping behavior (Bendapudi, Singh, and Bendapudi, 1996), such as donations to charities. All of this makes it challenging for organizations to get adequate support to help those facing resource scarcity; however, while having sufficient support from providers is important, that is only one of the issues that aid programs face.

As evident from prior research, providers often seem to use their own internal judgments and motivations to decide when to help and who deserves help. Thus, unless providers have mostly

altruistic motivations and can experience empathy, they may be overlooking the true impact of aid on beneficiaries. Yet, seeking and receiving aid can sometimes be a troublesome, negative experience for beneficiaries (Cherrier and Hill, 2018; Manchester and Mumford, 2009; Moffitt, 1983; Nadler, 1986). Hence, to gain more insight into other issues associated with aid programs, researchers have also examined aid from the beneficiary perspective to understand their responses to receiving aid.

Generally, beneficiary reactions to receiving aid include various behavioral responses and psychological responses, such as altered external or internal perceptions (Fisher, Nadler, and Whitcher-Alagna,1982). For example, researchers have found that reciprocity and indebtedness often arise when receiving aid. If beneficiaries feel they experience greater benefits than the provider while the provider has higher costs, they may feel indebted to the provider (Fisher, Nadler, and Whitcher-Alagna,1982). Once feeling indebted, beneficiaries may feel the need to reciprocate if possible (Walster, 1978), or if reciprocity seems less possible, they may abstain from seeking aid (Castro, 1974).

In addition to the above line of research, the threat to self-esteem perspective has been helpful in predicting beneficiary reactions to receiving aid. This perspective is based on the notion that aid can be both supportive and threatening (Fisher, Nadler, and Whitcher-Alagna,1982). Aid is thought to be supportive by providing benefits, which may then lead to positive, nondefensive responses (e.g., positive provider evaluations) (Fisher, Nadler, and Whitcher-Alagna,1982). However, aid is also thought to be threatening in that it can create a relationship of inferiority – superiority between the beneficiary and provider (Merton, 1968), which may lead to negative, defensive responses (e.g., negative provider evaluations) (Fisher, Nadler, and Whitcher-Alagna,1982).

Over the years, researchers have expanded upon the negative, defensive responses to aid, such as how different messages can create psychological threats (Nadler, 1986), how aid programs can create a sense of institutional subordination (Cherrier and Hill, 2018), and the impacts of stigma (Manchester and Mumford, 2009; Moffitt, 1983). Additionally, researchers have investigated why individuals may not accept help, such as tradeoffs in their social life (Ackerman and Kenrick, 2008), and ways to combat issues to promote aid delivery using the social identity perspective (Bowe et al., 2019). Furthermore, researchers have examined beneficiaries' reactions to aid when the need for aid is assumptive and also the impacts of in-group versus out-group help (Halabi and Nadler, 2011). With this body of research, it is evident that, in addition to increasing the number of aid providers to support a beneficiary's physical needs, aid programs face issues supporting beneficiaries' psychological well-being and even their willingness to seek help and accept aid.

In fact, researchers have historically found lower participation rates in aid programs, and thus, this reinforces gaps in knowledge on how to improve aid programs to holistically help those in need. For example, the United States Food Stamp Program (SNAP) had an overall 84% participation rate (U.S. Department of Agriculture, 2019), but in some states, this rate was as low as 56% (U.S. Department of Agriculture, 2019). This is concerning because in order to qualify for SNAP, an individual's gross monthly income must be at or below 130% of the federal poverty line (Center on Budget and Policy Priorities, 2019), which equates to only $16,596 or less per year for a one-person household or $34,068 or less per year for a four-person household (U.S. Department of Agriculture, 2021). Furthermore, for poor single mothers, Temporary Assistance for Needy Families (TANF) participation rates are close to 50%–55% (Bertrand, Mullainathan, and Shafir, 2006).

If people need help and are struggling, and government or charity programs can help them reduce their scarcity, one might assume most everyone who qualifies would participate. However, the above research has found that is not always the case. Therefore, researchers have investigated reasons for low participation in aid programs including: transaction costs, lack of information, low program awareness, informational complexity, hassle factors, participant procrastination, program spillover, and program benefits (Bertrand, Mullainathan, and Shafir, 2006; Blank and Ruggles, 1996; Chetty et al., 2013; Currie, 2004; Daponte, Sanders, and Taylor, 1999; Meyers and Heintze, 1999; Yelowitz, 2000). This becomes another obstacle that aid programs must address in addition to the other beneficiary reactions to aid; yet, the issues linked to aid programs do not stop there.

Another challenge researchers have faced is attempting to capture and understand all individuals in need, as some groups have been historically overlooked. In fact, Chakravarti (2006) called for researchers to help suggest interventions to support consumers facing chronic need (e.g., a life in poverty), and thus research followed to examine individuals at the base of the pyramid — those who earn less than $8 a day (Jenkins and Ishikawa, 2009). For example, researchers have examined life satisfaction, self-determination, and consumption adequacy at the base of the pyramid (Martin and Hill, 2012), as well as patterns among more impoverished consumers across the world (Hill, 2016). However, this research — as well as other streams of research (Griskevicius et al., 2011; Mullainathan and Shafir, 2013; Shah et al., 2012; Sharma and Alter, 2012) — were all attempting to capture and understand individuals facing one form or another of resource scarcity. Thus, later when a model for resources scarcity was established and the construct more clearly defined (Cannon, Goldsmith, and Roux, 2018), researchers found ways to merge their research into this broader construct. For example, Hill (2020) found areas in which the research on poverty could be incorporated under the broader scarcity construct.

With this larger focus on the construct of scarcity, researchers began to look more broadly at how all forms of scarcity and need impact the consumer decision journey (Hamilton et al., 2019). Furthermore, as researchers began to focus on the complete experience of being in a resource scarce state, including the physical and psychological challenges, it seemed necessary to redefine what it meant to promote consumer well-being. More traditional consumer well-being was viewed as the general satisfaction with the acquisition, possession, consumption, maintenance, and disposition of goods and services (Lee et al., 2002). However, Baker et al. (2020) redefined holistic consumer well-being as the objective resources as well as beneficiaries' perceptions of how the process to obtain resources impact their quality of life. Even though the term developed later, it is evident that much of the prior work around various forms of resource scarcity had already begun examining holistic consumer well-being.

As research has moved in the direction of resource scarcity and holistic consumer well-being, it presents additional opportunities to shed light on issues around how aid impacts those in need. Furthermore, these research streams present important opportunities to examine the beneficiary perspective that providers may not consider as they often use their own judgments and motivations to determine how and who to help. For example, the broader resource scarcity research allows opportunities to study traumatic events, like the pandemic, which impact impoverished communities as well as more affluent communities and place them in a state of need (New York Times, 2020).

Additionally, the holistic consumer well-being perspective is important because, like past work on recipient reactions to receiving aid, it allows opportunities to examine not only the physical impacts of being in a state of need but also the psychological impacts on consumers. In fact, the holistic consumer well-being perspective seems to view both the physical and

psychological components as equally important, and it also opens the doors to study not only the reactions to the resources provided by aid but the process to obtain those resources. Thus, while it is clear that there are challenges around aid programs both from a provider perspective (e.g., promoting helping behavior, perceptions of need) and a beneficiary perspective (e.g., lack of participation, psychological costs), the new frameworks around resource scarcity and holistic consumer well-being present interesting opportunities to explore the impacts of aid on beneficiaries.

Hence, the goal of this research was to examine the issues around aid programs with resource scarcity and holistic consumer well-being constructs in mind. This research also aimed to examine the challenges facing aid programs outside of the traditional provider/donor context and instead in the context of how programs are regulated at an organizational level. Lastly, the purpose of this research was to expand upon the cognitive, emotional, and behavioral reactions to aid programs and add to the research on resource scarcity. Below, I provide more background on what it means to experience resource scarcity and to be met with aid program regulations when seeking help. From there, I introduce my conceptual model and hypotheses as well as present an overview of my studies. Finally, I discuss the details of my studies, results, and final conclusions.

Background

Resource Scarcity

Resource scarcity occurs when there is a discrepancy between current resource levels and better, more favorable resource levels (Cannon, Goldsmith, and Roux, 2018). People in resource scarce situations often lack the ability to gain access to resources they need and encounter problems, such as material hardships including food insecurity, difficulty meeting basic needs,

housing problems (Iceland and Bauman, 2007), and in even more extreme cases, consumption adequacy or having necessary goods continuously available for survival (Hill, 2005). For example, resource scarcity occurs when people experience food insecurity due to poverty, job loss, or a reduction in income, and are no longer able to obtain stable, secure levels of food. These people may then seek out aid programs, such as SNAP, to help with their scarcity. Thus, when trying to understand how aid programs impact beneficiaries, the resource scarcity research is helpful in examining how aid regulations might have an impact on cognitive, emotional, and behavioral reactions to aid.

Research has shown that when facing resource scarcity, individuals respond to resource discrepancies differently depending on situational factors, such their evaluations of how their actions will influence the situation, which can result in a number of downstream effects (Cannon, Kelly Goldsmith, and Roux, 2018) including: narrowed attention (Shah et al., 2012), heightened arousal (Zhu and Ratner, 2015), abstract thinking (Roux and Goldsmith, 2013), reduced personal control (Chou et al., 2016), and reduced cognitive control (Mani et al., 2013). These individuals may also have emotional and behavioral reactions, such as planning and prioritizing resources (Fernbach et al., 2015), acting unethically trying to consume scarce resources (Yam et al., 2014), having general unpleasant affect (Sharma and Alter, 2012), experiencing stress (Griskevicius et al., 2013), or having decreased life satisfaction (Hill, Martin, and Chaplin, 2012). Overall, resource scarce situations can result in several downstream cognitive, emotional, and behavioral responses depending on how an individual perceives the situation, and this literature should be considered when assessing how to regulate aid programs that are designed to reduce resource scarcity for those in need.

Aid Regulations: Benefits and Effort

To help individuals experiencing resource scarcity, charity and government organizations have built programs to provide aid, and the United States government alone has set up 126 separate aid programs to help individuals in need (Tanner, 2012). Yet, these programs face the challenges described above, and they are often not fully utilized by eligible beneficiaries. Even though psychologists have examined various beneficiary reactions to receiving aid and economic and policy researchers have investigated underlying problems around aid programs, such as lower participation in aid programs, the holistic impact — cognitive, emotional, and behavioral — of aid program regulations on resource scarce individuals is still less clear. Thus, reviewing the literature around how aid programs are regulated, specifically looking at effort and benefits of aid, is helpful to see how aid programs may impact those in need and also the challenges posed by these programs.

When individuals are in a resource scarce situation, such as facing food insecurity as the result of losing a job, they can seek out aid as a way to offset their resource limitations. However, government and charity organizations can regulate the benefits of aid, such as money or goods, that they provide to those deemed eligible. Therefore, simply applying for aid does not guarantee benefits or any form of assistance to those in need. In fact, people can apply for aid and receive very little benefits in return, and often times, they do not know how much they might receive until after they apply for assistance, which makes the process ambiguous.

For example, in the United States, the Food Stamps program is designed to help people with income around the poverty line (U.S. Department of Agriculture, 2019). Therefore, it can only change food scarcity by providing benefits for anyone facing financial hardship that meets the income level threshold (U.S. Department of Agriculture, 2019). Even then it is not that simple

because the program uses a household composite test, cash income, and asset test to determine eligibility and benefits (Blank and Ruggles, 1996).

To calculate benefits, the program has a maximum benefit amount of $194 for a single person household (except in Alaska and Hawaii), but that amount is reduced by subtracting 30% of net income from the maximum benefit, where net income is then determined by the regulated income deductions set by the aid program (U.S. Department of Agriculture, 2019). As a result, depending on how aid programs are regulated, benefits can greatly vary from individual to individual that applies, which may then have a greater or lower impact on their resources. Thus, the benefits of aid are one way that programs are regulated and important to consider when looking at how individuals facing resource scarcity may react to aid programs.

However, the amount of benefits individuals might receive may be unclear until after they exert effort, such as completing the application process, to even gain access to the resource, and government and charity organizations also have the ability to regulate the terms of being eligible for aid. For example, as part of the SNAP program in the United States, each state has some flexibility in how they regulate programs and eligibility requirements. There are at least 28 program policies that allow states to choose between options in how they regulate aid including options on: reporting requirements, certification length, and joint application with Medicaid (U.S. Department of Agriculture, 2017). Within a single program policy, such as certification length, states can choose to certify households for 3, 4, 6, 12, or 24 months (U.S. Department of Agriculture, 2017), which means they may require households to reapply more or less often. Furthermore, states have the option to offer different services, such as call centers, electronic files, and online applications (U.S. Department of Agriculture, 2017), as part of the application process.

Beyond the above policies, states can administer aid differently in terms of the length and readability of their applications. For example, SNAP applications can be on average 12 pages long (up to 36 pages), contain 120+ items, take hours to complete, and require an in-person interview at a local welfare office (O'Brien et al., 2001). Applications can use terms requiring higher education like "lump-sum payment" or "liquid assets," and require applicants to provide information under risk of perjury (O'Brien et al., 2001). As a result, depending on how aid programs are regulated, individuals may need to invest more or less effort (e.g., time or cognitive) to apply to a program. Thus, the effort to be eligible for aid is another way that programs are regulated and important to consider when looking at how individuals facing resource scarcity may react to aid programs.

Overall, charity and government organizations have built programs to provide help to individuals facing resource scarcity. Yet, these programs can be heavily regulated, and aid regulations can impact the effort and benefits of the programs. At the same time, research has shown that when facing resource scarcity, individuals respond to their resource discrepancies either directly or indirectly depending on how their situation is perceived and can be addressed, which can result in numerous psychological and behavioral consequences (Cannon, Kelly Goldsmith, and Roux, 2018).

Thus, the question then arises: how do aid regulations impact cognitive, emotional, and behavioral reactions to aid programs when individuals are facing resource scarcity? To explore this question, I examined aid regulations in the context of resource scarcity, specifically looking at food insecurity. I first explored how regulations around effort and benefits may impact behavioral responses to aid programs. Then, I investigated how regulations around effort and

benefits may impact cognitive responses and emotional responses. Together this research aimed to provide a more holistic view of how aid regulations impact resource scarce individuals.

Conceptual Model

Overview

Faced with job and income losses due to the Coronavirus (COVID-19) pandemic, it is clear that many people are in a situation of resource scarcity, where there is a discrepancy between their current resource level and a previously more positive level. Due to their discrepancy in resources, these individuals may need to seek help in the form of government assistance or charity. Yet, when experiencing resource scarcity, individuals may have different behavioral and psychological responses depending on their situation. At the same time, aid regulations can change the situation that individuals face as they can require more or less effort to be eligible for aid and also provide more or less benefits. Based on this, I focused on how different aid regulations (e.g., effort and benefits) impact a beneficiary's perceptions of justice, state anxiety, and participation in aid program, or their cognitive, emotional, and behavioral responses, respectively.

For simplicity, effort has generally been thought of as work done to achieve a goal or end, in this case to reduce scarcity, and benefits have generally been thought of as something that is helpful, in this case helpful to reduce scarcity. Thus, I call the effort required to apply for aid the "effort," and this is my independent variable. I call the benefits provided by being eligible for aid the "benefit," and this is my moderator. I suggest that aid regulations around effort and benefits do not operate independently to impact perceptions of justice, state anxiety, and participation in aid programs. Instead, I posit that the interaction of these two factors influence individuals' psychological and behavioral reactions to aid programs.

I propose this key reason for lack of participation in aid programs: when aid programs are heavily regulated and require high effort yet offer lower benefits, the aid program will seem like a less reasonable and just way to reduce resource scarcity because it requires people to exert a high level of effort to be eligible for aid with little benefit. Ultimately, perceived justice will then impact participation in aid programs. Furthermore, I propose that investing higher effort to reduce resource scarcity but receiving little resources can leave individuals anxious as they are unable to reduce the threat to their resource security even with high effort. To test this, I conducted one secondary data analysis of the SNAP program to see how regulations requiring higher versus lower effort to become eligible for aid impact program participation for groups of varying income levels, therefore receiving different levels of benefits. In addition to this, I conducted two controlled lab experiments that expand upon the cognitive, emotional, and behavioral responses to aid programs and the regulations of them. Below I expand upon my two models, constructs, and hypotheses.

Perception of Justice and Participation in Aid Programs

Overall, for individuals facing resource scarcity, government and charity organizations have the potential to close the gap in their resource scarcity by offering them aid. However, aid can be regulated in terms of the benefits it provides (Blank and Ruggles, 1996; U.S. Department of Agriculture, 2019) and the effort required to qualify for aid (O'Brien et al., 2001; U.S. Department of Agriculture, 2017). I proposed these regulations may then interact to influence participation in programs as well as perceptions of justice.

First, when aid is offered in the United States, regulations can be set to require more or less effort for individuals to be eligible for aid programs (e.g., Food Stamps), and these regulations can vary from state to state (U.S. Department of Agriculture, 2017) or based on a charitable organization's decisions around regulations. Research that used experimental mailings, examined

secondary survey data sets, reviewed literature, and performed econometric studies, found that higher effort tends to lower participation in aid programs (Bhargava and Manoli 2015; Bitler, Currie, and Scholz, 2003; Currie, 2004; Currie and Grogger, 2001). Depending on the program, high cognitive and/or time effort may be required.

First, research has shown that time effort may play a role in participation in programs. For Food Stamps, reducing recertification intervals could have a negative impact on participation, and for each 1-month increase in the recertification interval, there could be a 0.5% increase in the participation rate (Currie and Grogger, 2001). For programs like Women, Infants, and Children (WIC), requiring more frequent visits to the office may reduce participation (Bitler, Currie, and Scholz, 2003).

Despite time effort, there are also demands on cognitive effort. Program applications, such as Food Stamps, have complexity that would challenge the complexity of the Internal Revenue Service (O'Brien et al., 2001), and informational complexity is another factor thought to influence participation in aid programs (Bhargava and Manoli 2015). On the other hand, research has found that participation in programs is enhanced by automatic enrollment into programs and lower administrative barriers (Currie, 2004). Overall, attempting to become eligible for aid may require both time and cognitive effort in order to apply and that may decrease participation in programs.

However, there is another important regulatory factor to consider when looking at aid, and that is the benefits of aid. Once eligible for aid, individuals may receive benefit from the aid program. The level of benefits an individual receives may impact participation rates as the benefits directly impact their goals of reducing their resource scarcity. At the same time, organizations can regulate the level of benefits they provide to individuals, and they can even create restrictions that change the way benefits are calculated.

Research that used behavioral economics, two economic models, and an informational experiment, found that higher aid benefit tends to increase participation in aid programs (Bertrand, Mullainathan, and Shafir, 2006; Blank and Ruggles, 1996; Daponte, Sanders, and Taylor, 1999; Moffitt, 1983). Moffitt (1983) found that participating in an aid program varies with the size of the potential benefit, and a $10 increase in the weekly guarantee would increase the participation rate by about 4%. Later, research on participation in Aid to Families with Dependent Children (AFDC) and the Food Stamps program showed that increases in the size of the benefits people were eligible for increased participation in these programs (Blank and Ruggles, 1996). Then, Daponte, Sanders, and Taylor (1999) found that informing people about their eligibility increased the odds of participation. Researchers also suggest that whether or not intended beneficiaries know about the program benefits can influence participation rates (Bertrand, Mullainathan, and Shafir, 2006).

While past research has shown that effort or benefits might impact participation in aid programs, these factors have been studied independently. Yet, I posit that, for individuals facing resource scarcity, the decision to participation in aid programs is actually the result of effort interacting with the benefits of aid. I base this prediction on the research around resource scarcity, which suggests that individuals can react differently to their resource scarcity based on their evaluations of how their actions to change their situation will actually be likely to change or improve the situation (Cannon, Goldsmith, and Roux, 2018). This research implies that how individuals respond is dependent on two factors: 1) the actions they take and 2) the resulting change or improvement in their situation. Thus, based on how individuals evaluate their actions and improvements, they may respond directly to the discrepancy in their resources, such as actually pursuing resources, or indirectly, such as engaging in categorization to help manage their non-consumption domains (Cannon, Goldsmith, and Roux, 2018).

When mapping that on to aid regulations, the effort aid programs require would be the actions individuals are taking, by requirement of the program, to reduce their scarcity. Then, the benefits the aid program provides would be the change or improvement in their situation. Hence, based on how beneficiaries evaluate their effort and benefits, they may respond directly or indirectly to the discrepancy in their resources. Since individuals adjust their actions based on reaching their goals (Cannon, Goldsmith, and Roux, 2018), in this case to reduce their resource discrepancy, benefits become the moderator, and effort serves as the independent variable.

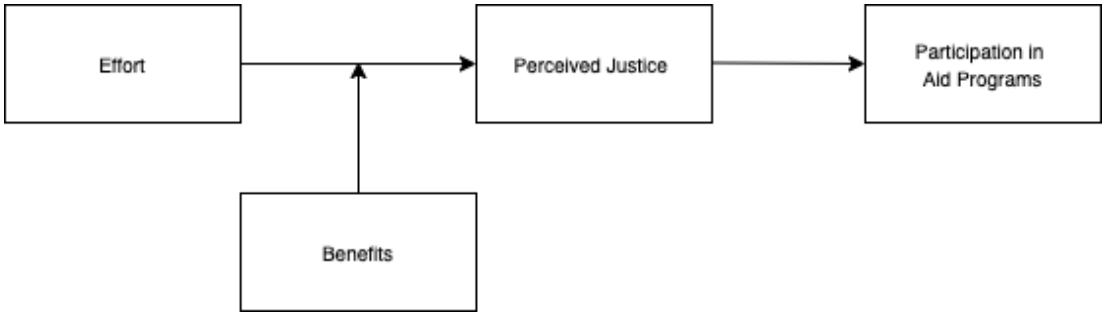
With this in mind, consider the application for SNAP, which can take hours and involve answering hundreds of questions (O'Brien et al., 2001) depending on how the program is regulated; however, regulations set the minimum benefit an individual can get at $15 per month for a single person household (U.S. Department of Agriculture, 2017). Thus, an individual can invest effort to apply and get awarded a mere $15 benefit. If the person only invested minimum effort, e.g., the average Food Stamps application process takes five hours (O'Brien et al., 2001), then they may evaluate the level of improvement in their situation as directly related to their level of action to change the situation, making them likely to continue requesting aid. However, if the person invests three or four times as much effort, due to lengthy or cognitively challenging applications, then they may not evaluate the level of improvement in their situation as directly related to their level of action to change the situation, making them less likely to continue participating in aid as it is more demanding and will have little impact on resolving their scarcity situation.

On the other hand, the maximum SNAP benefit that regulations allow is $194 per month for a single person household (U.S. Department of Agriculture, 2019). If the same person invested minimum effort and got awarded the maximum benefit, then they may evaluate the level of

improvement in their situation as related to their level of action to change the situation, making them likely to continue participating in aid. Even if that same person invested three or four times as much effort, they may still evaluate the level of improvement in their situation as directly related to their level of action to change the situation as the benefit is still high, thus making them likely to continue participating in aid. Hence, I posit that the effort and benefits of aid will interact to influence participation in programs. Therefore, the following hypothesis was tested (see Figure 1).

> **H1:** When individuals are offered lower benefits, requiring them to exert higher vs. lower effort to apply for assistance will lower intent to participation in aid programs, but when individuals are offered higher benefits, the effort effect will disappear.

FIGURE 1



Furthermore, there can be cognitive limits to making the decision to participate in aid (Bhargava and Manoli 2015). Thus, while a number of cognitive factors might influence participation in aid programs, a critical cognitive factor that seems especially relevant in the context of aid regulations is the perceptions of justice — generally thought of as fairness, reasonableness, and equity (Colquitt, 2001). Justice is particularly important to study because research has found implications on individual's health (Elovainio, Kivimäki, and Vahtera, 2002), trust (DeConinck, 2010), and holistic consumer well-being (Baker et al., 2020).

First, recent research uncovered that interactional justice played a role in the aid and welfare system (Baker et al., 2020). Interactional justice — fairness in the decision maker's behavior when carrying out procedures — stems from truthfulness and respect in communications (Bies and Shapiro, 1987). When examining the welfare system, Baker et al. (2020) note that, while beneficiaries might have instances of respect and compassion when interacting with providers, individuals often experience injustice resulting from lack of basic respect, which can leave beneficiaries feeling shameful for needing help. This reinforces the work of Fisher, Nadler, and Whitcher-Alagna (1982) by showing how aid can be both supportive and/or threatening. Furthermore, research has found that interactional justice can mediate the relationship between leadership style and trust in superiors (Wu et al., 2012), and interactional justice can be used to help reduce resistance or oppositional behavior (Paulsel and Chory-Assad, 2005). Together, this research indicates the importance of having aid providers promote interactional justice in aid programs, especially if the program wants to foster trust with the beneficiaries.

Yet, given this research, interactional justice was not the focus of my research as it predominantly focused on the actions of superiors around trust and respect. While interactional justice would likely be central to studying specific components of aid programs, such as the interview process of SNAP, my research sought to explore how aid regulations impact beneficiaries versus how the interaction with superiors (e.g. providers) impacts beneficiaries. Hence, other forms of justice become essential to consider. In fact, Baker et al. (2020), who focused on interactional justice, suggest that other forms of justice should be studied when looking at the aid and welfare system. Thus, I discuss procedural and distributive justice briefly below. Then, my research specifically turned to the role of distributive justice in aid programs.

Procedural justice — impartiality in the processes used to arrive at distribution outcomes (Namasivayam and Mount, 2006) — is promoted through implementing a fair process (e.g., lack of bias) (Colquitt, 2001). Individuals are thought to evaluate the process they experience against general procedural rules, such as consistency in the process applied, bias suppression by the decision maker, and ethicality of the process, and if these rules are maintained, then individuals see the process as just (Colquitt, 2001). Procedural justice is significant as it has been linked to negative and positive emotional reactions, which then lead to compliance with authority (Murphy and Tyler, 2008). However, research has also discovered that training individuals, who oversee policing and maintaining order, helps them to support values that promote procedural justice (Skogan, Van Craen, and Hennessy, 2015). This research would indicate that procedural justice might also play a role in aid programs, specifically around the consistency of how order and processes are maintained by providers.

Yet, as with interactional justice, while I believe that procedural justice is worth examining, it links more to the provider's compliance with rules and ability to offer an impartial process and therefore was not the key focus of my research. I aimed to study the beneficiaries' experiences as a result of the effort they invested and the benefits they received due to aid regulations, which in this case are typically held at a consistent level by a regulatory law or policy. Hence, I turn to distributive justice.

Perceptions of distributive justice — perceived justice of decision outcomes (Leventhal, 1976) —is promoted when outcomes are in line with inherent norms regarding allocation (Colquitt, 2001). Distributive justice exists when allocations are consistent with the goals of a situation (Deutsch, 1975). Thus, distributive justice is then linked to the equity rule —resources are distributed according to the recipients' contributions (Leventhal, 1976). Furthermore, research has

shown that justice is linked to an individual's behavioral intentions (Dailey and Kirk, 1992). As a result, if aid regulations violate the equity rule, then individual's perceptions of justice may be altered, and if an individual's perceptions of justice increases or decreases, that may lead to increased or decreased intent to participate in an aid program.

With this in mind, once again consider the SNAP program. An individual can invest effort to apply for assistance and get awarded a mere $15 benefit. If the person only invested minimum effort, then they may perceive their situation as just, i.e., equitable or fair. However, if the person invests three or four times as much effort, due to lengthy or cognitively challenging applications, then they may perceive their situation as less just and equitable, as it is more demanding and does not have much impact to resolve their scarcity situation. In this case, they may have lower perceptions of justice, which in turn could impact their intentions (Dailey and Kirk, 1992) regarding participating in the program.

On the other hand, the maximum SNAP benefit that regulations allow is $194 per month for a single person household (U.S. Department of Agriculture, 2019). If the same person invested minimum effort and got award the maximum benefit, they may perceive their situation as very fair and equitable, i.e., highly just; and even if that same person invested three or four times as much effort, they may still perceive their situation as just or equitable as the benefit is still high. Thus, I posit that the effort and benefits of aid will interact to influence perceptions of justice, which will ultimately influence participation in programs. Therefore, the following hypothesis was tested.

H2: The effects of effort and benefits on intent to participation in aid programs will be mediated by the perception of justice.

State Anxiety and Aid Programs

Beyond perceptions of justice and participation in aid programs, there are clearly underlying emotional reactions and costs to seeking assistance through aid programs, such as those produced through stigma (Moffitt, 1983), negative messaging (Nadler, 1986), and institutionalized subordination (Cherrier and Hill, 2018). In fact, researchers have examined both the psychological and time costs to participate in aid programs and found that psychological costs are at least as large as the time costs (Manchester and Mumford, 2009). However, there is less research examining the role of aid regulations on individuals' emotional reactions to aid. Yet, researchers suggest that, when experiencing resource scarcity, individuals' evaluations of their situation can impact whether they perceive it as threatening or not (Cannon, Goldsmith, and Roux, 2018), which can then impact how they react. Thus, I propose, that when facing resource scarcity, aid regulations may interact to influence individual's threat perceptions and therefore state anxiety levels.

First, recall that resource scarcity occurs when there is a discrepancy between an individual's current resource level and a more favorable level (Cannon, Goldsmith, and Roux, 2018). Research suggests that threats can arise from the experience of discrepancy (Jonas et al., 2014). When a threat is present due to a discrepancy, anxiety is created (Gray and McNaughton, 2000; Jonas et al., 2014). For example, when thinking about aid and food scarcity, individuals are experiencing a discrepancy in their food resources, which creates a threat. Individuals may try to reduce their discrepancy and therefore threats by pursuing resources, such as seeking out money to acquire food, visiting a food bank to acquire goods, or visiting a shelter to be served a meal. However, as previously noted, there is no guarantee they will be able reduce their discrepancy in resources due to aid regulations creating variations in benefit levels, and furthermore, aid

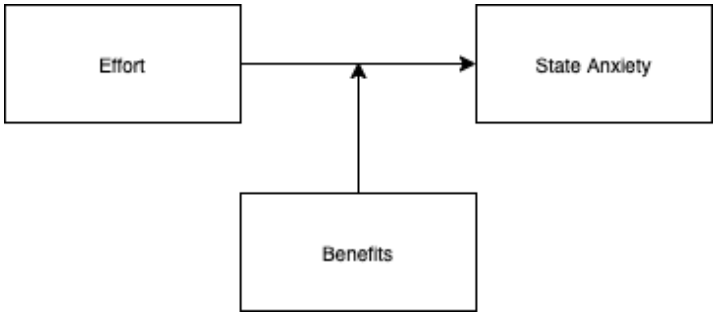
regulations around eligibility effort may make the solution to reduce their discrepancy more or less manageable.

With this in mind, once again consider the SNAP program. An individual can invest effort to apply for assistance and get awarded a mere $15 benefit. If the person only invested minimum effort, then they may feel this is a manageable solution to reduce their discrepancy, thus allowing them to reduce their anxiety. However, if the person invests three or four times as much effort, then they may feel this is a not a manageable solution to reduce their discrepancy, thus not allowing them to lower their anxiety as it is more demanding and does not have much impact to resolve their resource discrepancy.

On the other hand, if the same person invested minimum effort and got awarded the maximum benefit of $194, they may feel this is a manageable solution to reduce their discrepancy, thus allowing them to reduce their anxiety, and even if that same person invested three or four times as much effort, they may still feel this is a manageable solution to reduce their discrepancy, thus allowing them to reduce their anxiety. Thus, I posit that the effort and benefits of aid will interact to influence individual's state anxiety. Based on these arguments, I test the following hypothesis (see Figure 2).

> **H3:** When individuals are offered lower benefits, requiring them to exert higher vs. lower effort to apply for assistance will keep their state anxiety at increased levels, but when individuals are offered higher benefits, the effort effect will disappear.

FIGURE 2



Together, this research examined the holistic impact — cognitive, emotional, and behavioral — of aid programs on resource scarce individuals by looking at the interactive effects aid regulations around effort and benefits on individuals' perceptions of justice, state anxiety, and participation in aid programs. With Coronavirus (COVID-19) top of mind, this research examined individuals in resource scarce situations, such as facing food insecurity due to income or job loss, who are seeking aid to gain access to basic resources. Within a resource scare context, this research examined whether effort and benefits interact to impact individual's perceived justice, which ultimately impacts program participation rates. Furthermore, this research examined whether effort and benefits interact to impact an individual's state anxiety. Together, this research aimed to find ways to better support individuals needing aid due to resource scarcity.

Overview of Studies

To study these proposed reactions to aid regulations, an initial secondary data analysis examined the impact of aid regulation on resource scarce individuals experiencing food insecurity due to a general lack of income. Then, a set of two lab studies examined the impact of aid regulation on resource-scarce individuals experiencing food insecurity due to a pandemic. Below are overviews of each of the studies (see Appendix A for a Summary of Methods for Studies 1-3).

Study 1 was a secondary data analysis, of a federal government aid program (SNAP) that aimed to test for an association between effort and actual participation rates among individuals

with different income levels and therefore different benefit levels. Study 2 was a controlled lab experiment that manipulated effort in terms of cognitive effort as the independent variable with two levels: high versus low effort, and benefits as the moderator with two levels: high versus low effort. It examined the effects of effort and benefits on participation in aid programs. Study 3 was also a controlled lab experiment that manipulated cognitive effort and benefits. It examined the effects of effort and benefits on participation in aid programs, with perceptions of justice introduced as a mediator. Study 3 also looked at the impacts of effort and benefits on state anxiety.

Overall, these studies examined important issues that can not only impact individuals facing resource scarcity and seeking help but also provide insights for providers of aid, e.g., charity and government programs, on how to regulate aid in a way that increases program participation rates, increases perceived justice, and alleviates state anxiety. If charity and government aid are designed to reduce the discrepancy in resources individuals face and improve their well-being, then programs might want to operate in a way that aims to holistically improve beneficiary reactions. Alternatively, individuals may not utilize aid and may experience negative cognitive and emotional consequences. This is particularly important when considering policy adjustments during times of economic crisis.

Study 1: Association Between Effort & Participation Rates Among Individuals with Varying Income Levels

Overview

Study 1 tested H1, which posited that when individuals are offered lower benefits, requiring them to exert higher vs. lower effort to apply for assistance will lower participation in aid programs, but when individuals are offered higher benefits, the effort effects will disappear. Study

1 used a one-factor design, which measured the eligibility effort caused by state aid regulations, as the independent variable, and examined its effects on participation rates for three income groups. In order to test this model, I obtained and analyzed secondary data on the United States Food Stamp Program, known as the Supplemental Nutrition Assistance Program (SNAP), including: overall participation rates by state, share of participants based on income limits, and state program regulations linked to effort to apply for assistance. Below I provide background information on the program and expand on my data collection and analysis.

Background

The Supplemental Nutrition Assistance Program (SNAP) helps low-income individuals buy food, and while SNAP is a federal program, states run the program locally (Social Security Administration, 2019). Though first piloted through the U.S. Department of Agriculture, the Food Stamps Act was established in 1964 via a bill passed in U.S. legislation (U.S. Department of Agriculture, 2018). This bill divided responsibilities for managing the program between the federal government, which included managing funding of benefits, and states, which included managing issuance and certification of benefits, and this bill also required states to develop a plan of operation and eligibility standards (U.S. Department of Agriculture, 2018).

Over time, pieces of legislation have transformed the program including the use of Electronic Benefit Transfer (EBT) through debit cards issued to beneficiaries, which had been adopted by all states as of 2004 (U.S. Department of Agriculture, 2018). With the Agricultural Act of 2014, the USDA began conducting more research, which required state agencies to work with them on their initiatives and create data exchange (U.S. Department of Agriculture, 2018). Today, SNAP is administered in accordance with the provisions of the Food and Nutrition Act of 2008 and the regulations in the Code of Federal Regulations (U.S. Department of Agriculture, 2017).

Currently, SNAP is a means-tested benefit program based on income levels, where more financially strained households receive larger benefits than those less strained (Center on Budget and Policy Priorities, 2019). Typically, a household must meet both gross and net income limits, or they are not eligible for SNAP and cannot receive benefits (U.S. Department of Agriculture, 2021) (see Table 1 for a sample of these limits). In order to qualify for SNAP, an individual's gross monthly income must be at or below 130% of the federal poverty line (Center on Budget and Policy Priorities, 2019). The income limits are set at the same level for the 48 contiguous states and the District of Columbia; however, income limits are higher in Alaska and Hawaii (U.S. Department of Agriculture, 2021). The formula to assign benefits assumes that individuals will spend 30% of net income on food (Center on Budget and Policy Priorities, 2019). Therefore, when applicants have more income, their benefits are reduced according to what is assumed they can afford.

TABLE 1

Household Size	**Gross monthly income (130% of poverty line)**	**Gross yearly income**	**Net monthly income (100% of poverty line)**	**Net yearly income**
1	$1,383	$16,596	$1,064	$12,768
2	$1,868	$22,416	$1,437	$17,244
3	$2,353	$28,236	$1,810	$21,720
4	$2,839	$34,068	$2,184	$26,208

As of March 2021, since each state had a different application form and process, individuals must apply for SNAP by visiting the local SNAP office in the state in which they live (U.S. Department of Agriculture, 2021). Since SNAP is both a means-tested benefit program and regulated at the state level regarding the process to apply, it makes a suitable program for examining both effort and benefits of an aid program. Furthermore, due to the Agricultural Act of 2014, more information on the program is now available at the state and federal level.

Design

Study 1 used a one-factor design which measured the eligibility effort caused by state regulations and examine its effects on participation rates for three income groups: those at ≤ 50% of the poverty line, those at > 50% but ≤ 100% of poverty line, and those at >100% but ≤ 130% of poverty line. Since benefits are calculated based on income limits, individuals in higher income brackets will receive less benefits. For Study 1, there were no participants because secondary data was collected from the United States Food Stamp Program (SNAP). One time period was obtained for each state, and this time period was consistent across all states.

Measures

First, aid regulations from SNAP were obtained for each state and coded based on the level of effort required to be eligible for the program at a state level. Then, overall participation rates in the program by state were obtained. Next, since the program benefits are based on income, the share of people that participate at three income levels were obtained. Lastly, since Alaska and Hawaii do not set benefits the same level of the other 48 contiguous states and the District of Columbia, they were excluded from the data and analysis. Below are details regarding the measures obtained regarding SNAP.

Regulation of Aid: Effort Measure

For SNAP, while the federal government manages funding of benefits, states manage issuance and certification of benefits as well as operation and eligibility standards (U.S. Department of Agriculture, 2018). SNAP's statutes and regulations give state agencies various policy options, which are designed to create flexibility to adapt the programs to meet the needs of people in their states (U.S. Department of Agriculture, 2017). Furthermore, technology has allowed states options for administering the program to improved customer service and integrity

(U.S. Department of Agriculture, 2017). Overall, SNAP's flexibility should help states better reach those in need and streamline administration and operations (U.S. Department of Agriculture, 2017).

Given this, each U.S. state had a different application form and process (U.S. Department of Agriculture, 2021), and there are at least 28 program and administrative policies in which states have options to control, such as reporting certification length (U.S. Department of Agriculture, 2017). For reporting certification length, states have the option to certify households, to be eligible for aid without needing to recertify, for 3, 4, 6, 12, 24 months, or be change only (U.S. Department of Agriculture, 2017), meaning only reporting when changes occur, and the state is independently responsible for what option it chooses under this policy. The Food and Nutrition Service (FNS) surveys states to determine which options utilized (U.S. Department of Agriculture, 2017). The State Options Report: Fourteenth Edition, which can be found at https://www.fns.usda.gov/snap/waivers/state-options-report, catalogs all U.S. state options in place as of the end of 2017 (U.S. Department of Agriculture, 2017). For example, Wyoming has chosen to use traditional case management, certify benefits at 4, 5, 6, or 12 months, and have no electronic files, online application, or call centers (U.S. Department of Agriculture, 2017) (see Figure 3 for a full list of Wyoming's options).

FIGURE 3

Wyoming—Supplemental Nutrition Assistance Program	
Program Administration	State-administered
SNAP Certification Workflow and Case Management	Traditional case management
Joint Processing—Medicaid	Neither joint application or processing
Joint Processing—TANF	Joint application & processing
Reporting Requirements	Simplified reporting only
Simplified Reporting—Certification Length	4, 5, 6, & 12 Months
Income and Resource Alignment with Medicaid and TANF	Resources
Treatment of Self-Employment Income	Another method
Simplified Homeless Housing Cost	No
Standard Utility Allowances (SUAs)	Mandatory SUAs
Treatment of Income and Deductions of Ineligible Non-Citizens—Pre PRWORA	Count all but prorated share
Treatment of Income and Deductions of Ineligible Non-Citizens—Post PRWORA	Count all but prorated share
Treatment of Child Support Payments	Child support income expense deduction
Child Support Related Disqualification	None
Comparable Disqualifications	No
Drug Felony Disqualifications	No ban
Work Requirements and Disqualification Policy	Extended DQ
Able-Bodied Adults Without Dependents (ABAWDs) Time Limit Waiver	Partial ABAWD time limit waiver
Able-Bodied Adults Without Dependents (ABAWDs) 15 Percent Exemption	No use of 15 percent exemption
Broad Based Categorical Eligibility (BBCE)	No
Transitional Benefits Alternative (TBA)	No
Demonstrations for the Elderly and Disabled	SMD
Combined Application Projects (CAPs)	No
Electronic Case Files	No electronic files
Online Application	No online application
Online Case Management	No online case management
Call Centers	No call center

(U.S. Department of Agriculture, 2017)

After reviewing these program policy options, I identified a set of policy options that can be varied to require more or less effort (e.g., time) from the applicant. Specifically, I examined reporting certification length, online applications, electronic case files, case management, call centers, broad-based categorical eligibility (BBCE), joint application- Medicaid, joint application-Temporary Assistance for Needy Families (TANF), and transitional benefits alternative (TBA).

After reviewing each policy, I coded the option that each state elected for as requiring higher effort (1) or lower effort (0) from the applicant (see Table 2 for a summary of the coding details). For example, with certification length, 3 months requires the most effort as applicants must recertify every 3 months. On the other hand, 24 months requires the least effort as applicants must recertify every 24 months. Below I will expand upon each of these policies and how they impact effort.

TABLE 2

Variable	**Item (Low Effort)**	**Code**	**Item (High Effort)**	**Code**
Case Management	All modern alternatives to traditional case management	0	Traditional case management	1
BBCE	Yes	0	No	1
Electronic Files	Completely electronic files statewide	0	All higher effort alternatives	1
Online Application	Apply & recertify	0	All higher effort alternatives	1
Call Center	Yes	0	No	1
Reporting Certification	Change reporting only	0	All higher effort alternatives	1
	12 & 24 months only			
	12 months only			
Joint Application-Medicaid	Joint application & processing (all or some cases)	0	All higher effort alternatives	1
Joint Application-TANF	Joint application & processing (all or some cases)	0	All higher effort alternatives	1
TBA	Yes	0	No	1

Reporting Certification Length. State have flexibility in how long they certify households (U.S. Department of Agriculture, 2017), which means they can ask households to recertify more or less frequently. States agencies can certify elderly or disabled households up to 24 months and other households up to 12 months (U.S. Department of Agriculture, 2017). Thus, states that are asking households to report only changes or to reapply every 12-24 months will require less effort from beneficiaries and were coded as low effort (0), and states that are asking households to report

more frequently will require more effort from beneficiaries and were coded as high effort (1). To do this, I first coded effort, then a research assistant did the coding. Lastly, I compared the two sets of codes to compute the reliability (% of agreement) which ranged from .90 to 1.00 (see Table 3 for all coding reliability).

TABLE 3

Item	**Agreement**	**Reliability**
Case Management	44/49	.90
Reporting Certification	45/49	.92
Broad Based Categorical Eligibility	49/49	1.00
Electronic Files	47/49	.96
Online Application	48/49	.98
Call Center	49/49	1.00
Joint Application- Medicaid	48/49	.98
Joint Application- TANF	49/49	.98
TBA	48/49	.98

Online Applications. Allowing households to apply and/or recertify online can improve customer service and program efficiency (U.S. Department of Agriculture, 2017), which can save households time from driving into a physical office to apply. Thus, states allow households to apply and/or recertify online will require less effort from beneficiaries and were coded as low effort (0), and states that do not allow this will require more effort from beneficiaries and were coded as high effort (1).

Electronic Case Files. Electronic case files allow states to create a less paper intensive certification process and increases the efficiency of the certification process (U.S. Department of Agriculture, 2017), which saves households from delivering documents in person. Thus, states that allow completely electronic files statewide will require less effort from beneficiaries and were coded as low effort (0), and states that do not allow this will require more effort from beneficiaries and were coded as high effort (1).

Case Management. States can choose how to organize their certification process, and this process may vary by county, project area, or local office (U.S. Department of Agriculture, 2017). Alternatives to traditional case management allows for cases to be pooled so that an application can be worked on by multiple caseworkers (U.S. Department of Agriculture, 2017), which increases the efficiency and time to process applications. Thus, states that have modernized and do not use traditional case management will require less effort from beneficiaries and were coded as low effort (0), and states use traditional case management will require more effort from beneficiaries and were coded as high effort (1).

Call Centers. Call centers can support the certification process by providing general SNAP information, application and benefit status, conducting certification interviews, processing changes, and even directly certifying and recertifying households (U.S. Department of Agriculture, 2017), which saves time that households need to spend visiting their local offices. Thus, states that offer a call center will require less effort from beneficiaries and were coded as low effort (0), and states that do not offer this will require more effort from beneficiaries and were coded as high effort (1).

Broad-Based Categorical Eligibility (BBCE). Households that receive cash benefits from another means-tested program (e.g., Supplemental Security Income (SSI)) are categorical eligible for food stamps (U.S. Department of Agriculture, 2017). States have the ability to expand this categorical eligibility to households that receive non-cash benefits funded by these programs (U.S. Department of Agriculture, 2017), which makes households automatically eligible. Thus, states that have broad-based categorical eligibility will require less effort from beneficiaries and were coded as low effort (0), and states that do not have this will require more effort from beneficiaries and were coded as high effort (1).

Joint Application - Medicaid. States administer multiple federal programs and have developed methods to integrate SNAP and Medicaid, specifically on application and processing, by allowing households to apply using the same application (U.S. Department of Agriculture, 2017), which saves households from applying separately. Thus, states that have joint SNAP and Medicaid applications will require less effort from beneficiaries and were coded as low effort (0), and states that do not have this will require more effort from beneficiaries and were coded as high effort (1).

Joint Application - TANF. States administer multiple federal programs and have developed methods to integrate SNAP and TANF, specifically on application and processing, by allowing households to apply using the same application (U.S. Department of Agriculture, 2017), which saves households time from applying separately. Thus, states that have joint SNAP and TANF applications will require less effort from beneficiaries and were coded as low effort (0), and states that do not have this will require more effort from beneficiaries and were coded as high effort (1).

Transitional Benefits Alternative (TBA). States can offer transitional benefits alternative (TBA) to households leaving state-funded cash assistance programs by providing them a set benefit and eliminating reporting requirements during this time (U.S. Department of Agriculture, 2017), which saves households time applying. Thus, states that have a transitional benefits alternative (TBA) will require less effort from beneficiaries and were coded as low effort (0), and states that do not have this will require more effort from beneficiaries and were coded as high effort (1).

Once each coded policy was verified, to get a total effort measure by state, I summed the effort required across all nine policy options (reporting certification length, online applications, electronic case files, case management, call centers, broad-based categorical eligibility (BBCE),

joint application- Medicaid, joint application- TANF, and transitional benefits alternative (TBA)) (see Table 4 for total effort measure by state). For example, Wyoming and Kansas had some of the highest effort measures with scores of 8 and 6, respectively. On the other hand, New Mexico and Delaware had some of the lowest effort measures with scores of 0 and 1, respectively. The total effort measure served as my independent variable.

TABLE 4

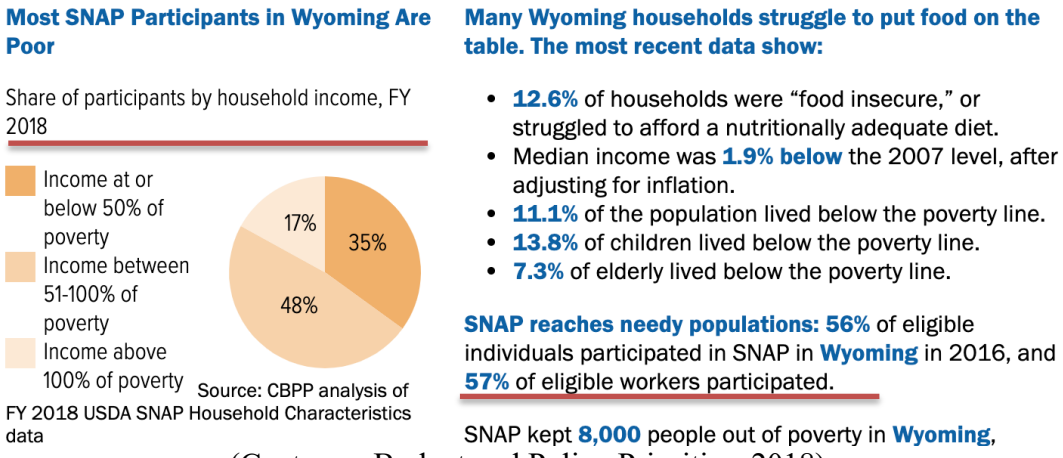
State	Case Management	Reporting Certification	BBCE	Electronic Files	Online App	Call Center	Joint Medicaid	Joint TANF	TBA	Total
Alabama	0	1	0	0	0	1	1	1	1	5
Arizona	0	1	0	0	0	0	0	0	0	1
Arkansas	1	0	1	0	1	1	1	0	1	5
California	0	0	0	0	0	0	0	0	0	0
Colorado	0	1	0	1	0	1	0	0	0	2
Connecticut	0	0	0	1	0	1	0	0	0	1
DC	0	1	0	1	1	1	1	0	0	4
Delaware	0	0	0	0	0	0	0	0	1	1
Florida	0	1	0	0	0	1	0	0	1	2
Georgia	0	1	0	1	1	1	0	0	0	3
Idaho	0	1	0	0	0	1	0	0	1	2
Illinois	0	0	0	1	0	1	0	0	0	1
Indiana	0	0	1	0	1	0	1	0	1	4
Iowa	0	1	0	0	1	1	1	0	1	4
Kansas	0	0	1	1	1	1	1	0	1	6
Kentucky	0	0	0	0	1	0	0	0	1	2
Louisiana	0	0	1	0	0	1	1	0	1	3
Maine	0	0	0	1	0	0	0	0	0	1
Maryland	0	0	0	0	1	1	0	0	0	1
Massachusetts	0	1	0	0	1	1	1	1	0	4
Michigan	1	0	0	0	0	1	0	0	1	2

Minnesota	0	0	0	1	1	1	1	0	1	4
Mississippi	1	0	0	0	0	1	1	0	1	3
Missouri	0	0	1	1	0	0	0	0	1	3
Montana	0	0	0	0	0	1	0	0	1	1
Nebraska	0	1	0	0	0	0	1	0	0	2
Nevada	0	1	0	0	1	1	0	0	1	3
New Hampshire	0	1	0	0	0	1	0	0	0	1
New Jersey	0	1	0	1	1	1	1	0	1	6
New Mexico	0	0	0	0	0	0	0	0	0	0
New York	0	1	0	1	0	0	0	0	0	2
North Carolina	0	1	0	1	1	1	0	1	0	4
North Dakota	0	1	0	0	0	1	0	0	1	3
Ohio	0	1	0	1	0	0	0	0	1	3
Oklahoma	0	0	0	0	0	0	0	0	0	0
Oregon	0	1	0	0	0	0	1	0	0	2
Pennsylvania	0	0	0	1	0	0	0	0	0	1
Rhode Island	0	0	0	0	1	1	0	0	1	2
South Carolina	0	0	0	0	1	0	1	0	1	3
South Dakota	0	0	1	0	0	1	0	0	1	3
Tennessee	0	0	1	0	0	0	1	0	0	2
Texas	0	1	0	0	0	0	0	0	1	2
Utah	0	1	1	0	0	0	0	0	1	3
Vermont	0	0	0	0	0	1	1	0	1	2
Virginia	0	1	1	1	0	1	0	0	0	3
Washington	0	0	0	0	0	1	1	0	0	1
West Virginia	0	0	0	0	0	0	0	0	1	1
Wisconsin	0	0	0	0	0	0	0	0	0	0
Wyoming	1	1	1	1	1	1	1	0	1	8

Participation: Individuals with Varying Income Levels Measure

Each state reports a number of descriptive factors about their participants, including an overall participation rate in their programs based on what percent of needy, eligible individuals participate in the program. The Center on Budget and Policy Priorities has reports for all states, which can be found at https://www.cbpp.org/research/food-assistance/a-closer-look-at-who-benefits-from-snap-state-by-state-fact-sheets. For example, Wyoming has an overall 56% participation rate, while Delaware has a 99% participation rate (Center on Budget and Policy Priorities, 2018) (see Figure 4).

FIGURE 4



(Center on Budget and Policy Priorities, 2018)

In addition, each U.S. state reports the share of their participants by household income, at three income levels: $\leq$50% of the poverty line, > 50% but $\leq$100% of poverty line, and > 100% but $\leq$130% of the poverty line (see Table 5 for a sample of these income ranges).

TABLE 5

Household Size	Income Range 1 (% of Poverty line)		Income Range 2 (% of Poverty line)		Income Range 3 (% of Poverty line)	
	0%	50%	51%	100%	101%	130%
1	$0	$6,383	$6,511	$12,766	$12,894	$16,596
2	$0	$8,622	$8,794	$17,243	$17,416	$22,416
3	$0	$10,860	$11,077	$21,720	$21,937	$28,236
4	$0	$13,103	$13,365	$26,206	$26,468	$34,068

For example, the share of Wyoming participants at ≤ 50% of the poverty line was 35%, at > 50% but ≤ 100% of poverty line was 48%, and at > 100% but ≤ 130% of the poverty line was 17% (Center on Budget and Policy Priorities, 2018) (refer back to Figure 4). On the other hand, the share of Delaware participants at ≤ 50% of the poverty line was 35%, at > 50% but ≤ 100% of poverty line was 40%, and at > 100% but ≤ 130% of the poverty line was 25% (Center on Budget and Policy Priorities, 2018).

Thus, I obtained the overall participation rate per state and the share of their participants by household income at each of the three income levels (see Table 6 for share of participants at each income level).

TABLE 6

State	Share of Participants with Income ≤ 50% of the poverty line	Share of Participants with Income > 50% but ≤ 100% of poverty line	Share of Participants with Income > 100% but ≤ 130% of the poverty line
Alabama	37	48	15
Arizona	47	36	17
Arkansas	37	52	11
California	58	24	18
Colorado	38	45	17
Connecticut	33	41	26
DC	58	30	12
Delaware	35	40	25

Florida	30	50	20
Georgia	43	41	16
Idaho	31	52	17
Illinois	41	42	17
Indiana	33	53	14
Iowa	34	44	22
Kansas	31	54	15
Kentucky	43	47	10
Louisiana	45	45	10
Maine	17	56	27
Maryland	36	42	22
Massachusetts	30	46	24
Michigan	32	44	24
Minnesota	34	42	24
Mississippi	39	50	11
Missouri	35	49	16
Montana	32	45	23
Nebraska	36	45	19
Nevada	45	36	19
New Hampshire	18	56	26
New Jersey	24	52	24
New Mexico	40	46	14
New York	26	52	22
North Carolina	49	38	13
North Dakota	34	41	25
Ohio	33	49	18
Oklahoma	43	47	10
Oregon	38	36	26
Pennsylvania	26	47	27
Rhode Island	32	46	22
South Carolina	38	49	13
South Dakota	41	40	19
Tennessee	43	46	11

Texas	42	41	17
Utah	39	46	15
Vermont	18	45	37
Virginia	37	51	12
Washington	35	44	21
West Virginia	39	44	17
Wisconsin	29	43	28
Wyoming	35	48	17

First, I pulled the data, then a research assistant did as well. Lastly, I compared the two sets of data to compute the reliability (% agreement) which ranged from .90 to 1.00 (see Table 7 for all coding reliability).

TABLE 7

Item	**Agreement**	**Reliability**
Participation for Income ≤ 50% of the poverty line	48/49	.98
Participation for Income > 50% but ≤ 100% of poverty line	49/49	1.00
Participation for Income >100% but ≤ 130% of poverty line	49/49	1.00
Total Participation	48/49	.98

Recall, SNAP is a means-tested benefit program, where the formula to assign benefits assumes that individuals will spend 30% of net income on food (Center on Budget and Policy Priorities, 2019). Thus, I expected that individuals with higher income (at >100% but ≤ 130% of poverty line) will receive less benefits than those with lower income. I presumed that benefits were designed to disappear when an individual is making over 130% of the poverty line. For simplicity, I assumed that for each additional percentage point of income a person makes, their benefits will reduce by $1.48, so that when a person reaches 131% of the poverty line, they will receive $0 in benefits. This is based on the max benefit amount of $194 per month for a single person household. Thus, below are how benefits would decrease based on income level (see Table 8).

TABLE 8

Income Ranges (% of Poverty line)		**Max Benefit/Month for a Single Person**	**Min Benefit/Month for a Single Person**
0%	50%	$194.00	$119.95
51%	100%	$118.47	$45.91
101%	130%	$44.43	$1.48
131%	+	$ -	-

Assuming that benefits changed for people in different income brackets, I calculated a participation rate by income bracket. Since states report participants in the income brackets as a share of overall participation, I converted this to a participation rate by income bracket, by multiplying the share in each income bracket by the state's total participation rate (see Table 9). For example, Wyoming has an overall participation rate of 56%, and the share of Wyoming participants at $\leq$ 50% of the poverty line was 35%, at > 50% but $\leq$ 100% of poverty line was 48%, and at > 100% but $\leq$ 130% of the poverty line was 17% (Center on Budget and Policy Priorities, 2018). Thus, the equation for calculating Wyoming's participation rate at $\leq$ 50% of the poverty line was calculated by multiplying its overall participation rate (56) by its share of participants at that income level (35%) which equaled 19.60. This was repeated at > 50% but $\leq$ 100% of poverty line by multiplying its overall participation rate (56) by its share of participants at that income level (48%) which equaled 26.88, and it was repeated at > 100% but $\leq$ 130% of the poverty line by multiplying its overall participation rate (56) by its share of participants at that income level (17%) which equaled 9.52.

Thus, a state's total participation is the sum of those participating in each income bracket. For example, Wyoming's participation rate at $\leq$ 50% of the poverty line was 19.60%, at > 50% but $\leq$ 100% of poverty line was 26.88%, at >100% but $\leq$ 130% of poverty line was 9.52%; this

equals a total participation rate of 56%. On the other hand, Delaware's participation rate at ≤ 50% of the poverty line was 34.65%, at > 50% but ≤ 100% of poverty line was 39.60%, at >100% but ≤ 130% of poverty line was 24.75%; this equals a total participation rate of 99%. These three-participation rate by income bracket measures became my dependent variables.

TABLE 9

State	Participation for Income ≤ 50% of the poverty line	Participation for Income > 50% but ≤ 100% of poverty line	Participation for Income >100% but ≤ 130% of poverty line	Total Participation
Alabama	32.19	41.76	13.05	87
Arizona	34.78	26.64	12.58	74
Arkansas	26.64	37.44	7.92	72
California	41.76	17.28	12.96	72
Colorado	29.64	35.1	13.26	78
Connecticut	30.03	37.31	23.66	91
DC	56.26	29.1	11.64	97
Delaware	34.65	39.6	24.75	99
Florida	27.6	46	18.4	92
Georgia	36.98	35.26	13.76	86
Idaho	26.04	43.68	14.28	84
Illinois	41	42	17	100
Indiana	26.4	42.4	11.2	80
Iowa	29.92	38.72	19.36	88
Kansas	23.87	41.58	11.55	77
Kentucky	32.68	35.72	7.6	76
Louisiana	37.8	37.8	8.4	84
Maine	15.3	50.4	24.3	90
Maryland	32.76	38.22	20.02	91
Massachusetts	27.3	41.86	21.84	91
Michigan	32	44	24	100
Minnesota	28.56	35.28	20.16	84

Mississippi	32.37	41.5	9.13	83
Missouri	31.15	43.61	14.24	89
Montana	27.84	39.15	20.01	87
Nebraska	28.8	36	15.2	80
Nevada	37.35	29.88	15.77	83
New Hampshire	14.4	44.8	20.8	80
New Jersey	19.44	42.12	19.44	81
New Mexico	40	46	14	100
New York	24.18	48.36	20.46	93
North Carolina	42.14	32.68	11.18	86
North Dakota	21.08	25.42	15.5	62
Ohio	28.05	41.65	15.3	85
Oklahoma	35.26	38.54	8.2	82
Oregon	38	36	26	100
Pennsylvania	25.74	46.53	26.73	99
Rhode Island	32	46	22	100
South Carolina	30.4	39.2	10.4	80
South Dakota	34.03	33.2	15.77	83
Tennessee	39.99	42.78	10.23	93
Texas	30.66	29.93	12.41	73
Utah	27.3	32.2	10.5	70
Vermont	18	45	37	100
Virginia	27.75	38.25	9	75
Washington	35	44	21	100
West Virginia	37.05	41.8	16.15	95
Wisconsin	27.26	40.42	26.32	94
Wyoming*	19.6	26.88	9.52	56

*0verall participation rate of Wyoming = 56%. The share of Wyoming participants at $\leq$ 50% of the poverty line = 35%. Wyoming's participation rate at $\leq$ 50% of the poverty line = 56 x .35 = 19.60. The share of Wyoming participants at > 50% but $\leq$ 100% of poverty line = 48%. Wyoming's participation rate > 50% but $\leq$ 100% of poverty line = 56 x .48 = 26.88. Wyoming's participation rate at > 100% but $\leq$ 130% of the poverty line = 17%. Wyoming's participation rate at > 100% but $\leq$ 130% of the poverty line = 56 x .17 = 9.52. Thus, the overall participation rate of Wyoming = 19.60 + 26.88 + 9.52 = 56.

Analyses

As mentioned above, the total effort measure, based on the policy options each state opted for, is my independent variable, and the three-participation rates by income bracket measures are my dependent variables, as benefits change according to income level. In order to analyze the data, I ran three one-factor ANOVAs, and I used spotlight analysis to examine participation at higher vs. lower levels of effort. In Study 1, the mean effort was 2.49, and for the spotlight analysis, lower effort was 0.81 or less (mean – 1 SD), while higher effort was 4.17 or more (mean + 1 SD).

Since SNAP is a means-tested benefit program where more financially strained households receive larger benefits than those less strained, I expected that effort would not influence participation among individuals at $\leq$ 50% of the poverty line because they should be qualifying for the maximum benefits. Additionally, I expected that effort would not influence participation among individuals at > 50% but $\leq$ 100% of poverty line because while they will likely not qualify for the maximum benefits, they should still qualify for higher benefits. However, I expected that effort would influence participation among individuals at >100% but $\leq$ 130% of poverty line because they would qualify for the lowest benefits.

Results

Participation Among Individuals at $\leq$ 50% of the Poverty Line. As expected, a one-factor ANOVA found the main effect of effort on participation among individuals at $\leq$ 50% of the poverty line was not significant ($F(1, 47) = 1.98$, $p = .166$, $M = 30.80$). I used spotlight analysis to look at the effect of lower effort (mean -1 SD) = 0.81 versus higher effort (mean +1 SD) = 4.17 on participation rates. There was no significant difference in participation when effort was higher ($M_{Higher} = 29.27$) versus lower ($M_{Lower} = 32.32$).

Participation Among Individuals > 50% but ≤ 100% of Poverty Line. As expected, a one-factor ANOVA found the main effect of effort on participation among individuals at > 50% but ≤ 100% of poverty line was not significant ($F(1, 47) = 1.33$, $p = .254$, $M = 38.55$). I used spotlight analysis to look at the effect of lower effort (mean -1 SD) = 0.81 versus higher effort (mean +1 SD) = 4.17 on participation rates. There was no significant difference in participation when effort was higher ($M_{Higher} = 37.46$) versus lower ($M_{Lower} = 39.65$).

Participation Among Individuals at >100% but ≤ 130% of poverty line. As expected, a one-factor ANOVA found the main effect of effort on participation among individuals at >100% but ≤ 130% of poverty line was significant ($F(1, 47) = 6.08$, $p = .017$, $M = 16.41$). I used spotlight analysis to look at the effect of lower effort (mean -1 SD) = 0.81 versus higher effort (mean +1 SD) = 4.17 on participation rates. When effort was higher (+1SD), participation was lower ($M_{HigherEffort} = 14.29$); when effort was lower (-1SD), participation was higher ($M_{LowerEffort} = 18.52$).

Discussion

Study 1 showed initial support for my hypotheses. When individuals had higher income and therefore lower aid benefits, there was an association between effort to apply for assistance and participation in aid programs. Results showed that, among individuals at >100% but ≤ 130% of poverty line therefore receiving the lowest benefits, aid participation decreased when more effort was required to apply for assistance; however, there was no significant effect of effort on participation among individuals at ≤ 50% of the poverty line and individuals at > 50% but ≤ 100% of poverty line. These findings indicate the importance of both effort and benefits when trying to understand participation in aid programs.

Recall, Wyoming had one of the highest effort scores at 8, and it had a participation rate of 9.52% among individuals at >100% but ≤ 130% of poverty line. This is well below the

participation rate at average effort and low effort at 16.41% and 18.52% respectively. On the other hand, Delaware had one of the lowest effort scores at 0, and it had a participation rate of 24.75% among individuals at >100% but $\leq$130% of poverty line. This seems to be the result of reducing effort on its applicants to increase participation.

To expand upon these findings and test the causal effects of effort and benefits on participation, Studies 2 and 3 were conducted. Study 2 examined cognitive effort as the average reading level of adults participating in programs, like Food Stamps, is 5th grade; yet, many states have statements at the 9th grade level and above (O'Brien et al., 2001). Then, Study 3 looked at time effort as applications for programs. Study 3 also builds on Studies 1 and 2 by: 1) introducing perceived justice as important mediator of the effects of effort and benefits on participation rates, and 2) looking at secondary effects of effort and benefits on well-being, specifically state anxiety.

Study 2: Effects of Aid Benefits & Effort (Cognitive) on Participation Rates

Overview

Study 2 tested H1. It posited that, when individuals are offered lower benefits, requiring them to exert higher vs. lower effort to apply for assistance will lower intent to participate in aid programs, but when individuals are offered higher benefits, the effort effect will disappear. This study used a two-factor design which manipulated the independent variable, effort, and moderator, benefits, between-subjects. In order to test this model in a resource scarce context, I studied benefits for food to individuals from a non-profit charity during a pandemic (disease outbreak across the world) that has caused furloughs, reduced wages, and job loss. Participants were randomly assigned to imagine either a higher or lower effort condition, and as a moderating variable, they were also randomly assigned a higher or lower benefit condition. Then, outcome

measures were taken for intent to participate in the aid program. For descriptive purposes, I also measured participants' household income, household size, gender, ethnicity, education level, and age.

Design and Participants

Study 2 manipulated the independent variable, the effort, between-subjects. There were two manipulated levels of the independent variable: higher effort and lower effort. Study 2 focused on cognitive effort, and participants were faced with higher or lower cognitive effort when applying for aid. Then, measures were taken for intent to participate in the aid program.

The study was limited to United States participants that speak English. No other groups were excluded in order to broadly study resource scarcity, not just those experiencing chronic scarcity. Additionally, as noted, during the first three months of the Coronavirus (COVID-19) pandemic, over six million people enrolled in food stamps impacting affluent and poor communities, and in fact, reports of food stamp caseloads were rising more quickly in richer versus poorer counties (New York Times, 2020). Qualtrics was used to collect the data, and 215 participants were recruited using Prolific and received a small amount of money (no less than $6.50 per hour) for their participation. The recruitment posting read: "We are conducting an academic survey about charity aid, which should take about 10 minutes. If you choose to be in the study, you may be asked to imagine yourself in a scenario, describe how it would feel in a scenario, and answer some survey questions. The survey will take about 10 minutes to complete. At the end of the survey, you will be redirected back to this site to receive credit for taking my survey."

After cleaning the data to remove participants who failed to pay attention (N = 5) as well as non-attentive participants who exhibited a response bias to multiple question sets, such that they answered questions the same way (e.g., always answering 1 or 7) no matter how the questions

were worded or the question topic, (N = 9), 201 participants remained. There were fewer male than female participants (36.8% versus 63.2%). Participants were split between only having some college or less (42.3%) and obtaining at least a 2-year college degree or higher (57.7%). Participants were also either unemployed or unable to work (25.9%), employed (54.7%), or a student or retired (19.4%). The majority of participants were Caucasian (67.2%), and the mean age was 35.43, with a range of 18-79.

From a household and income perspective, the mean household size was 2.85 (with a median of 3.00). The mean household annual income was $64,238 (with a median of $50,000). The mean household income in the prior month was $5,091 (with a median of $3,000). Breaking income down by member of the household, the mean per member annual income was $26,771 (with a median of $20,000). The mean per member income in the prior month was $2,245 (with a median of $1,400). Given the demographics of my sample, not everyone may have been in a current state of resource scarcity; however, all participants were primed, using past manipulations, to imagine the resource scarce situation described below.

Manipulations and Measures

First, participants were placed in a resource-scarce situation and randomly assigned to an effort and benefit condition. Lastly, intent to participate in the aid program and other measures were taken. Below are details regarding the manipulations for the conditions and measures taken.

Resource Scarcity Context

There are several methods used to place participants in a resource scarce context, such as having individuals imagine a situation that induces individual-level scarcity or to present them with macro-level indicators of their environment (Cannon, Goldsmith, and Roux, 2018). Figure 5 shows a summary of manipulations.

FIGURE 5

Types of Manipulated Resource Scarcity

Types of resource scarcity	Supporting citations
Personal resource scarcity	
Financial deprivation	Briers and Laporte (2013), Fernbach et al. (2015), Nelson and Morrison (2005), Pitesa and Thau (2014), Sharma et al. (2014), Yoon and Kim (2018)
Number of guesses or points in an experimental game	Shah et al. (2012)
Time restrictions	Fernbach et al. (2015), Shah et al. (2012)
Recalling personal incidences of scarcity	Mittal and Griskevicius (2014), Roux et al. (2015), Tully et al. (2015)
Imagining growing up with resource scarcity	Briers and Laporte (2013), Mehta and Zhu (2016)
Listing what one cannot do without different resources	Roux et al. (2015)
Perceived time scarcity	Kurtz (2008)
Performing or observing the act of emptying	Levontin et al. (2015)
Induced hunger	Aarøe and Petersen (2013), Briers et al. (2006), Yam et al. (2014)
Social comparison based	
Comparison to better-off others	Sharma and Alter (2012), Sharma et al. (2014)
Macro-level	
Economic threat news article	Durante et al. (2015), Hill, Rodeheffer, et al. (2012), Mittal and Griskevicius (2014), Netchaeva and Rees (2016), White et al. (2013)
Pictures slideshow	Durante et al. (2015), Hill, Rodeheffer, et al. (2012), Mittal and Griskevicius (2014), Rodeheffer et al. (2012), White et al. (2013)
Sex ratios	Durante et al. (2012), Griskevicius et al. (2012)
Product and marketing	
Limited quantity	Inman et al. (1997), Lynn (1989), Verhallen and Robben (1994), Worchel et al. (1975), Zhu and Ratner (2015)
Time restrictions	Brannon and Brock (2001a), Inman et al. (1997), Suri, Kohli, and Monroe (2007)
Scarcity appeals	Bozzolo and Brock (1992), Cialdini (2009), Aggarwal et al. (2011), Kristofferson et al. (2017)
Conceptual primes	
Non-conscious priming	Krosch and Amodio (2014)
Anagram task	Rodeheffer et al. (2012)
Environmental cues	Laran and Salerno (2013)
Lexical decision task	Laran and Salerno (2013), Zhu and Ratner (2015)

(Cannon, Goldsmith, and Roux, 2018)

One example of past priming procedures is having participants read about growing up with abundant financial versus meager resources or having an abundance of money versus a restricted amount of money (Vohs, Mead, and Goode, 2006). Another example of past priming procedures is having participants read a news article about an economic downturn, which resulted in participants perceiving lower financial security in their local environment (Hill et al., 2012; see Appendix B for a sample of materials from literature used for the studies). Like the latter procedure above, this study asked all participants to imagine an economic downturn impacting their ability to secure resources.

While a number of economic downturns could have been utilized, due to recent events around COVID-19*, I asked participants to imagine an economic downturn due to a pandemic. Thus, participants were asked to imagine that a pandemic has occurred forcing companies to close and furlough or lay off employees, and indicators suggested job losses could total 47 million in the United States with the unemployment rate possibly hitting 32% over the next few months. As a result, they had experienced temporary loss of their income and would likely not be able to return to normal income levels for months; however, it could be longer and is unclear when they might be able to return to normal income levels. Hence, they would be facing financial hardship and would not have enough money to cover basic needs: housing (rent or mortgage payments), utilities such as electricity and water, clothing, and food.

While in this situation, they could participate in a number of different programs to help them get access to food, and they found a program to apply to offered by a non-profit charity that will provide financial assistance for food (up to $194 per month per member of their household). However, they would need to apply, and the final amount of benefit they would receive would be based on the application they would need to complete. It could be up to $194 per month per member of their household but may be less based on their application.

*For Study 2 and 3, participants were collected during the COVID-19 pandemic around the time vaccines had started to be approved for administration. At that time, COVID-19 variants were beginning to spread, and there was a high probability that individuals would still need to wear masks and take precautions for a while.

Regulation of Aid: Effort Manipulation

While there are a number of ways that effort can be invested to reduce resource scarcity, Study 2 utilized cognitive effort. One element of cognitive effort is cognitive strain — the level of

cognitive resources used (Cooper-Martin, 1994), so Study 2 focused on that component. Cognitive effort can be manipulated and measured in a number of ways, such as comparing alternatives (Garbarino and Edell, 1997), memorizing a number (Shiv and Fedorikhin, 1999), or adjusting question difficulty (Gawronski, 2003), to require higher or lower cognitive effort.

Specifically, Study 2 focused on question difficulty. This is important to consider as the average reading level of adults participating in programs, like Food Stamps, is 5th grade (O'Brien et al., 2001); yet, while North Carolina's food stamps certification statement meets a 5th grade reading level, many other states have certification statements at the 9th grade level and above, such as the District of Columbia (O'Brien et al., 2001). Thus, for Study 2, all participants were presented with the same number of questions to control for time effort, but they were randomly assigned to see a set of questions set at different education levels to put individuals in a higher or lower cognitive effort condition when applying.

After reviewing several food stamp applications, I compiled a list of common application questions and divided them based on the level of difficulty. The level of difficulty and therefore cognitive effort required by questions were based on question readability and education level assessed using the Flesch-Kincaid Grade Level and Reading Ease test. If a complimentary higher or lower difficulty question was not available on the applications I reviewed, I edited the original question to change the question difficulty. With this, the questions in each set (see Table 10 for the full list of questions) were designed to ask about the same topic but require higher or lower cognitive effort. For the higher cognitive effort condition, the Flesch-Kincaid Grade Level was 9.3, and Flesch-Kincaid Reading Ease was 55.2, which makes it fairly difficult to read and understand. For the lower cognitive effort condition, the Flesch-Kincaid Grade Level was 5.3, and Flesch-Kincaid Reading Ease was 80.8, which makes it easy to read and understand.

TABLE 10

Lower Cognitive Effort *(Flesch Reading Ease = 80.8; Flesch-Kincaid Grade Level = 5.3)*	**Higher Cognitive Effort** *(Flesch Reading Ease = 55.2; Flesch-Kincaid Grade Level = 9.3)*
In the past month, did anyone in your home get a one-time payment of money?	In the past 30 days, did you, your spouse, or anyone in the household receive a lump sum payment?
Does anyone in your home move from place to place for work and have less than $100 on hand?	Are you or anyone in the household a migrant or seasonal worker with less than $100 in liquid assets?
Does anyone age 60 or older, or anyone with a disability, pay medical costs?	Are you living with an elderly (60 or older) or disabled person that has any out-of-pocket medical expenses?
Is your home provided to you free of charge?	Is shelter provided to you free of charge?
Is anyone in the home considered self-employed?	Is anyone in the home considered self-employed? This includes, but is not limited to, earning money from babysitting, selling goods such as make-up or kitchenware, selling goods on the internet or selling homemade/homegrown food products?
Is anyone getting college scholarships, grants, or loans?	Do you, your spouse, or anyone in the household get funds from an educational institution, such as scholarships, grants, or loans?
Is your income and cash this month more than your rent and bills?	Is your income and ready cash this month more than your rent and utilities?
Do you pay for heating or cooling your home separate from your rent?	Do you pay for heating or air-conditioning separately from your housing expenses?
In the past month, has anyone in your home quit a job or lost hours at work?	Have any household members quit or reduced hours/wages within the last 30 days?
What is the total money your household expects to get this month before taxes are taken out?	How much total earned income will your household receive this month before taxes (gross)?
What is the total amount you have in cash or items that you can easily sell for cash?	What is the total amount of liquid assets available?
This month, what is the total unearned money your home will receive?	About how much total unearned income or money will the household receive this month?

Regulation of Aid: Benefits Manipulation

While there are a number of ways that an individual can reduce food scarcity, Study 2 focuses on cash benefits from a non-profit charity. Thus, for Study 2, two benefit conditions were established. In order to do this, I kept in mind that the maximum benefit amount is $194 per month for a single person household, which is reduced based on net income overages, and that gross monthly income requirements are at 130% of the poverty line or less (U.S. Department of Agriculture, 2019). As in Study 1, I assumed that benefits are designed to disappear when an individual is making 131% or more of the poverty line. Using the highest and lowest income brackets from the secondary data source, I set two benefit levels. For a single person in a household, I chose the maximum benefit that people in the bottom income tier could get would be about $194 per month, and the maximum benefit people in the top income tier could get would be about $44 per month.

After answering the application questions, participants were told that, based on their responses, the non-profit charity assessed their needs and determined the value of the benefits they would be provided for assistance. The amount offered would be a single payment for the entire month. Participants in the high benefits condition were told that they qualified for the maximum benefits of $194 per month per member of their household. Participants in the low benefits condition were told that they did not qualify for the maximum benefits but would receive $44 per month per member of their household. All participants were told that they would be qualified for this benefit for the next 3 months and would not need to reapply during that time as long as their financial situation did not change.

Participation: Intent to Continue Participating in Aid Measure

Participants were told that they might continue to be unemployed and need assistance in the future, and if they wanted, they could continue participating in this program and the resources by reapplying and following the same process as before. Alternatively, they could seek out other forms of assistance. Then, to measured participant's intent to participate in the aid program, I used a 2-item scale adapted from prior work (Maheswaran and Meyers-Levy, 1990). Participants were asked to what extent they agreed or disagreed on a 7-point scale (Disagree Strongly = 1, Agree Strongly = 7) with the following statements and their responses were averaged ($\alpha = .96$): "I intend to apply for and use this aid program again soon." and "I am likely to apply for and use this aid program in the future.".

Manipulation Check: Effort Condition

To check the effort manipulation, participants were asked to what extent they agreed or disagreed on a 5-point scale (Disagree Strongly = 1, Agree Strongly = 5) with the following: "This application was easy to understand.".

Manipulation Check: Benefits Condition

To check the benefit manipulation, participants were asked to rate on a 5-point scale (Very little = 1, A huge amount = 5) with the following: "How much financial assistance for food were you offered from the non-profit charity?".

Results

To analyze the results and see the differences in intent to participate in the aid program for the high and low effort groups given then high and low benefits, SPSS was used to run two-factor ANOVAs. Effort was the independent variable, and benefits were the moderator.

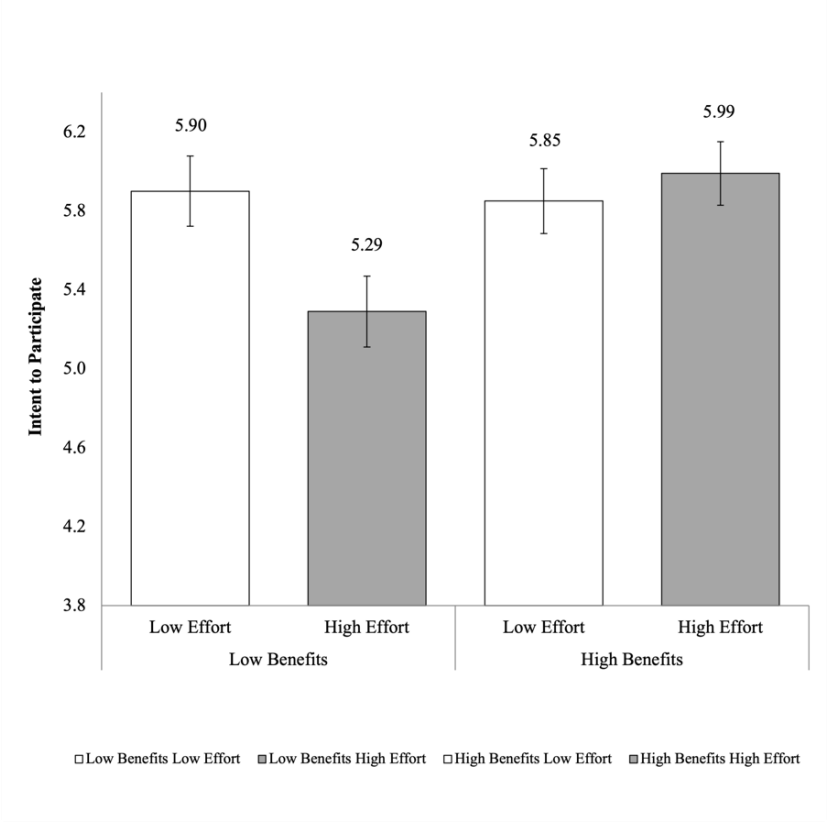
Manipulation Check of Effort Condition. A two-factor ANOVA found the expected main effect for effort on its manipulation check ($F (1, 197) = 4.52$, $p = .035$, $M_{Lower} = 1.62$ vs. $M_{Higher} = 1.90$). The main effect for benefits was non-significant ($F (1, 197) = 0.92$, $p = .338$), and the interaction between benefits and effort was non-significant ($F (1, 197) = 0.67$, $p = .416$).

Manipulation Check of Benefit Condition. A two-factor ANOVA found the expected main effect for benefits on its manipulation check ($F (1, 197) = 145.48$, $p = .000$, $M_{Lower} = 1.92$ vs. $M_{Higher} = 3.34$). The main effect for effort was non-significant ($F (1, 197) = 0.69$, $p = .407$), and the interaction between benefits and effort was non-significant ($F (1, 197) = 0.22$, $p = .639$).

Intent to Continue Participation. A two-factor ANOVA found the predicted interaction between benefits and effort on the intent to continue participation ($F (1, 197) = 4.84$, $p = .029$; see Figure 5). There was also a marginal effect of benefits on the intent to continue participation ($F (1, 197) = 3.63$, $p = .058$, $M_{Lower} = 5.60$ vs. $M_{Higher} = 5.92$). The main effect for effort on the intent to continue participation was not significant ($F (1, 197) = 1.92$, $p = .167$, $M_{Lower} = 5.88$ vs. $M_{Higher} = 5.64$).

Following up the interaction, pairwise tests revealed that when given lower benefits, people faced with higher (vs. lower) application effort had a lower intent to continue participation ($M_{Higher} = 5.29$ vs, $M_{Lower} = 5.90$, $t (197) = 2.42$, $p = .016$); however, when given higher benefits, the effect of higher (vs. lower) effort on the intent to continue participation was non-significant ($M_{Higher} = 5.99$ vs, $M_{Lower} = 5.85$, $t (197) = 0.60$, $p = .546$).

FIGURE 6



Discussion

Study 2 introduced cognitive effort as an influencer for participation in aid programs and supported my hypothesis (H1). When individuals were offered lower benefits, requiring them to exert higher vs. lower effort to apply for assistance lowered their intent to participate in aid programs, but when individuals were offered higher benefits, the effort effect disappeared. These findings show how to regulate aid and improve participation in assistance programs among individuals in resource scarce contexts by lowering cognitive effort. Overall, to leave aid beneficiaries in a better place, the benefits and effort to apply for aid must be carefully considered. To expand upon these results, Study 3 looks at another form of effort — time effort. Study 3 also introduces perceived justice as a mediator. Furthermore, it takes a more holistic view by looking beyond just behavioral responses to aid, and it examines emotional responses to aid by examining state anxiety.

Study 3: Effects of Aid Benefits & Effort (Time) on Perceived Justice & Participation Rates

Overview

Study 3 tested H1, which posited that when individuals are offered lower benefits, requiring them to exert higher vs. lower effort to apply for assistance will lower intent to participate in aid programs, but when individuals are offered higher benefits, the effort effect will disappear. This study tested H2, which posited the effects of effort and benefits on intent to participate in aid programs will be mediated by the perception of justice. This study tested H3, which posited that when individuals are offered lower benefits, requiring them to exert higher vs. lower effort to apply for assistance will keep their state anxiety at increased levels, but when individuals are offered higher benefits, the effort effect will disappear.

This study used a two-factor design which manipulated the independent variable, effort, and moderator, benefits, between-subjects. In order to test this model, I studied benefits for food to individuals from a non-profit charity during a pandemic (disease outbreak across the world) that has caused furloughs, reduced wages, and job loss. Participants were randomly assigned to imagine either a higher or lower effort condition, and as a moderating variable, they were also randomly assigned a higher or lower benefit condition. Then, outcome measures were taken for intent to participate in the aid program, perceived justice, and state anxiety. For descriptive purposes, I also measured participants' household income, household size, gender, ethnicity, education level, and age.

Design and Participants

Study 3 study manipulated the independent variable, the effort, between-subjects. There were two manipulated levels of the independent variable: higher effort and lower effort. Study 3 study focused on time effort, and participants were faced with higher or lower time effort when

applying for aid. Then, measures were taken for intent to participate in the aid program, perceived justice, and state anxiety.

The study was limited to United States participants who speak English. Qualtrics was used to collect the data, and 285 participants were recruited using Prolific and received a small amount of money (no less than $6.50 per hour) for their participation. The recruitment posting read: “We are conducting an academic survey about charity aid, which should take about 10 minutes. If you choose to be in the study, you may be asked to imagine yourself in a scenario, describe how it would feel in a scenario, and answer some survey questions. The survey will take about 10 minutes to complete. At the end of the survey, you will be redirected back to this site to receive credit for taking my survey.”

Like in Study 2, after cleaning the data to remove participants that failed to pay attention (N = 2) as well as non-attentive participants (N = 11), 272 participants remained. There were about the same number of male and female participants (47.2% versus 52.8%). Participants were split between only have some college or less (32.0%) and obtaining at least a 2-year college degree or higher (68.0%). Participants were also either unemployed or unable to work (25.0%), employed (62.5%), or a student or retired (12.5%). The majority of participants were Caucasian (70.1%), and the mean age was 34.95, with a range of 18-78.

From a household and income perspective, the mean household size was 2.95 (with a median of 3.00). The mean household annual income was $66,877 (with a median of $52,000). The mean household income in the prior month was $15,561 (with a median of $4,000). Breaking income down by member of the household, the mean per member annual income was $26,194 (with a median of $20,000). The mean per member income in the prior month was $5,832 (with a median of $1,667).

Manipulations and Measures

First, participants were placed in a resource-scarce situation and randomly assigned to a benefit and effort condition. Lastly, perceived justice, state anxiety, intent to participate in the aid program, and other measures were taken. Below are details regarding the manipulations for the conditions and measures taken.

Resource Scarcity Context

Like Study 2, this study asked all participants to imagine the same scenario where they have experienced temporary loss of their income and would likely not be able to return to normal income levels for months. While in this situation, they could apply for assistance, and they found a program to participate in offered by a non-profit charity that will provide financial assistance for food. However, they would need to apply, and the final amount of benefit they would receive would be based on the application they would need to complete.

Regulation of Aid: Effort Manipulation

While there are a number of ways effort can be invested to reduce resource scarcity, Study 3 focused on time effort, where Study 2 examined cognitive effort. This is designed to simulate the variations seen between states on application length as well as other activities that may require more time from applicants, such as multiple visits to the Food Stamps office. Participants in each condition were told that, in order to be eligible for aid benefits, they would need to apply and answer application questions. As in Study 2, after reviewing several food stamp applications, I compiled a list of common application questions. To control for cognitive effort, all participants were presented with the same level of question difficulty in terms of readability (Flesch reading ease - 69.5) and education level (Flesch grade level - ~6); however, the number of the questions and therefore time effort was varied by condition. Participants in the high effort condition were

asked to answer 25 questions and therefore required to invest more time effort. Participants in the low effort condition were asked to answer 5 questions and therefore required to invest less time effort (see Table 11 for full list of questions). On average, people in the higher time effort condition to ~ 2.5 minutes to answer the questions, and people in the lower time effort condition to ~1.5 minutes to answer the questions.

TABLE 11

Lower Time Effort *(Flesch Reading Ease = 69.5; Flesch-Kincaid Grade Level = 6.2)*	**Higher Time Effort** *(Flesch Reading Ease = 69.5; Flesch-Kincaid Grade Level = 6.0)*
Is the total amount of cash, checking, or savings that everyone has today $100 or less?	Is the total amount of cash, checking, or savings that everyone has today $100 or less?
Does anyone in your household work?	Does anyone in your household work?
Has anyone stopped working in the past 30 days?	Has anyone stopped working in the past 30 days?
Does everyone in your home buy food and cook meals together?	Does everyone in your home buy food and cook meals together?
Does anyone work as a volunteer or participate in a work training program?	Does anyone work as a volunteer or participate in a work training program?
	Is anyone in the home considered self-employed?
	Do you or anyone in the household expect income from a job this month?
	Is anyone getting ready to start a new job?
	Does anyone in your home move from place to place for work?
	Do you or anyone in your household pay for child or disabled adult care?
	Does anyone have a disability?
	Does anyone age 60 or older, or anyone with a disability, pay medical costs?
	Is anyone an active-duty member of military forces?
	Did anyone in your home recently get a one-time payment of money?
	Is your home provided to you free of charge?
	Is anyone in your household married?
	Are you or anyone in your household attending college?

	Is anyone getting educational scholarships, grants, or loans?
	Have you or anyone in your household quit a job in the past 30 days?
	Were anyone's wages reduced in the past 30 days?
	Do you pay for heating or cooling your home?
	Do you pay for electricity?
	Do you pay for water, sewage, or trash service?
	Do you pay for telephone service?
	Do you or anyone in your household have a savings or checking account?

Regulation of Aid: Benefits Manipulation

After answering the application questions, participants were told that, based on their responses, the program assessed their needs and determined the value of the benefits they would be provided for assistance. Participants in the high benefits condition were told that they qualified for the maximum benefits of $194 per month per member of their household. Participants in the low benefits condition were told that they did not qualify for the maximum benefits but would receive $44 per month per member of their household. All participants were told that they would be qualified for this benefit for the next 3 months and would not need to reapply during that time as long as their financial situation did not change.

Justice: Perceived Distributive Justice Measure

To measure the participants' perceptions of distributive justice, I used a 3-item scale adapted from prior work (Colquitt, 2001). Participants were asked to what extent they agreed or disagreed on a 7-point scale (Disagree Strongly = 1, Agree Strongly = 7) with the following statements and their responses were averaged ($\alpha = .87$): "Your benefit amount reflects the effort you have put into your work applying."; "Your benefit amount is appropriate for the work you have completed applying."; and "Your benefit amount is justified, given your performance applying."

Participation: Intent to Continue Participating in Aid Measure

Participants were told that they might continue to be unemployed and need assistance in the future, and if they wanted, they could continue participating in this program and the resources by reapplying and following the same process as before. Alternatively, they could seek out other forms of assistance. Then, to measured participant's intent to participate in the aid program, I used the same 2-item scale from Study 2. Participants were asked to what extent they agreed or disagreed on a 7-point scale (Disagree Strongly = 1, Agree Strongly = 7) with the following statements and their responses were averaged (α = .93): "I intend to apply for and use this aid program again soon." and "I am likely to apply for and use this aid program in the future.".

Anxiety: State Anxiety Measure

To measure participant's anxiety, I used a 5-item scale from scale from prior work (Spielberger, 1983). Participants were asked to what extent they felt this way, right now, at the present moment on a 5-point scale (Very Slightly or Not at All = 1, Extremely = 5) regarding the following statement (α = .79), with relevant items reverse coded: "I feel steady." (r); "I feel strained."; "I feel indecisive."; "I feel self-confident" (r); and "I am presently worrying over possible misfortunes."

Manipulation Check: Effort Condition

To check the effort manipulation, participants were asked to rate on a 5-point scale (1 = very little, 5 = a huge amount) the following: "How much time did you put into applying for this aid program?".

Manipulation Check: Benefits Condition

To check the benefits manipulation, participants were asked to rate on a 5-point scale (very little = 1, a huge amount = 5) the following: "How much financial assistance for food were you offered from the non-profit charity?".

Results

To analyze the results and see the differences in perceived justice, intent to participate in the aid program, and state anxiety for the high and low effort groups given the high and low benefits, SPSS was used to run two-factor ANOVAs. Effort was the independent variable, and benefits were the moderator. Intent to participate in the aid program was one of the dependent variables, with perceived justice as the mediator. Additionally, state anxiety was the other dependent variable.

Manipulation Check of Benefit Condition. A two-factor ANOVA found the expected main effect for benefits on its manipulation check ($F(1, 268) = 184.29$, $p = .000$, $M_{Lower} = 1.93$ vs. $M_{Higher} = 3.22$). The main effect for effort was non-significant ($F(1, 268) = 0.33$, $p = .565$), and the interaction between benefits and effort was non-significant ($F(1, 268) = 0.33$, $p = .566$)

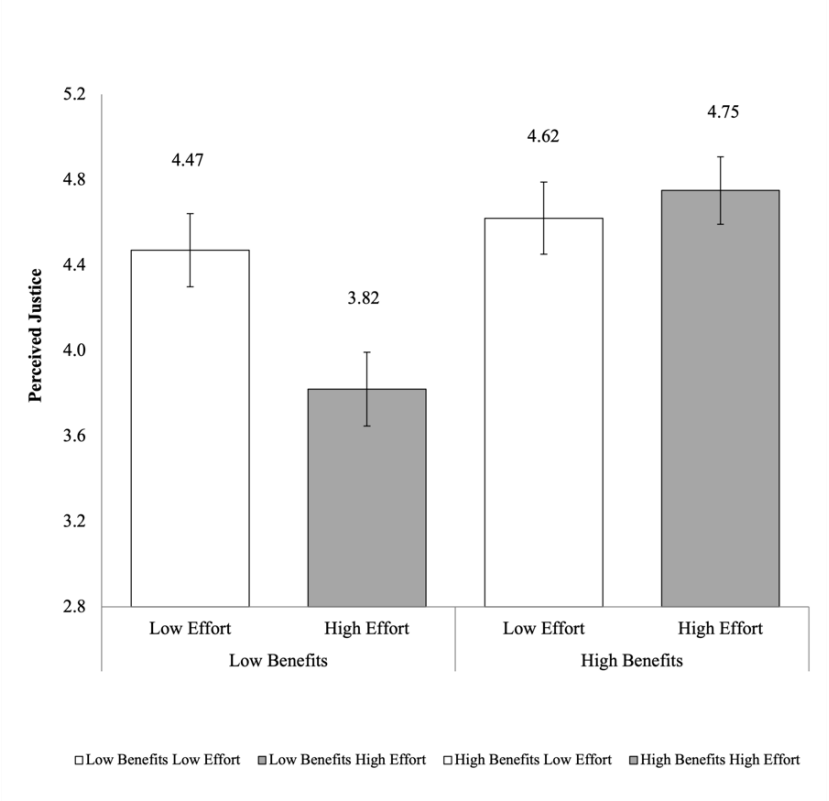
Manipulation Check of Effort Condition. A two-factor ANOVA found the expected main effect for effort on its manipulation check ($F(1, 268) = 6.47$, $p = .012$, $M_{Lower} = 1.77$ vs. $M_{Higher} = 2.03$). The main effect for benefits was non-significant ($F(1, 268) = 1.14$, $p = .287$), and the interaction between benefits and effort was non-significant ($F(1, 268) = 0.22$, $p = .641$)

Perception of Justice. A two-factor ANOVA found the predicted interaction between benefits and effort on the perception of justice ($F(1, 268) = 5.30$, $p = .022$; see Figure 6). There was also a main effect of benefits on the perception of justice ($F(1, 268) = 10.22$, $p = .002$, M_{Lower}

= 4.15 vs. M_{Higher} = 4.68). The main effect for effort on the perception of justice was not significant (F (1, 268) = 2.45, p = .119, M_{Lower} = 4.55 vs. M_{Higher} = 4.28).

Following up the interaction, pairwise tests revealed that when given lower benefits, people faced with higher (vs. lower) application effort had a lower perception of justice (M_{Higher} = 3.82 vs. M_{Lower} = 4.47, t (268) = 2.671, p = .008); however, when given higher benefits, the effect of higher (vs. lower) effort on the perception of justice was non-significant (M_{Higher} = 4.75 vs. M_{Lower} = 4.62, t (268) = 0.537, p= .593).

FIGURE 7

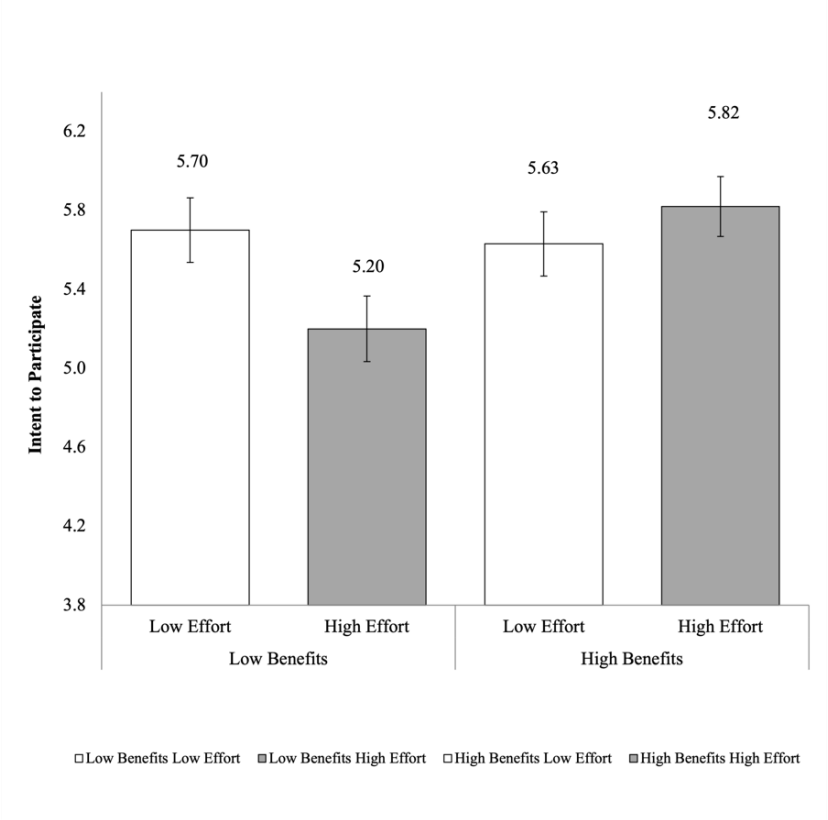


Intent to Continue Participation. A two-factor ANOVA found the predicted interaction between benefits and effort on the intent to continue participation (F (1, 268) = 4.54, p = .034; see Figure 7). The main effect for benefits on the intent to continue participation was not significant,

though marginal (F (1, 268) = 2.97, p = .086, M_{Lower} = 5.45 vs. M_{Higher} = 5.73). The main effect for effort on the intent to continue participation was not significant (F (1, 268) = 1.01, p = .316, M_{Lower} = 5.67 vs. M_{Higher} = 5.51).

Following up the interaction, pairwise tests revealed that when given lower benefits, people faced with higher (vs. lower) application effort had a lower intent to continue participation (M_{Higher} = 5.20 vs. M_{Lower} = 5.70, t (268) = 2.167, p = .031); however, when given higher benefits, the effect of higher (vs. lower) effort on the intent to continue participation was non-significant (M_{Higher} = 5.82 vs. M_{Lower} = 5.63, t (268) = 0.815, p= .414).

FIGURE 8



Moderated Mediation: Justice. I tested if the perception of justice mediated the interactive effect of benefits and effort on the intent to continue participation. This analysis employed an SPSS

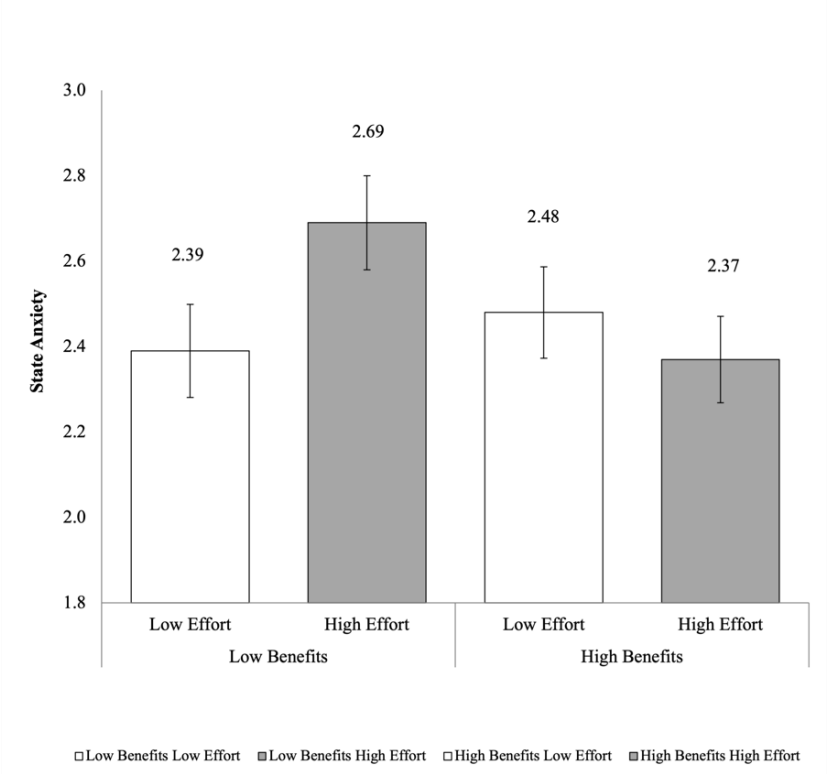
macro developed by Hayes (2013) called PROCESS, using Model 8 with a 95% bias corrected confidence-interval and 5,000 bootstrap resamples. As expected, the test of the indirect effect effort (IV) crossed with benefits (moderator) on the intent to continue participation (DV) through perceived justice supported moderated mediation (95% CI: LL CI = .0062, UL CI = .3072).

I then decomposed the mediating effects by looking at the two moderator levels. The test of the indirect effect of effort combined with lower benefits on the intent to continue participation through perceived justice supported mediation (Effect = -.1015, 95% CI: LL CI = -.2476, UL CI = -.0101). However, the test of the indirect effect of effort, combined with higher benefits on the intent to continue participation through perceived justice, did not support mediation (Effect = .0194, 95% CI: LL CI = -.0572, UL CI = .1031). To summarize, this mediation test supported my hypotheses H2: The effect of effort affected the intent to continue participation through the perception of justice, but only among individuals receiving lower benefits.

Anxiety. A two-factor ANOVA found a marginal interaction between benefits and effort on anxiety ($F(1, 268) = 3.62$, $p = .058$; see Figure 8). The main effect of benefits on anxiety was not significant ($F(1, 268) = 1.07$, $p = .303$, $M_{Lower} = 2.54$ vs. $M_{Higher} = 2.43$). The main effect for effort on anxiety was not significant ($F(1, 268) = 0.81$, $p = .368$, $M_{Lower} = 2.43$ vs. $M_{Higher} = 2.53$).

Following up the interaction, pairwise tests revealed that when given lower benefits, people faced with higher (vs. lower) application effort had marginally higher anxiety ($M_{Higher} = 2.69$ vs. $M_{Lower} = 2.39$, $t(268) = 1.935$, $p = .054$); however, when given higher benefits, the effect of higher (vs. lower) effort on anxiety was non-significant ($M_{Higher} = 2.37$ vs. $M_{Lower} = 2.48$, $t(268) = 0.728$, $p = .469$).

FIGURE 9



Moderated Mediation: Anxiety. I tested if state anxiety mediated the interactive effect of benefits and effort on the intent to continue participation. This analysis employed an SPSS macro developed by Hayes (2013) called PROCESS, using Model 8 with a 95% bias corrected confidence-interval and 5,000 bootstrap resamples. As expected, the test of the indirect effect effort (IV) crossed with benefits (moderator) on the intent to continue participation (DV) through state anxiety did not support moderated mediation (95% CI: LL CI = -.2126, UL CI = .0106). To summarize, this mediation test reinforced support of my hypothesis (H2) — the effects of effort and benefits on intent to participate in aid programs were mediated by the perception of justice and not by state anxiety.

Discussion

Study 3 supported all of my hypotheses (H1-H3). When individuals were presented with aid that required higher versus lower effort, they showed a decreased perception of justice and

decreased intent to continue participation in aid programs. However, these effects only occurred among aid participants who were offered lower benefits, not among those being offered higher benefits. When examining perceived justice as a mediator, moderated mediation was supported, with mediation found only for lower benefit individuals.

Additionally, when individuals were offered lower benefits, requiring them to exert higher versus lower effort to apply for assistance maintained their state of higher anxiety, but when individuals were offered higher benefits, the effect disappeared. However, state anxiety did not mediate the effects of effort and benefits on intent to participation in aid programs; thus, perceptions of justice served as the primary mediator. This falls in line with traditional views that individual's behavioral intentions come from a reasoned process (Eagly et al., 1994; Fishbein, 1980), and in some situations, individuals are thought to strongly base their intentions on cognition and logical evaluations of the behavior (Trafimow et al., 2004).

Together, these findings indicate how to regulate aid and improve continued participation in assistance programs among individuals in resource scarce contexts by lowering time effort. In order to leave aid beneficiaries holistically in a better place, more aid should be offered with higher benefits and lower application effort. This is particularly important to not only improve consumer well-being by encouraging needy individuals to participate in aid programs, but is also significant to improve perceptions of justice and anxiety. Overall, this study sheds light on the holistic effects — cognitive, emotional, and behavioral — of aid programs on the individuals facing resource scarcity.

Final Discussion

Overview

In the United States, resource scarcity continues to be a problem and may arise for a number of reasons, such as chronic situations (e.g., poverty) or sudden, traumatic situations (e.g., COVID-19 pandemic). For example, it was predicted that 42% of all the jobs lost due to Coronavirus (COVID-19) would be permanent (Forbes, 2020), and with more than 41 million people filing for unemployment in 2020 in the U.S. (PBS, 2020), it is uncertain to what extent individuals will face short- or long-term scarcity as a result of this event. Furthermore, traumatic events, like pandemics or natural disasters, can quickly cause individuals to face resource scarcity regardless of their financial standing.

When experiencing resource scarcity due to these events, individuals begin to struggle to survive and to gain access to basic resources. To help those facing these circumstances, safety net programs (e.g., Food Stamps) and charity programs (e.g., Feed America) can be useful when utilized. However, safety net programs and charitable programs face numerous issues including better understanding aid providers' and beneficiaries' reactions around aid, trying to capture the full breadth of individuals impacted by resource scarcity, and providing those in need a form of aid that improves their well-being.

Thus, this research aimed to examine some of these challenges in the context of how aid is regulated and how those regulations impact individuals facing resource scarcity. The question underlying this research was: how do aid regulations impact cognitive, emotional, and behavioral reactions to aid programs when individuals are facing resource scarcity? In this research, I posited that when individuals were offered lower benefits, requiring them to exert higher vs. lower effort to apply for assistance would lower intent to participation in aid programs, but when individuals

were offered higher benefits, the effort effect will disappear. I also posited the effects of effort and benefits on intent to participate in aid programs would be mediated by the perception of justice. Furthermore, I posited that when individuals are offered lower benefits, requiring them to exert higher vs. lower effort to apply for assistance will keep their state anxiety at increased levels, but when individuals are offered higher benefits, the effort effect will disappear. To test these hypotheses, I conducted one secondary data analysis of the U.S. SNAP program and two controlled lab experiments.

Across my studies, I found support for all my hypotheses. Individuals, who were offered lower aid benefits but exerted higher effort to become eligible for aid, had reduced intent to participate in aid programs and lowered perceptions of justice, which mediated their intent to participate in aid programs. I also found that individuals who were offered aid that presented less benefits and required higher effort to become eligible experienced higher state anxiety. Together, this research has important implications for the resource scarcity and holistic well-being literatures. Additionally, it has implication for the helping behavior and recipient reactions to aid literatures.

First, research has found that providers of aid often judge a beneficiary's level of scarcity to make sure the gap is large enough to warrant help (Batson, 1987) and that providers are concerned about equity (Tyler, 1994) and restoring justice but only if they feel a beneficiary is in need due to no fault of his/her own (Bendapudi, Singh, and Bendapudi, 1996). However, these perspectives ignore the beneficiaries' perceptions of justice. Yet, I find that, when a beneficiary needs basic resources due to no fault of his/her own, a beneficiary's perception of justice is a key factor in influencing if he/she participates in aid programs. Thus, providers of aid need to look at different layers of justice, beyond just their perceptions of how beneficiaries came to be in need and how large beneficiaries' gaps in resources are. From my work, as well as the work by Baker

et al. (2020) on interpersonal justice, it is evident that justice plays a much larger role in the process of seeking aid.

Additionally, research finds that a provider's internal motivations, egoistic, altruistic, or both (Bendapudi, Singh, and Bendapudi, 1996), play a key role in helping behaviors. However, that research predominantly focuses on providers as donors, but organizations are also involved in the process of providing aid and therefore must be considered too. Presumably a safety net program or charity program, with the goal/mission to help those in need, would have altruistic motivations; however, programs like SNAP can be heavily regulated, create barriers to accessing to aid, and can go underutilized. Therefore, we should consider what motivations are driving those decisions.

In my secondary data analysis, I found that states can discourage participation in aid programs by regulating their programs in a way that creates high effort on individuals while providing them lower benefits. Yet, all these people would be eligible for resources, so I must ask what the motivation behind these regulations are, especially since the federal government funds this program. For example, it is possible that each state has underlying political motivations in the restrictions they impose on their residents.

While my research did not directly study this, I conducted a small post-hoc analysis to see if there was a correlation between a state's political party alignment (using the 2016 and 2020 presidential election results) and the level of effort required by states for SNAP. For the 2016 presidential election, I found there was no significant correlation between political party alignment and effort, $r(47) = .22$, $p = .13$, but for the 2020 presidential election, I found a significant correlation between political party alignment and effort, $r(47) = .35$, $p = .014$. This may indicate that states, which align with the Republican or Democratic party, have alternative motivations for requiring higher or lower effort to obtain aid. Thus, at a state level, there might be different

underlying provider motivations, and those motivations may be in contrast to that of the federal government, which established these programs to promote well-being. This might be worth exploring in the future.

Beyond having implications on the provider and helping behavior literature, this research has implications on the recipient reactions to aid literature. For example, research finds that beneficiaries can feel indebted when they believe that they experience greater benefits than the aid provider, but the provider has higher costs (Fisher, Nadler, and Whitcher-Alagna, 1982). Furthermore, if an aid beneficiary feels indebted and that they cannot reciprocate, they may abstain from seeking aid (Castro, 1974). Yet, this prior research focuses on how recipients felt when they experienced greater benefits as opposed to how individuals might feel receiving lower benefits. Therefore, to expand upon this past research, I studied participants receiving higher versus lower benefits and which group may abstain from participating in aid. I found that, when beneficiaries received lower benefits, they abstained from participating in aid, specifically if the effort to become eligible was higher versus lower. Furthermore, my research found this reaction was due to a lack of perceived justice. However, when beneficiaries received higher benefits, the negative effects on justice and participation disappeared. This demonstrates that, in order to really understand the impact of aid on recipients, we must examine reactions to aid across a spectrum of benefit levels, from high to low, and also consider factors, such as effort, which might interact with benefits.

In addition to the above line of research, my research also has implications on the recipient reaction to aid literature based on the notion that aid can be both supportive and threatening (Fisher, Nadler, and Whitcher-Alagna,1982). For example, from a threat perspective, research found that interpersonal dynamics can create a sense of institutional subordination (Cherrier and Hill, 2018) and that aid can be stigmatizing (Manchester and Mumford, 2009; Moffitt, 1983). This prior

research demonstrates that seeking aid can be a problematic, negative experience for beneficiaries. I added to this line of research by exploring other ways in which seeking aid can be a troublesome and less than supportive experience.

My research looked beyond some of the direct interactions that beneficiaries have with providers that Cherrier and Hill (2018) examined, and instead, I examined aid regulations independently. I found that heavy aid regulations can lower perceptions of justice, specifically distributive justice. While interactions with aid providers may impact interactional or procedural justice and thus should be studied, I found aid regulations can independently impact distributive justice and also reduce participation in programs, which defeats the purpose of trying to help those in need. Thus, programs may be less supportive than intended.

Furthermore, while I did not measure threats directly, we know from prior research that threats can arise from experiencing discrepancy (Jonas et al., 2014), and discrepancy is experienced in resource scarce situations (Cannon, Goldsmith, and Roux, 2018). Additionally, we know that when a threat is present, anxiety is created (Gray and McNaughton, 2000), and I found that when individuals are facing resource scarcity, aid regulations can keep state anxiety elevated. Hence, while I did not directly study threats, there may be room in the future to explore why state anxiety was elevated in some groups. For example, there may be a connection to the discrepancy experienced in resource scarce situations and the generation of threats, which may then be alleviated or amplified by aid regulations leading to the anxiety results I found. If there is a connection, that could also add to the research by Fisher, Nadler, and Whitcher-Alagna (1982) on aid being threatening. On the whole, my research helps expand on the above work in that it shows a less than supportive side of aid that can create negative reactions.

Since I found the above effects only hold when aid was regulated in a way that made effort high and benefits low, I was able to expand upon past research on ways to promote aid acceptance (Bowe et al., 2019) by looking beyond social identity and turning to other factors, such as effort, benefits, and perceived justice. This likewise adds to the past research on participation in aid programs, which included: transactions costs, information, program awareness, informational complexity, hassle factors, participant procrastination, program spillover, and program benefits (Bertrand, Mullainathan, and Shafir, 2006; Blank and Ruggles, 1996; Chetty et al., 2013; Currie, 2004; Daponte, Sanders, and Taylor, 1999; Meyers and Heintze, 1999; Yelowitz, 2000), by introducing aid regulations as a way to promote or deter aid acceptance. While the above factors are important when examining participation in aid programs, they have been studied independently; however, my research works to connect how effort and benefits interact to impact participation. Together, this indicates that we must examine the entire process for obtaining aid, from application to receipt, in order to fully understand a beneficiary's reactions to aid and promote acceptance of aid. Furthermore, this notion aligns well with the new perspective on holistic consumer well-being, which emphasizes objective resources plus beneficiaries' perceptions of how the process to obtain resources impact their lives (Baker et al., 2020).

Outside of having implications on the recipient reactions to aid literature, this research has implications for the resource scarcity literature. In the past, researchers have examined resource scarcity in a number of ways, including focusing on specific groups of people, such as those facing chronic need (e.g. a life in poverty) or at the base of the pyramid (Hill, 2016; Martin and Hill, 2012). However, traumatic events, such as the pandemic that impacted impoverished communities as well as more affluent communities (New York Times, 2020) create the opportunity to study resource scarcity across income groups. In my research, I had a mix of unemployed and employed

individuals, as well as those with median incomes slightly above what would typically be studied if one only examining the base of the pyramid, and I found implications on how this mixed income group responded to being met with aid regulations when they were faced with resource scarcity.

Beyond the above impacts to the resource scarcity literature, my research adds to the psychological reactions to scarcity. For example, the experience of scarcity can result in reduced cognitive control (Mani et al., 2013) depending on the situational factors, and I also find that another downstream consequence may be reduced perceived justice. Individuals may also have emotional and behavioral reactions to resource scarcity, for example, acting unethically trying to consume scarce resources (Yam et al., 2014) or experiencing stress (Griskevicius et al., 2013), and my research finds they too may avoid participating in aid programs and experience elevated state anxiety. This emphasizes the importance of studying different forms of resource scarcity and various situational factors at play, as each situation may lead to unique reactions.

Furthermore, since we know that individuals respond to their scarcity situations based on their assessments of how their actions will change or improve their situation (Cannon, Goldsmith, and Roux, 2018), it is key to examine external factors that may be influencing how individuals might be required to act and what they might be able to obtain to reduce their scarcity. Hence, my research adds to the scarcity literature by showing how aid regulations can not only impact the actions individuals must take to reduce their scarcity, but also how much their situation can improve as a result. We also generally know that individuals regulate their actions based on reaching specific goals (Cannon, Goldsmith, and Roux, 2018). Therefore, I show that when aiming to reduce a resource discrepancy using an aid program, program benefits become an important moderator as they connect to individuals' abilities to reach their goals around scarcity.

Overall, this research helps to fill gaps in the literature in several key ways: 1) by adding to the work on helping behavior by highlighting the disconnect between provider and beneficiary perceptions of justice and looking outside of the traditional provider/donor context to look at how programs are regulated, 2) by expanding on the theories tied to recipient reactions to aid by investigating situations in which aid might be less than supportive and instead troublesome, 3) by introducing additional reactions to resource scarcity to include perceptions of justice, state anxiety, and participation in aid programs and also examining a traumatic event to see the impact of resource scarcity on impoverished as well as affluent communities, 4) by elaborating on the holistic well-being literature by examining how applying for aid impacts potential beneficiaries, 5) by expanding on cognitive, emotional, and behavioral reactions to aid programs and regulations when facing resource scarcity, and 6) by overall adding to the research on the challenges associated with aid programs, such as provider support and perceptions, increasing aid participation rates, and improving holistic consumer well-being.

Ultimately, this research finds that harsh aid regulations impact resource scarce individuals' cognitive, emotional, and behavioral reactions by not only reducing the likelihood they will access needed resources, but also by affecting them psychologically through reducing perceptions of justice and keeping state anxiety at elevated levels. Additionally, this research provides meaningful managerial insights for charity and government organizations by illustrating how to regulate programs in a way that increases perceived justice, increases program participation rates, and alleviates state anxiety. If the goal of an aid program is to holistically help individuals facing resource scarcity, one way to do that may be to adjust regulations to eligibility effort, especially when the benefits provided are lower, and help individuals feel like an aid program is a viable, reasonable way to reduce their resource discrepancies. This is particularly important when

making policy decisions during times of economic crisis, such as that due to the COVID-19 pandemic.

In sum, this research suggests there may be a better way to administer aid in the face of scarcity: Reduce the effort to become eligible and focus on improving benefits for individuals. In addition to this, a number of programs need to examine their current processes for administering aid. For example, each U.S. state should consider how it is managing its SNAP program. Depending on how a state manages its options around reporting certification length, online applications, electronic case files, case management, call centers, broad-based categorical eligibility (BBCE), joint application- Medicaid, joint application- TANF, and transitional benefits alternative (TBA), it could be creating additional effort on needy individuals and decreasing the likelihood that they participate in a program they desperately need. Ultimately, organizations and policy makers should consider this: If resource scarce individuals face harsh aid regulations that causes them to perceive less justice, which reduces their intent to participate in the program all while keeping their anxiety high, is the program holistically helping those facing resource scarcity?

Validity and Limitations

Overall, the proposed research has strong internal validity for several reasons. First, in the lab experiments, it uses random assignment of condition to alleviate some threats to internal validity, such as selection. Secondly, consistent manipulations and measures were used across experiments, so the threat of instrumentation should not be a problem. Lastly, since it only took an individual 10 minutes to complete the study, the threat of maturation to internal validity is only a small concern.

Although there is strong internal validity, the proposed research is more limited in its external validity for a couple of reasons. First, the sample for the lab studies was obtained from

Prolific, which is not representative of the U.S. population that may seek aid or be impacted by resource scarcity. For example, while programs like SNAP have been utilized by more affluent communities due to the pandemic, safety net programs are likely most commonly serving individuals that are experiencing chronic scarcity, making lower income, and are less educated.

However, my sample across Studies 2 and 3 had a median previous month income per person of $1,400 and $1,667, respectively, which does sit above $1,354 which is needed for a single individual to qualify for SNAP. Also, in my studies, only about 25% of the sample was completely unemployed; therefore, only a small portion were likely truly bottom of the pyramid. Additionally, across Studies 2 and 3, in terms of education, the percent of my sample that had only some college or less was (42.3%) and (32.0%), but often those using programs like SNAP are not well educated. As a result, for programs like SNAP, my lab studies are more limiting in that they only capture some individuals who may not be in constant use of safety net program. Instead, my findings apply more to times of economic crisis or situations around traumatic events where individuals, who would not traditionally use safety net programs like SNAP, may need to fall back on these safety nets to manage temporary resource scarcity.

However, to help alleviate some of the external validity concerns of the lab studies, an external data analysis was conducted using SNAP program data. While my secondary data study cannot show causality like the lab experiments, it did indicate there was a relationship between the effort to apply for SNAP and participation among groups with different levels of benefits. This is the same pattern that showed up in my lab studies, so while my lab samples were not ideal, it is possible that the difference in beneficiary reactions to being met with aid regulations, when facing chronic versus temporary scarcity, are not that large.

Conversely, my sample is still limited in its racial composition. The majority of my participants across Studies 2 and 3 were Caucasian, 67.2% and 70.1% respectively. While this is comparable to recipients of SNAP in 2018, where Caucasian alone - not Hispanic or Latino was 67.0% (Loveless, 2020), it does not address the issue of equal access to aid for all individuals. In 2019, the U.S. population was 60.1% Caucasian alone - not Hispanic or Latino, 13.4% African America alone, 1.3% American Indian or Alaska Native alone, 5.9% Asian alone, 0.2% Native Hawaiian or Pacific Islander alone, and 18.5% Hispanic or Latino (U.S. Census Bureau, 2019). When comparing the racial composition of the recipients of SNAP and the U.S. population, it is evident that Caucasian alone - not Hispanic or Latino, are overrepresented at 67.0% versus 60.1% respectively. Thus, other populations are underrepresented. To investigate what barriers may exist for certain racial groups, future research should study why certain racial communities do not utilize SNAP and how to improve their utilization.

An additional concern is that my studies were conducted during a pandemic, which may produce history effects. Depending on the extent to which individuals had or had not been impacted by the pandemic and the timing of any impacts, that may influence their responses, and unfortunately, the effects of the pandemic stretched out well beyond one year. On the other hand, since the pandemic impacted more individuals and communities that typically may not need aid, this may have also made the experiment easier to relate to and therefore stronger in priming participants. To better understand the extent of possible limitations, future research can look at other traumatic events that might promote individuals to temporarily need safety net and aid programs. Future research can also compare groups that were exposed to a recent event versus those not recently exposed, and it can measure direct exposure to need for and use of safety net programs.

Furthermore, it is worth noting that this study was conducted in the U.S. and around U.S. safety net and aid programs. However, each country has different programs and procedures for supporting individuals in need and also offer different benefits. Furthermore, the pandemic impacted countries around the world differently. Thus, this research will also be more limited to countries that are more developed like the U.S. with similar safety net programs.

Despite these limitations, this work sheds light on the beneficiary's cognitive, emotional, and behavioral reactions to regulations around aid programs when experiencing temporary resource scarcity due to traumatic events. It also shows the impacts of resource scarcity on impoverished as well as more affluent communities. Ultimately, this research provides some important insights to government and charity organizations regarding regulating aid in a way that promotes justice, reduces anxiety, and increases the likelihood individuals of various income standings will participate when or if they are in need.

Future Directions

In addition to conducting future work to address some of the limitation above, this research provided insight into a number of opportunities for future research across three key areas: 1) understanding providers of aid, beyond just the donor level, 2) understanding multiple touch points in the process as beneficiaries seek/use aid, 3) continuing to try to capture and understand all groups of individuals impacted by resource scarcity, and 4) developing a conceptual framework that can capture how the inputs from providers influence the outcomes of beneficiaries.

First, there is the opportunity to conduct research to better understand providers of aid, beyond just the donor level, and their motivations. For example, this research examined aid regulations driven by aid organizations and not the donors; however, there is also room to look at how policy makers drive regulations around aid programs. Extending upon this research, since the

SNAP program is federally funded, there seems to be an alternative motivation behind heavily regulating aid programs at the state level, and it seems possible that political motivations could influence setting aid regulations at the state level. When I did a post-hoc analysis of the SNAP program to see if there was a correlation between a state's political party alignment and the level of effort they required, I found was a significant correlation between political party alignment in 2020 and effort. Since policy makers have been using social media as a way to promote their campaigns and values (Jungherr, 2016; Lin, 2017; Stier et all., 2018), there is the opportunity to use social media content analysis to conduct more research in this area by assessing political views around certain programs, as well as specific issues and causes.

Secondly, there is the opportunity to conduct research to better understand multiple touch points in the process as beneficiaries seek/use aid and how they respond in each stage. For example, much of the recipient reaction to aid research seems tied to actually possessing and consuming the aid; however, consumers acquire, possess, consume, maintain, and dispose of goods. Furthermore, in order to study holistic consumer well-being, we must look at the objective resources, as well as the process to obtain resources.

With this, there seems to be more opportunities to look at, for example, the acquisition of aid and what feeds into that process, including procedures and interaction with organizations. Cherrier and Hill (2018) have explored the above some with materially-deprived consumers, such as those who are homeless, but resource scarcity can impact people of different socioeconomic backgrounds. Also, while I only examined distributive justice, interactional and procedural justice may also become important to consider. For example, interactional justice, which links to if a decision maker's behavior is fair (Bies and Shapiro, 1987), may have implications for fostering trust with the beneficiaries. Additionally, procedural justice, which looks at impartiality in a

process (Namasivayam and Mount, 2006), may have implications for how to maintain order in a way that is empowering versus controlling for beneficiaries.

On the opposite end of the consumption cycle, there also seems to be room to study whether or not people maintain and/or dispose of goods they acquired from charity and may have only briefly needed due to temporarily scarcity or even obtained due to a traumatic situation. For example, research has found that individuals are more likely to give up sentimental goods if they try to preserve memories (e.g. via photos) before departing with the item (Winterich, Reczek, and Irwin, 2017). However, if people are acquiring goods due to a traumatic situation, then the emotions and memories tied to them may be different; yet, depending on individuals' abilities to obtain a different resource, they may or may not be able to dispose of the good. Thus, there is room to understand why and how individuals depart with the scarce resources they obtain.

Thirdly, there is the opportunity to conduct research to try to capture and understand all groups of individuals impacted by different types of resource scarcity (e.g. food, clothes, time), at various lengths of scarcity (e.g. temporary or chronic), and due to different situations (e.g. various traumatic or economic events). This research looks at temporary food scarcity due to a pandemic; however, as mentioned, each scarcity situation can be quite different. For example, while past research has looked at those individuals at the bottom of the pyramid (Hill, 2016; Martin and Hill, 2012), it might be worth examining the effects of other traumatic events, such as hurricanes, in which there can be a cycle of loss and gain (Zwiebach, Rhodes, and Roemer, 2010) and can make shelter options or even electricity and water scarce. Furthermore, there may be room to see if there are threshold effects between scarce resources, such as time and money, which both can impact health (Venn and Strazdins, 2017) and what factors may influence trading between the two. Also, if a scarcity situation does not last permanently, we should investigate the factors tied to

transitioning out of a resource scarce situation. For example, researchers have built models to explore movements into and out of poverty (Dang et al. 2014), but we should also ask what happens and how it feels if someone crosses the poverty line and loses access to benefits.

Lastly, there is the opportunity to conduct research to develop a conceptual framework that can capture how the inputs from providers influence the outcomes of beneficiaries. For example, as seen from this research, aid regulations impact perceptions of justice and participation in aid programs. However, it seems less clear how a donor's perceptions of justice and equity (Bendapudi, Singh, and Bendapudi, 1996; Tyler, 1994) or even beneficiary competence (Schroeder, Waytz, and Epley, 2017) then have downstream impacts on beneficiaries. For example, these judgments donors have may influence the way they interact with beneficiaries, and we see from the work of Cherrier and Hill (2018) that feelings of institutional subordination can arise when beneficiaries seek aid.

Furthermore, due to the nature of the pandemic, hoarding goods, social distancing, and fear of hospitals became common. If donors are the ones that can provide vital goods or time to help those in need, but doing so no longer becomes desirable or is not perceived as safe, there could be compounding factors impacting beneficiaries' abilities to secure goods. For example, researchers studied blood donations, which are needed resources, during the pandemic and how to manage donations (Masser, Hyde, and Ferguson, 2020) as a result of the fear around the pandemic. These are just a couple of examples of how inputs from providers may influence the outcomes of beneficiaries, and there are many additional opportunities to explore here, which may contribute to a larger conceptual framework that can capture the inputs from providers and the subsequent outcomes of beneficiaries.

Overall, with a newer focus on resource scarcity within the last five years, there seems to be many opportunities to expand upon resource scarcity and reactions to the state of scarcity as well as the process to meet one's needs. Above are just a few examples of ways to move forward. However, like Chakravarti did in 2006 when calling for researchers to help support consumers facing chronic scarcity, I think there also needs to be more attention focused on the impacts of temporary as well as chronic scarcity, the experience of being in a state of need, and the process to move out of need, as well as reactions linked to moving out of scarcity states.

In Closing

"The test of our progress is not whether we add more to the abundance of those who have much; it is whether we provide enough for those who have too little." ― Franklin D. Roosevelt

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Appendix A: Summary of Methods for Studies 1-3

Study	Design	Manipulations and Measures
Study 1	**Secondary Data Analysis** **1 Factor Design** **Measured IV:** Effort **DV:** Participation Rates at Different Income Levels and Therefore Benefit Levels	**To measure effort:** I determined what policy variations require more or less effort and coded those as higher or lower effort, and once I coded each policy based on effort, I added up the effort required across all the policy variations to get a total effort measure **To measure participation rates at benefit levels:** I used the report each state has on participation rates based on what percent of needy, eligible individuals participate, and I examined what share of these participants fell into three income groups while assuming benefits would be based on income level
Study 2	**Controlled Lab Experiment** **2 Factor Design** **Context:** Resource Scarce **Manipulated IV:** Effort (Cognitive) **Manipulated Moderator:** Benefits **DV:** Intent to Continue Participation	201 Participants were recruited using Prolific and were paid no less than $6.50 per hour Participants were placed in a resource-scarce context and assigned to an effort and benefit condition **To manipulate the benefits of eligibility:** participants were informed of their higher or lower benefit amount **To manipulate eligibility effort:** participants completed application questions demanding more or less cognitive effort based on the question difficulty and readability Participants completed measures for: Intent to Continue Participation, Manipulation Checks, and Other Demographic Measures
Study 3	**Controlled Lab Experiment** **2 Factor Design** **Context:** Resource Scarce **Manipulated IV:** Effort (Time) **Manipulated Moderator:** Benefits **Measured Mediator:** Perceived Justice **Primary DV:** Intent to Continue Participation **Secondary DV:** State Anxiety	272 Participants were recruited using Prolific and were paid no less than $6.50 per hour Participants were placed in a resource-scarce context and assigned to an effort and benefit condition **To manipulate the benefits of eligibility:** participants were informed of their higher or lower benefit amount **To manipulate eligibility effort:** participants completed application questions demanding more or less time effort based on the total number of questions asked Participants completed measures for: Intent to Continue Participation, Perceived Justice, State Anxiety, Manipulation Checks, and Other Demographic Measures

Appendix B: Sample Materials from Literature used for Studies

Resource Scarce Context:

Hill, Sarah E., Christopher D. Rodeheffer, Vladas Griskevicius, Kristina Durante, and Andrew Edward White (2012). Boosting beauty in an economic decline: Mating, spending, and the lipstick effect. *Journal of Personality and Social Psychology, 103,* 275–291. https://doi.org/10.1037/a0028657

Direct Verbiage From the Article Above:

"participants read a news article ostensibly from the New York Times about the recent economic downturn. The article was a modified version of an article appearing in the Wall Street Journal on September 18, 2008 ("Worst Economic Crisis Since '30s With No End in Sight"; Hilsenrath, Ng, & Paletta, 2008). The article described the growing harshness in the world economic markets, highlighting how growing unemployment and increased resource scarcity make the current recession similar to the Great Depression, but with no end in sight."

Effort Manipulation:

Garbarino, Ellen C. and Julie A. Edell (1997). Cognitive Effort, Affect, and Choice. *Journal of Consumer Research, 24,* 147-158.

Direct Verbiage From the Article Above:

"We told respondents they would be making a number of choices from among four brands described on two to four attributes (see Table 1). They were told that each brand's overall evaluation could be determined by summing the attributes (fractional ratings) and that a higher evaluation represented a better alternative. Respondents were told they would receive $.25 for each alternative they evaluated correctly. A self-paced review of how to add fractions was provided. Respondents were allowed to use paper and pencils but not calculators."

"For each of the seven choices, information was presented on four brands. The brands varied in the effort required to calculate their overall evaluations. Two brands were moderately effortful to evaluate (nontarget brands), while one of the target brands was more effortful and one of the target brands was less effortful to evaluate. The more effortful brand was pretested to ensure that it took at least twice as long to evaluate as the less effortful brand."

Gawronski, Betram (2003). On Difficult Questions and Evident Answers: Dispositional Inference from Role-Constrained Behavior. *Personality and Social Psychology Bulletin, 29* (11), 1459–1475. https://doi.org/10.1177/0146167203256375

Direct Verbiage From the Article Above:

"Question Difficulty. To Manipulate The Difficulty Of The questions, a total of 44 general knowledge questions selected from different parlor games (e.g., Trivial Pursuit) were pretested for their difficulty. For this purpose, the selected questions were posed to 40 psychology students in a short questionnaire. Questions with less than 10 correct answers were treated as difficult questions; questions with more than 30 correct answers were treated as easy questions. From these questions, a set of 4 easy ones were selected to be the ones the contestant could answer correctly in the simulated quiz. In addition, two sets of 6 questions were taken to be the ones the contestant could not answer correctly. One of these sets consisted of easy questions and one consisted of difficult questions."

Perceived Justice Measures:
Colquitt, Jason A. (2001). On the dimensionality of organizational justice: A construct validation of a measure. *Journal of Applied Psychology, 86*(3), 386–400. https://doi.org/10.1037/0021-9010.86.3.386

Direct Verbiage From the Article Above:

Distributive justice

"The following items refer to your (outcome). To what extent:"
"1. Does your (outcome) reflect the effort you have put into your work?"
"2. Is your (outcome) appropriate for the work you have completed?"
"3. Does your (outcome) reflect what you have contributed to the organization?"
"4. Is your (outcome) justified, given your performance?"

Participation — Intent to Continue Participation Measure:
Maheswaran, D., and Meyers-Levy, J. (1990). The Influence of Message Framing and Issue Involvement. *Journal of Marketing Research, 27*(3), 361-367. doi:10.2307/3172593

Direct Verbiage From the Article Above:

"Intentions to take a diagnostic blood test were assessed on three 7-point scales that asked whether subjects intended to take the blood test soon or intended to take the test in the future, and whether the materials subjects read made them more or less likely to take a diagnostic blood test in the future."

Anxiety Measure:
Spielberger, Charles D. (1983). Manual for the State-Trait Anxiety Inventory (STAI). Palo Alto, CA: Consulting Psychologists Press.

Direct Verbiage From the Article Above:

"Read each statement and select the appropriate response to indicate how you feel right now, that is, at this very moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best."
"4. I feel strained"
"7. I am presently worrying over possible misfortunes"
"11. I feel self-confident"
"14. I feel indecisive"
"19. I feel steady"

Effort Manipulation Check:
Cooper-Martin, Elizabeth (1994). Measures of cognitive effort. *Marketing Letters, 5,* 43–56. https://doi.org/10.1007/BF00993957

Direct Verbiage From the Article Above:

"Table 1. Self-report questions on cognitive effort"
"1. I didn't take a lot of time to choose a coffee mug?"
"3. I thought very hard about which coffee mug to pick."
"4. How much effort did you put into making this decision?"
"7. It was difficult for me to make this choice."

Appendix C: Additional Non-Significant Analyses for Study 3

Sense of Control Measure:
Lachman, Margie E., and Suzanne L. Weaver (1998). Sociodemographic Variations in the Sense of Control by Domain: Findings from the MacArthur Studies of Midlife. *Psychology and Aging,13*(4), 553-562. https://doi.org/10.1037/0882-7974.13.4.553

Control Results:
A two-factor ANOVA found no interaction between benefits and effort on the sense of control ($F(1, 268) = 0.36$, $p = .549$). The main effect for benefits on the sense of control was marginal significant ($F(1, 268) = 3.36$, $p = .068$, $M_{Lower} = 4.19$ vs. $M_{Higher} = 4.49$). The main effect for effort on the sense of control was not significant ($F(1, 268) = 0.01$, $p = .931$, $M_{Lower} = 4.35$ vs. $M_{Higher} = 4.33$).