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Published in:

Journal of Public Administration Research and Theory

DOI:

[10.1093/jopart/muac043](https://doi.org/10.1093/jopart/muac043)

Publication date:

2022

Document Version

Publisher's PDF, also known as Version of record

Citation for published version (APA):

Madsen, J. K., Bækgaard, M., & Kvist, J. (2022). Scarcity and the Mindsets of Social Welfare Recipients: Evidence from a Field Experiment. *Journal of Public Administration Research and Theory, Online first*. <https://doi.org/10.1093/jopart/muac043>

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Scarcity and the Mindsets of Social Welfare Recipients: Evidence from a Field Experiment

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Abstract

Financial scarcity is a fundamental condition for recipients of social welfare. We draw on scarcity theory to suggest that the condition of scarce resources may have a range of important psychological consequences for how welfare recipients' cope with their problems, navigate citizen-state interactions, for their perceived ability to deal with their problems, and for their psychological well-being. In a field experiment using Danish unemployed social assistance recipients ($N = 2,637$), we test the psychological consequences of scarcity by randomly assigning recipients to be surveyed either shortly before payment of their social assistance benefits, shortly after, or mid-month. We find no impact of the scarcity manipulation and thus our main findings run counter to the idea that short-term changes in scarce financial conditions influence the mindsets of social welfare recipients. However, a series of exploratory cross-sectional regressions show that subjective scarcity, i.e. 'the feeling of having too little', is associated with an increased focus on solving problems, but negatively associated with psychological well-being, sense of mastery, and job search self-efficacy. We conclude that these correlates may reflect more long-term consequences of scarcity but that more and stronger causal evidence is needed given the cross-sectional nature of these data.

Keywords

Scarcity; social welfare; field experiment; administrative burden; financial strain;

JEL classification

C93; H83; I32; I38; J64

ABSTRACT - DANISH

Økonomisk knaphed er et grundlæggende vilkår for modtagere af sociale ydelser. Vi argumenterer for, at knaphed på økonomiske ressourcer har en række vigtige konsekvenser for, hvordan ydelsesmodtagere håndterer deres udfordringer, navigerer i deres møde med systemet, for deres opfattelse af deres evne til at håndtere deres problemer og for deres mentale velbefindende. Vi anvender et felteksperiment med danske kontanthjælpsmodtagere (N = 2,637) til at teste de psykologiske konsekvenser af knaphed. I eksperimentet randomiseres kontanthjælpsmodtagerne til enten at modtage et spørgeskema kort før udbetalingen af deres ydelse, kort efter eller i midten af måneden. Imidlertid finder vi ikke nogen signifikante effekter af vores knaphedsmanipulation på de outcomes, som vi er interesserede i, og resultaterne underbygger derfor ikke, at fluktuationer i knaphed har de forventede psykologiske konsekvenser. I en opfølgende eksplorativ analyse finder vi imidlertid, at folks subjektive følelse af at have for lidt er forbundet med et øget fokus på at løse problemer, men negativt forbundet med deres mentale velbefindende, deres oplevede evne til at håndtere deres problemer, og deres oplevede evne til at være i stand til at søge jobs. Disse korrelationer kan afspejle mere langsigtede konsekvenser af knaphed, men mere og stærkere kausal evidens er nødvendig for at underbygge denne fortolkning, givet at data her har en tværskningskarakter.

Introduction

Being a recipient of social welfare means being in a fundamental state of financial need. While social welfare benefits are designed to uphold a certain standard of living among recipients and improve the conditions of those in need, recipients of welfare benefits are generally poor compared to the remaining population and many times fall below the poverty line (Danish Benefit Commission 2021; Center on Budget and Policy Priorities 2018; 2021: 15).

How does the state of having scarce financial resources influence the well-being and capacity of benefit recipients? Research on scarcity mindsets (Mani et al. 2013; Mullainathan and Shafir 2013; Spears 2011) argues that financial scarcity can pose significant psychological challenges to individuals experiencing such conditions (De Bruijn and Antonides 2021; Lichand and Mani 2020; Mani et al. 2013; Ong et al. 2019). Recent studies have shown that scarcity imposes a cognitive load that drains resources already limited in capacity, such as attention, working memory, and executive control (Zhao and Tamm 2018; Adamkovic and Martoncik 2017). This causes individuals to focus on solving pressing immediate challenges raised by scarcity itself while attending less to strategies with long-term gains (Mittal et al. 2015; Shafir 2014). Thus, scarcity tends to occupy the mind of those in need (Christensen et al. 2020: 131).

We draw on this research to argue that the experience of scarce financial resources makes it harder for welfare recipients to navigate the system that they are part of. More specifically we extend the argument from scarcity theory to propose that scarcity leads to avoidant coping, difficulties understanding the welfare programs that welfare recipients are part of, less psychological well-being, and a feeling of being incapable of improving their situation. Not because of lack of intelligence or nutrition, but because financial concerns

drain attention and energy from dealing with their most fundamental problems. As attention is a limited resource, benefit recipients will have less energy left for understanding the system that they are part of and for mastering their situation when financial struggles capture their attention. In making and empirically testing this argument, we contribute to research on the experiences and motivation of benefit recipients (e.g., Bruch, Ferree, and Soss 2010; Gundert and Hohendanner 2015; Sykes et al. 2015; Watson 2015) and respond to a recent call for research looking into how factors outside the domain of citizen-state interactions might influence perceived administrative burden among benefit recipients (Baekgaard and Tankink 2022: 19). Previous research underscores the importance of the hassles and burdens that recipients have to struggle with while being on benefits (Baekgaard et al. 2021; Bertrand, Mullainathan, and Shafir 2004; Moynihan, Herd, and Harvey 2015; Sunstein 2020) and the resources that they need to be able to navigate the system (Christensen et al. 2020; Döring 2021; Masood and Nisar 2021). However, despite the strong prediction from scarcity theory that financial scarcity has severe behavioral implications, we know little about if and how scarcity influences benefit recipients' ability to navigate the system. We add to the literatures on welfare benefit recipients and administrative burden by testing a complementary perspective according to which benefit recipients' experiences and ability to navigate the system are a function of their financial needs.

Using a sample of Danish unemployed on social assistance ($N = 2,637$), we examine the impact of financial scarcity on recipients' psychological well-being, ability to navigate the benefit systems, and their belief in being able to improve their situation. First, we test the causal impact of financial strain by utilizing exogenous variation in financial resources by randomly assigning recipients to be surveyed shortly before payment of their benefits, shortly after, or mid-month. Second, in an exploratory follow-up analysis, we test how our outcomes correlate with *subjective scarcity* in a series of regressions.

Our findings show that financial scarcity, as manipulated in our experiment, has little effect on recipients. Overall, we therefore do not find any evidence that short-term income shocks have any impact on the psychological indicators that we are interested in. However, subjective scarcity is weakly positively associated with recipients' problem-solving coping, and strongly negatively associated with avoidant coping, psychological well-being as well as their ability to both navigate the benefit system and master their situation. While these findings should be interpreted with caution due to the exploratory and cross-sectional nature of the analysis, they in contrast to expectations indicate that *the feeling of having too little* may boost benefit recipients' focus on improving their situation by regaining employment, but simultaneously drains their perceived capacity to engage in such behaviors. Furthermore, subjective scarcity has substantial welfare implications as it is associated with lower psychological well-being and less ability to navigate the demanding benefit system.

In the next section, we present key insights from research on scarcity and develop our hypotheses about how scarcity influences how recipients deal with their situation. Here, we argue that scarcity functions as an external stressor that drains recipients' capacities to improve on their situation and reduce their general welfare. We then describe our case selection, data, and measures. Finally, we present our analysis and conclude by discussing limitations and implications for policy and future studies.

The psychology of scarcity

An impressive body of literature documents the seemingly suboptimal behaviors among individuals in poverty (de Bruijn and Antonides 2021; Bertrand, Mullainathan, and Shafir 2004; Shafir 2014). Scholars have long disagreed whether the increased likelihood among poor individuals to, for instance, overborrow, save insufficiently, or spend excessively are

rational and calculated decisions made in order to adapt to difficult economic circumstances (Sheehy-Skeffington and Rea 2017) or suboptimal decisions of individuals with low education, work experience, and financial and administrative literacy (Christensen et al. 2020; Döring 2021; Lusardi and Mitchell, 2014).

In recent years, however, a novel theory of scarcity has gained firm ground (Mullainathan and Shafir 2013). Incorporating insights from behavioral economics and cognitive psychology, it argues that financial scarcity in itself induces a mindset invoking decision-making and behaviors that ultimately can perpetuate the condition of poverty (Adamkovic and Martoncik 2017; Haushofer and Fehr 2014; Mani et al. 2013). Most studies within this tradition conceptualize scarcity as this subjective mindset as they define scarcity as the mere feeling of having insufficient resources to cope with demands (Zhao and Tumm 2018). However, in practice many studies link this mindset explicitly to explain conditions of poverty and behaviors of the poor or use research designs exploiting exogenous variation in actual income or wealth (e.g., Mani et al. 2013; Ong et al. 2019). As noted by de Bruijn and Antonides (2021: 9-10) there thus seems to be a mismatch between how scarcity is defined on the one hand and how it is measured on the other.

Although the underlying conceptualization and workings of scarcity are disputed, two psychological mechanisms stand out across different domains: First, scarcity causes tunneling, that is, a single-minded focus on the most pressing problems at hand. Focusing attention on the most pressing financial problems also means neglecting other challenges. In some cases, this can be advantageous to the individual because cognitive resources are used in dealing with the most pressing problems (Mullainathan and Shafir 2013; Fernbach et al. 2015). In other cases, however, it causes myopic decision-making in the form of, for instance, overborrowing or taking up high-interest loans to alleviate the immediate stress caused by scarcity at the expense of future needs (Shah et al. 2019; Mittal et

al. 2015; Chetty 2015). Some scholars argue that such myopia is an effect stemming from reduced self-control via the cognitive load of scarcity (Mani et al. 2013), while others suggest that it reflects rational adaptations to increased liquidity constraints (Carvalho et al. 2016; Cassidy 2018). Second, scarcity taxes mental bandwidth (Mullainathan and Shafir 2013). Scarcity captures the mind and displaces focus from other problems and challenges worthy of attention (Mullainathan and Shafir 2013). This in turn has been shown to reduce cognitive control and fluid intelligence in some cases and ultimately make it harder to navigate complex information environments (Mani et al. 2013).

Despite the broad application of scarcity theory, there have been no studies directly investigating how financial scarcity – which we here define as the objective lack of financial resources rather than the subjective experience of being in need – influence the mindsets of social welfare recipients. Addressing this gap is important because social welfare programs often entail substantial efforts on the part of the recipient to be successful (Herd and Moynihan 2018). Consequently, social welfare recipients receive benefits of low size to stay incentivized to engage in certain behaviors. At the same time, they have to live up to what is often quite complex rules and demands of social and labor market policies while handling the additional social, psychological, and health challenges that made them welfare recipients in the first place. Hence, the impact of scarcity on attention and mental bandwidth might adversely affect recipients' ability to successfully handle, navigate, and ultimately leave unemployment. For instance, financial scarcity is related to both job search intensity and depressive symptoms (Vinokur and Schul 2002). Other studies suggest that it increases need but simultaneously reduces take-up of benefits (Chudnovsky and Peeters 2020). Taken together, financial scarcity on the one hand might elevate the importance of leaving benefits but simultaneously makes recipients feel less capable of engaging in such behavior. Gaining a better understanding of how scarcity influences social welfare recipients will help provide a

more nuanced and comprehensive assessment of benefit policies and their welfare implications. In the following, we delineate our expectations about how financial scarcity affects how benefit recipients cope with their situation, as well as their ability to navigate the benefit system, psychological well-being, and perceived capacity to leave unemployment.

Coping behavior

How does scarcity influence the mindsets of benefit recipients? First, drawing on the observation that scarcity causes tunneling and in turn a bias towards present challenges at the expense of dealing with problems in the long term, we argue that scarcity leads to neglect about how to solve problems in the longer run, what is known in the coping literature as avoidant coping (Weinstein and Ryan 2011; Carver and Smith 2010; Christensen et al. 2006; Vinokur and Schul 2002). Being unemployed is a stressor with immediate and daily consequences (Linn, Sandifer and Stein 1985), which is why alleviating negative psychological effects of unemployment comes first for many. Yet, this might simultaneously result in less focus on arranging one's life to solve such challenges in the long run through job search as active job search is a goal-oriented, dynamic, self-regulatory process with clear immediate costs and uncertain future rewards (Wanberg et al. 2020; DellaVigna and Paserman 2005; Kanfer et al. 2001). Therefore, we expect that scarcity makes recipients focus on avoiding the immediate emotional stress of being unemployed (avoidant coping), while the cognitively more demanding and problem-focused approach to regain employment and structurally improve their financial situation through employment (problem-focused coping) will receive less attention (Weinstein and Ryan 2011; Chetty 2015; Gerards and Welters 2020; Mullainathan and Shafir 2013). Furthermore, as scarcity taxes mental

bandwidth, individuals will be left with less cognitive resources to engage in the relatively demanding task of effective job search. Consequently, we hypothesize:

H1: Scarcity reduces problem-focused coping

H2: Scarcity increases avoidant coping

Navigating the system

Second, scarcity activates budgetary concerns and worries about one's future financial situation which consumes the cognitive resources that could potentially have been used for other tasks (Johar et al. 2016; de Bruijn and Antonides 2021). As documented in the rich ethnographic literature on citizen-state interactions, life as an unemployed welfare recipient is not only characterized by efforts to regain employment, but also involves multiple compulsory interactions with - often bureaucratic - benefit systems (Auyero 2012; Barnes 2020; Mik-Meyer 2017; Nisar 2018; Soss 2005). Indeed, merely to stay eligible for the much-needed benefit payments, recipients of conditional welfare benefits have to actively comply with several demands and requirements, such as registration of activities, recertification, and compulsory meeting attendance. These interactions are not trivial. Recent studies suggest that such 'administrative burdens' – i.e. onerous experiences of implemented policies – are consequential and can in themselves compromise benefit recipients' psychological well-being (Baekgaard et al. 2021; Madsen and Mikkelsen 2021; Herd and Moynihan 2018). Importantly, these effects are more pronounced among citizens who lack human capital or face other circumstances that drain their cognitive resources (Christensen et al. 2020; Masood

and Nisar 2021; Chudnovsky and Peeters 2020). One such could be financial scarcity as it taxes mental bandwidth and forces social welfare recipients to spend significant energy on making financial ends meet on a daily basis. In effect, this will simply result in less energy to successfully navigate an already complex system (Christensen et al. 2020; Herd and Moynihan 2018). In line with theory on administrative burdens (Herd and Moynihan 2018), we define this as the costs of learning about and complying with rules in the benefit system and hypothesize that:

H3: Scarcity makes it harder to navigate the system

Psychological well-being

Third, scarcity induces a constant feeling of having too little to satisfy one's own basic needs, which can ultimately compromise psychological well-being. In line with research on the psychological costs of administrative burdens, we thus understand psychological well-being as the absence of perceived stress, stigma, and autonomy loss. As argued by proponents of Self-Determination Theory, the relationship between scarcity and well-being is mediated by psychological need satisfaction (Deci and Ryan 2017; DeHaan, Hirai, and Ryan 2016). Particularly relevant in this regard is how scarcity threatens the basic psychological need for autonomy, which is satisfied when one's behaviour is choiceful and volitional and threatened when one's behavior is coerced or pressured by forces alien to oneself (DeHaan, Hirai, and Ryan 2016). The latter can occur if the experience of financial strain forces people to reduce their expenses, save money and sell cherished possessions, or from the mere vulnerability to unexpected bills and other unpredictable events (Weinstein and Stone 2018; Dupuis and Newby-Clark 2015). Moreover, consistently having such recurrent financial worries can also induce a feeling of stress and anxiety (Adamkovic and Martoncik 2017; Haushofer and Fehr

2014; Jachimowicz et al. 2019; Ong et al. 2019), while stigma potentially arises from negative stereotype threats and the feeling of not being financially self-sufficient (Zhao and Tomm 2018). A negative impact of scarcity on key indicators of psychological well-being is thus a likely outcome among benefit recipients as they typically have little financial capital beyond their monthly benefit, low levels of economic support, and constantly may be subject to fines for non-compliant behaviors. Hence, the potential infringement of scarcity on basic need satisfaction is highly salient to them. Therefore, we hypothesize:

H4: Scarcity decreases psychological well-being

Perceived ability to deal with problems

Fourth, as scarcity taxes mental bandwidth, it in turn drains the capacity to overcome the problems that one faces. Recent studies show that scarcity creates an environment where individuals feel that they have few options available and are highly vulnerable to sudden changes (Sheehy-Skeffington 2019). In addition to the loss of autonomy, the pressure from scarcity can also make individuals perceive their financial conditions as symptoms of failure and thus compromise another basic psychological need for competence (Dahling et al. 2013; Vansteenkiste and van den Broeck 2018; Vinokur and Schul 2002). Long-term exposure to such an environment externalizes recipients' perceived control and drains their perceived ability to improve their lives and solve their most fundamental problems. Consequently, it is likely that scarcity lowers benefit recipients' sense of mastery and self-efficacy (Jachimowicz et al. 2019). Therefore, we hypothesize:

Case setting: Danish social assistance recipients

To test our hypotheses, we need responses from social welfare recipients who experience scarcity to a considerable extent and who have to navigate a complex system containing several requirements. To this end, we rely on Danish recipients of social assistance benefits. By far most unemployed in Denmark either claim unemployment benefits or social assistance. Social assistance is for people who have experienced a social contingency like losing a job, cannot provide for themselves, have no other benefit and who have assets (money as well as goods that can easily be sold and converted to money) amounting to less than €1,340 (10,000 DKK). Benefits are considerably lower for this group of unemployed than for the insured recipients of unemployment benefits and at the same time constitutes the main source of income, as all earnings will lead to a one-to-one deduction in benefits. Low benefits and a low threshold for savings in combination makes this group highly exposed to financial scarcity both in absolute terms and relative to other groups of Danes (Danish Benefit Commission 2021).

Moreover, recipients of social assistance must navigate a system containing several demands in order to stay eligible for benefits, while simultaneously looking for a job and dealing with scarce financial resources on an everyday basis. Our sample is based on social assistance recipients who have been assessed “job ready” by a caseworker, that is, able to take an ordinary job within three months. This group must actively search for work, accept offers of work, and participate in activities. This involves abiding by a series of requirements such as registering as a job seeker, entering a job search agreement, documenting weekly job

search activities online, uploading and updating a CV, self-booking and participating in regular meetings with job consultants and in activation offers like company traineeships.

Design and data

We collected survey responses among 19,068 Danish social benefit recipients using the Danish E-post system, which allows public authorities, utilities, insurance companies, universities, etc. to communicate directly to citizens by digital post. Individuals in our sample were invited to take part in our survey, which could be accessed by a link. To avoid biased attrition, we drew all respondents from an updated complete list of all social assistance recipients in Denmark. In total, we received 2,637 full and partial responses, thereby giving a response rate of 13.8%. As shown in Table 1, the sample roughly matches the target population on characteristics recorded in Denmark’s National Registry.

Table 1: Sample Representative Statistics

	Sample	Survey population
Percent male	53.3%	57.1%
Average age (in years)	45.8	44.6
Unemployment duration: Less than 1 year	59.4%	60.9%
Unemployment duration: 1–2 years	17.9%	17.5%
Unemployment duration: Greater than 2 years	22.7%	21.6%

Note: Survey population data is derived from www.jobindsats.dk and based on an accumulated average of all unemployment spells among social benefit recipients throughout the whole data collection period (February 2020 to November 2020).

For ethical reasons, we explicitly informed that participation was completely voluntary, that the research was conducted independent of government authorities, that individual responses would be anonymized, and that non-participation would not have any impact on their benefits or situation broadly speaking. Consistent with intentions, we also informed that the broader purpose of the project was to learn about how the participants

experienced being on benefits. To avoid demand effects, we did not declare any hypotheses to the respondents.

Extant research uses a variety of experimental techniques to induce exogenous variation in scarcity (de Bruijn and Antonides 2021: 9). Lab and survey experiments use priming tasks and games with manipulations of budgets or resources. While significant estimates of scarcity have been found in many published studies based on these designs, recent reviews and replication attempts suggest that these studies generally tend to be underpowered and that results in many cases do not replicate (O'Donnell et al. 2021). Another challenge for many of these studies is that they do not actually obtain estimates of differences in financial strain but rather aims to manipulating the feeling of scarcity independent of actual financial strain.

Other studies use field-experimentally induced or exploit natural occurring variation in wealth to obtain causal estimates of scarcity with high ecological validity. For instance, Cassidy (2018), Mani et al. (2013), and Fehr et al. (2019) exploit that farmers in Pakistan, India, and Zambia, receive income one time annually by measuring outcomes shortly before and shortly after harvest. Carvalho et al. (2016) randomly assign low-income US households to receive a survey shortly before or after payday, while Lichand and Mani (2020) in a similar fashion exploit variation in the timing of payments to Brazilian farmers by the cash transfer program Bolsa Família.

To obtain causal estimates of variation in actual financial scarcity with high ecological validity we, inspired by the latter stream of research, utilize proximity to payment day of benefits as a source of exogenous variation. In doing so, we exploit naturally occurring variation in people's resources over the course of a month and randomly assign respondents to participate in the study in groups invited either six days before they receive social assistance benefits (high scarcity) or one day after (low scarcity). As our respondents likely

anticipate their next benefit payment, we thus identify the effects from a sudden, yet short-lived and expected, change in scarcity (Carvalho et al. 2016; Mani et al. 2013). For the same reason, our respondents are likely to have expenses due shortly after payment day (e.g., pending bills, private debt, rent, etc.). We also included a third group invited for the survey mid-month in between two payments (moderate scarcity) to test whether financial scarcity starts affecting our respondents at an earlier stage than the end of the month. Taken together, by utilizing random assignment and a source of variation in scarcity exogenous to our dependent variables, our design thus resembles that of a field experiment. Figure 1 visualizes the sampling procedure.

Figure 1: Sampling Procedure

[Insert figure 1 here]

While respondents were invited to participate at a certain time, 83 percent responded within the five-day period that defines the group that they were randomly assigned to. To reduce the error that may arise from respondents not responding within the intended five-day period that they were assigned to, we report the estimates using the 83% compliers only. This corresponds to the complier average causal effect (CACE) (Hansen and Tummors 2020: 927). However, as scarcity might potentially influence non-response to our survey, we also report the intention-to-treat estimates (ITT) in Appendix C in which we use responses

from all respondents and treat them as if they responded on time. The two tests produce largely similar results.

To probe the robustness of our results over time, we replicated the sampling procedure across three waves, giving us nine experimental groups in total. The first wave took part in late February to mid-March 2020, the next in late September to mid-October 2020, and the third in late October to mid-November 2020. Prior to each wave, we randomly drew a unique sample of respondents from the full list of current social benefit recipients (ranging from 5,704 to 6,992 individuals per wave amounting to 19,068 across all three waves). As is evident from the balance checks presented in Appendix A, *F*-tests show no significant differences in the composition of the nine groups ($p > 0.1$ in all cases) and thus the groups do not differ on baseline characteristics such as age, gender, ethnic origin, unemployment duration, unemployment status, or parental status.

Measures

We rely on previously validated scales wherever possible. We predicted factor scores from separate confirmatory factor analyses and use the scores as response variables. See Appendix A, Table 2 for full item wordings and Appendix B for factor loadings and fit indices.

Coping strategies

The measure of coping strategies is adapted from Christensen et al. (2006) and includes two dimensions: problem-solving coping (five items) and avoidant coping (four items). Here, respondents were asked how well different statements described their way of dealing with being unemployed. Sample items include the following: “Try to find a job or start own

business” (*problem-solving coping*) and “Avoid thinking about my job opportunities” (*avoidant coping*). Each item is measured on a five-point Likert scale ranging from “Not at all” (0) to “Very much” (4). Coefficient omega is 0.64 for problem-solving coping and 0.60 for avoidant coping.

For further insight into the respondent’s orientation towards employment, we include a single-item measure of job importance. The measure estimates the respondents’ assessment of “how much a job would improve their current situation.” The item was rated on a five-point scale ranging from “Not at all” (0) to “Very much” (4).

Ability to navigate the benefit system

To estimate the recipients’ perceived ability to navigate the benefit system, we draw on two operationalizations of administrative burden (Herd and Moynihan 2018): compliance costs (the costs of, e.g., providing documentation, fulfilling requirements) and learning costs (the costs of, e.g., gathering and comprehending information about one’s benefit). Both measures are based on Madsen and Mikkelsen (2021). The measure of compliance costs consists of three items. Examples include the following: “I have to meet too many requirements (e.g., apply for multiple jobs each week or participate in courses)” and “I feel that activities (e.g., meetings, consultations, or courses) help me find a job” (reversed). Each item was rated on a five-point scale ranging from “Completely disagree” (0) to “Completely agree” (4). The final scale has a coefficient omega of 0.67. Our measure of learning costs also consists of three items. Examples include the following: “It takes too long to learn the rules that apply to me as a social benefit recipient” and “It is easy to understand exactly how the social benefit rules

apply to me” (reversed). Each item was rated on a five-point scale ranging from “Completely disagree” (0) to “Completely agree” (4). Coefficient omega is 0.70.

Psychological well-being

To measure psychological well-being, we rely on an adaptation of items developed in Thomsen et al. (2020) (see also Baekgaard et al. 2021). In doing so, we focus specifically on aspects of well-being related to interacting with the state and thus our measures deviate from broader measures of general well-being such as the Ryff scale (Ryff and Singer 1996). Our measure consists of 12 items in total with four items measuring each of the dimensions autonomy loss, stress, and stigma. Examples include the following: “As a social benefit recipient, I cannot organize my everyday life as I want to” (*autonomy loss*), “Being on social benefits puts me in a bad mood” (*stress*), and “When I meet new people, I prefer to hide that I’m on social benefits” (*stigma*). For each item, responses were given on a five-point scale ranging from “Completely disagree” (0) to “Completely agree” (4). Coefficient omega is 0.75 for autonomy loss, 0.79 for stress, and 0.83 for stigma.

Capacity to overcome one’s problems

To estimate the capacity to overcome one’s problems, we employ two measures of controllability. For a generalized measure of mastery, we rely on Pearlin’s Mastery Scale and include seven items (Pearlin and Schooler 1978). Examples include the following: “I can do anything when I put my mind to it” and “I have little control over the things that happen to me” (reversed). For each item, responses were given on a five-point scale ranging from “Completely disagree” (0) to “Completely agree” (4). Coefficient omega is 0.82.

Furthermore, we include a measure of job search self-efficacy which is adapted from Saks, Zikic, and Koen (2015) and include four items. Respondents were asked how difficult or easy they found it to be to “get invited for a job interview” or use their “network to find job opportunities.” Each item was rated on a five-point scale ranging from “Very difficult” (0) to “Very easy” (4). Coefficient omega is 0.72.

Exploratory analysis: Subjective scarcity

Not all people having low wealth and income experience having less than they need (de Bruijn and Antonides 2021; Mullainathan and Shafir 2013), and chronic states stress associated with long-term exposure to scarcity may be more psychologically important than the kind of short-term change we observe in our experiment (Ong et al. 2019). Since scarcity is an inherently subjective phenomenon which may reflect both short-term and more long-term exposure to severe financial need, we supplement our main examination with an exploratory analysis using a measure of subjective scarcity. In line with Mullainathan and Shafir (2013; see also Van Praag and Frijters 1999), we define subjective scarcity as the *feeling* of having too little to get along. We use a measure based on Carvalho et al. (2016) and adapted to the context of social assistance recipients in Denmark. In contrast to the experimental manipulation of financial strain, this is based on self-reported data and thus causal identification is much weaker. Also, the measure of subjective scarcity in contrast to our main manipulation may tap into how the condition of being exposed to scarcity over the long term affects individuals and thus be an indicator of a more chronic state of scarcity. The measure estimates the extent to which the respondents have had financial worries within the last 24 hours and draws on four items such as “In the last 24 hours, how often were you troubled about coping with ordinary bills?” and “... did you worry about your personal

financial situation?”. Each item was rated on a five-point scale ranging from “Not at all” (0) to “All the time” (4). The final scale has a coefficient omega of 0.95.¹

For additional robustness checks, we included a measure of perceived economic support (see Appendix G). The measure estimates the respondents’ ability to borrow 10,000 Danish Kroner (approx. 1,600 USD) from friends and/or family, if they suddenly faced unexpected expenses. The item was rated on a five-point scale ranging from “No, definitely not” (0) to “Yes, with certainty” (4).

Controls

We include a series of variables to control for confounders and improve the precision of our estimates. We estimate effects both with and without these controls. They include a series of socio-demographic background characteristics: gender, ethnic origin, age, level of education, and if recipients have children living at home. In addition, we control for unemployment duration as the existing job search literature consistently finds that at least some of the outcomes that we are studying, such as stress, are more pronounced among the long-term unemployed (McKee-Ryan et al. 2005; Paul and Moser 2009). Gender, age, and unemployment duration are drawn from official administrative registers. Access was obtained prior to sending out the survey invitation. Table 2 contains descriptive statistics for all variables included in the analysis.

¹ We report coefficient omega because it assumes a congeneric model with varying factor loadings as Cronbach’s alpha often underestimates construct reliability when assumptions of tau equivalence are violated.

Table 2: Descriptive Statistics

	<i>N</i>	Mean	Std.Dev.	Min	Max
Autonomy loss	2477	2.72	0.66	0	4
Stigma	2477	2.19	0.81	0	4
Stress	2477	2.49	0.77	0	4
Mastery	2483	1.93	0.64	0	4
Job search self-efficacy	2482	1.29	0.59	0	4
Compliance	2470	2.80	0.57	0	4
Learning	2471	2.52	0.68	0	4
Problem-solving coping	2489	1.91	0.53	0	4
Avoidant coping	2489	1.36	0.52	0	4
Subjective scarcity	2369	2.38	1.20	0	4
Economic support	2351	1.27	1.28	0	4
Age	2637	45.75	11.22	19	66
Gender: Male	1405	0.53	0.50	0	1
Gender: Female	1232	0.47	0.50	0	1
Education: Primary	427	0.19	0.39	0	1
Education: Tertiary	1015	0.44	0.50	0	1
Education: Secondary	865	0.37	0.48	0	1
Children: None	1608	0.69	0.46	0	1
Children: One	353	0.15	0.36	0	1
Children: Two	234	0.10	0.30	0	1
Children: Three or more	119	0.05	0.22	0	1
Ethnic origin: Danish	2076	0.90	0.30	0	1
Ethnic origin: Other	240	0.10	0.30	0	1
Unemployment duration: Less than a year	1565	0.59	0.49	0	1
Unemployment duration: 1–2 years	473	0.18	0.38	0	1
Unemployment duration: Greater than 2 years	599	0.23	0.42	0	1
Unemployment status: Full-time	1407	0.64	0.48	0	1
Unemployment status: Other	828	0.36	0.48	0	1

Notably, the average respondent responds that he or she has had significant worries about his or her financial situation at least some of the time the last 24 hours, indicating that financial scarcity is indeed a major concern for many recipients of social assistance. Likewise, the low mean value for “Economic support” indicates that recipients have limited opportunities with regards to getting financial help from others.

Questionnaire design

Our dependent variables were introduced in blocs in random order. To avoid questions about subjective scarcity priming respondents to think about economic worries before they have been exposed to the dependent variables, which could potentially lead to biased estimates of our experimental manipulation, we included the measure of subjective scarcity after all our dependent variables (Mullainathan and Shafir 2013) while control variables were placed at the very end.

Results

Figure 2 reports the complier average causal effects of our scarcity treatments, that is, the average treatment effects among respondents who answered the survey within the assigned five-day period of their treatment group. The figure shows the difference on all outcome variables for low and moderate scarcity, using high scarcity as the reference category. All in all, scarcity does not seem to affect any of our dependent variables. The only minor exception is a small negative and significant impact of moderate scarcity on avoidant coping, suggesting that recipients exhibit slightly less avoidant coping mid-month as opposed to at the end of the month ($b = -0.06$, $p = 0.046$). To bolster our confidence in the validity of our results, we supplement the analysis with intention-to-treat estimates where all respondents are included based on their original treatment assignment. As shown in Appendix C, this does not change our results and suggests that monthly variation in scarcity on average does not affect social welfare recipients' experiences of scarcity. This conclusion is also supported by Appendix D, which shows that subjective scarcity does not differ significantly between our

treatment groups. Reasons for these null findings are reviewed in the Discussion section further below.

Figure 2: Effects of Field-Experimental Variation in Scarcity²

[Insert figure 2 here]

Notes: Effect estimates (CACE) with 95 % confidence intervals.

As an additional robustness check of the impact of scarcity, we utilize data from a subset of our respondents ($N = 102$) who were eligible for child support, which was paid out on October 20, 2020, in between our second and third wave of data collection. Unlike the monthly benefit payments, child support amounts to a considerable sum of money per child in the household, but is only paid out four times a year. It would thus be expected to have a larger impact than monthly benefit payments.³ However, as shown in Figure 3, it has no impact on our dependent variables, thereby lending further support to the null findings presented in Figure 2.

² For the full regression models, see Appendix E.

³ In the Danish Child Support Scheme, parents or providers eligible for child support receive a tax-free payment four times a year for each child living in the respective household. The amount decreases with the child's age, starting at approximately \$720 per quarter for children from 0–2 years to approximately \$450 for children from 15–17 years.

Figure 3: Effects of Child Support Payments on Recipient Experiences

[Insert figure 3 here]

Notes: Effect estimates with 95 % confidence intervals.

Exploratory examination of the correlates of subjective scarcity

Since scarcity in essence has to do with the subjective *feeling or experience* of insufficient resources, two individuals exposed to similar financial conditions may experience scarcity to a very different extent. In this respect, it is notable that empirical research typically focuses on the effects of financial strain (e.g., Carvalho et al. 2016; Krosch and Amodio 2014; Mani et al. 2013) rather than subjective scarcity (but see de Bruijn and Antonides 2021). While some studies aim to induce concerns about finances or frame high and low scarcity in different ways (Krosch, Tyler, and Amodio 2017; O'Donnell 2021), it is less straightforward to create exogenous variation in subjective scarcity than in financial strain since such perceptions in many cases may co-vary with and be hard to isolate from other forms of perceptions. These methodological caveats mean that one should be careful not to confuse correlates of scarcity as perceived by social welfare recipients with causal estimates. Nevertheless, to get an impression of differences between individuals who perceive scarcity to different extents, we conduct a series of cross-sectional regressions in which we use our index of subjective scarcity as the main independent variable.

Turning to Figure 4, subjective scarcity strongly correlates with our dependent variables. First, we find that subjective scarcity positively correlates with problem-solving coping ($b = 0.058, p = 0.000$) and the recipients' assessment of job importance ($b = 0.208, p = 0.000$). In contrast to the expectations of Hypothesis 1, the results thus suggest that subjective scarcity is associated with a slightly stronger orientation towards solving current

problems and a moderately stronger inclination to elevate the importance of getting a job to improve recipients' situations. As expected in Hypothesis 2, however, subjective scarcity simultaneously is associated with more avoidant coping ($b = 0.136, p = 0.000$). Taken together, this suggests that recipients who experience higher scarcity are on the one hand more oriented towards improving their own situation, but simultaneously even more inclined to alleviate the immediate stresses of being unemployed on the other hand.

Figure 4: Correlates between Subjective scarcity and Recipient Experiences

[Insert figure 4 here]

Notes: Estimates with 95 % confidence intervals.

Turning to the perceived ability to navigate the benefit system, we find a positive correlation between subjective scarcity on the one hand and both learning costs ($b = 0.132, p = 0.000$) and compliance costs ($b = 0.105, p = 0.000$) on the other hand. These results are in line with Hypothesis 3 and might indicate that perceiving scarcity makes it more costly to both understand and comprehend conditions of the benefit system and live up to its demands although such causal claims should be made with caution. In addition, we find that subjective scarcity is strongly associated with recipients' psychological well-being, with positive correlations with autonomy loss ($b = 0.271, p = 0.000$), stress ($b = 0.342, p = 0.000$), and stigma ($b = 0.265, p = 0.000$). In line with Hypothesis 4, these findings might suggest that perceived financial scarcity is a stressor that detrimentally influences the psychological well-being of benefit recipients. Finally, the negative correlations between subjective scarcity and both mastery ($b = -0.207, p = 0.000$) and job search self-efficacy ($b = -0.037, p = 0.000$) indicate that feeling poor is associated with reduced perceived capacity among recipients to

master their own situation and a reduced confidence that they will achieve positive outcomes from their job search efforts.⁴

As shown in Appendix H, running the analysis for men and women separately does not show marked differences aside from a weaker and less consistent association between self-efficacy and subjective scarcity among men. Taken together, our findings are consistent with Hypothesis 5. To check the robustness of these results, we supplement our analysis by regressing economic support on our dependent variables in Appendix G. As one would expect, the associations between economic support and our dependent variables are weaker, yet consistent with those of subjective scarcity.

Discussion

Part of the reason why we do not observe any impact of our scarcity manipulation may have to do with our identification strategy. While our methodological approach resembles that of other field-experimental studies of scarcity by exploiting natural variation in the distance to payday (see Mani et al. 2013; Carvalho et al. 2016; Fehr et al. 2019; Lichand and Mani 2020 for similar approaches), there are notable differences between over study and those studies finding expected effects of scarcity, and notable similarities between over study and those studies finding null effects of scarcity. Compared to the study among Indian farmers by Mani et al. (2013) in which they use the annual harvest as source of exogenous variation, we exploit variations in income that happen more frequently. It is arguably easier for people to smoothen their consumption over the course of a month than over a year and hence to avoid urgent scarcity. On balance, the change in scarcity that we observe is therefore much less pronounced than in the studies of Mani et al. (2013) and Fehr et al. (2019) where they find

⁴ For robustness, we run the same regressions with perceived economic support as the independent variable. As one would expect, perceived economic support has the exact opposite relation to our dependent variables as perceived scarcity, albeit with less strength.

statistically significant effects but resembles that in the study of Carvalho et al. 2016 where they do not detect any significant impact of the change in wealth. Related to this point, the change in wealth that we observe is highly predictable. However, effects of scarcity may be larger in settings with high income uncertainty (Mani et al. 2020). In support of this proposition, Lichand and Mani (2020) find that high income uncertainty in the form of rainfall shocks is a much more important trigger of cognitive effects among Brazilian farmers than income scarcity which is studied by exploiting random payday variation.

Moreover, any sample of recipients of social welfare and low-income individuals will suffer from limited variation in the independent variable, as the vast majority of the sample will be in a permanent state of scarcity. Thus, there is limited room for observing actual fluctuations in such conditions, and this may help explain why our study, like the study of Carvalho et al. (2016), does not find any effects of scarcity in the field. Indeed, a recent study by Jarozewicz et al. (2022) in which poor US individuals are randomized to receive an unconditional onetime cash transfers worth either half or two-months of total household income supports the conclusion that one-time shocks may not be enough to deal with more permanent detrimental effects of scarcity. They observe no positive effects (and even some negative) of the field-experimental treatment on the financial or psychological well-being of participants. Their findings are most consistent with the interpretation that receiving some but not enough money made participants' needs more salient and hence were a cause of distress. In a similar fashion, receiving the benefit at the end of the month may just remind our respondents that they generally do not have enough to cover their needs. This may also be a possible explanation for why we to a large extent observe expected correlations between subjective scarcity and our dependent variables, since our measure of scarcity may be picking up on long-term exposure to scarcity which is likely to have highly individual effects and to a large part be independent of actual scarcity.

Another explanation for our insignificant findings may have to do with the dependent variables that we are interested in. Compared to previous studies (Carvalho et al. 2016; Mani et al. 2020; Shah et al. 2015), we study a different set of outcomes. These outcomes may be even more susceptible to confounding by conditions highly prevalent among recipients of social benefits, such as social problems, health impairments, or lack of education, than the outcomes in other studies.

All these factors speak to the conclusion that our scarcity manipulation is less likely to have measurable implications. On the other hand, the monthly social assistance benefits are comparatively low from a Danish standard and recipients are not allowed to have any substantial savings. This does highlight our case as a strong setting to test the impact of short-term variations in financial resources. If we were to find any impact of short-term fluctuations in scarcity among Danish welfare recipients, it should be for this group of recipients. In this respect, we also consider our findings of broader relevance for recipients of social welfare outside the borders of Denmark.

Finally, we note that while the correlates between subjective scarcity and our outcome measures are largely in accordance with expectations, they are merely correlates and may suffer from various threats to internal validity such as reverse causality bias and omitted variable bias (Carvalho et al. 2016: 260). They should therefore be interpreted with caution. We invite future research to consider how to obtain causally valid estimates of such perceptions. Previous research on the psychological impacts of scarcity has to a large extent used priming experiments to induce such feelings (de Bruijn and Antonides 2021). However, such manipulations suffer from at least two problems. First, even though most published studies produced significant effects in the expected direction, a large majority is considerable under-powered and do not replicate (O'Donnell et al. 2021). Second, such manipulations are unlikely to tap into how more permanent states of scarcity might influence benefit recipients.

For this purpose, there may be a need for longitudinal designs and designs where it is possible to distinguish permanent or long-term scarcity from short-term fluctuations in scarcity (see Ong et al. 2019).

Conclusion

We exploit a sharp decrease in financial scarcity on the day of payment of social assistance benefits to examine the causal impact of financial scarcity on the mindsets of social welfare recipients. Overall, we do not find any evidence that scarcity—as manipulated in our field experiment—influences the mindset of Danish social assistance beneficiaries. Further testifying to the conclusion that fluctuations in financial scarcity over the course of a month do not have any impact, we find no effects on our dependent variables from the quarterly payment of child benefits among respondents who have children living at home. In this respect, our findings run counter to prominent studies in which effects of scarcity have been identified on a range of different responses such as cognitive functioning, discrimination, and perceptions of race (e.g., Mani et al. 2013; 2020; Krosch and Amodio 2014; 2017) but resemble those of a similar study focusing on low-income populations (Carvalho et al. 2016).

Our findings challenge the idea that sharp but short-term fluctuations in scarcity are drivers of stress and uncertainty among social welfare recipients and influence how they cope with their situation, their ability to navigate the system they are a part of, their self-efficacy, and their feelings of stigma and autonomy over their own life. Rather, it is consistent with research on administrative burden emphasizing the demands that social welfare recipients have to deal with in order to keep eligibility for benefits (Baekgaard et al. 2021; Herd and Moynihan 2018; Nisar 2018) and policy feedback studies stressing the importance of the lessons that citizens draw from being in direct contact with authorities in government benefit

programs (Bruch, Ferree, and Soss 2010; Soss 2000). Also, the findings do not exclude the possibility that long-term states of scarcity or a high degree of income uncertainty might influence the mindsets of social welfare recipients.

While short-run fluctuations in financial strain do not matter for the mindsets of social welfare recipients, we do find in our exploratory analysis that subjective scarcity is associated in predictable ways with our dependent variables, suggesting that those who feel particularly poor are also those who find it harder to navigate the system, have lower psychological well-being, are more focused on improving their situation through employment, but simultaneously have less perceived capacity to leave unemployment. This set of findings is not based on a design allowing for strong causal identification, and thus should be treated with some caution. Looking to the future, they do however highlight critical issues for students of scarcity and social welfare benefits to consider. First, why does subjective scarcity differ between welfare recipients who are exposed to highly similar financial conditions (see also Carvalho et al. 2016)? Second, to what extent do such perceptions reflect more chronic states of scarcity? Third, what can be done to mold such perceptions? And what is the role of public discourse in shaping subjective scarcity among recipients of social welfare (Baekgaard, Herd, and Moynihan 2022)?

In extension, the findings invite a rethink of how policies target the unemployed. If subjective scarcity is associated with a stronger desire to improve the situation through employment, but also avoidant coping, less ability to navigate the system and less well-being, as suggested by the findings, it begs the question whether keeping benefits low may have detrimental effects on the job prospects for the long-term unemployed. Rather than using scarcity as a motivating engine in make-work-pay policies, appreciation might be a preferable alternative. This would imply that unemployed who take on work and activation offers are positively sanctioned with higher wage premiums and bonuses for

progress towards labor market participation rather than negatively sanctioned when not making progress. Also, financial counseling may be considered as an offer to the poor including those who are on social welfare. Helping people to manage their economy may contribute to less stress and avoidant coping and in turn better job prospects to the benefits of the individual and society.

Accepted Manuscript

Funding

This project has received funding from the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation programme (grant agreement no. 802244).

Data availability

The replication data and code for this article is available next to the article at the JPART webpage under the heading: Supplementary data.

Acknowledgements

The manuscript has benefitted greatly from the helpful comments and advice from editors and three anonymous reviewers at JPART. We are grateful to participants at the Public Administration section on Annual Meeting of the Danish Political Science Association in 2021 and members of the post-TED-conference in Bergen 2022 for suggestions and comments on earlier drafts of the manuscript.

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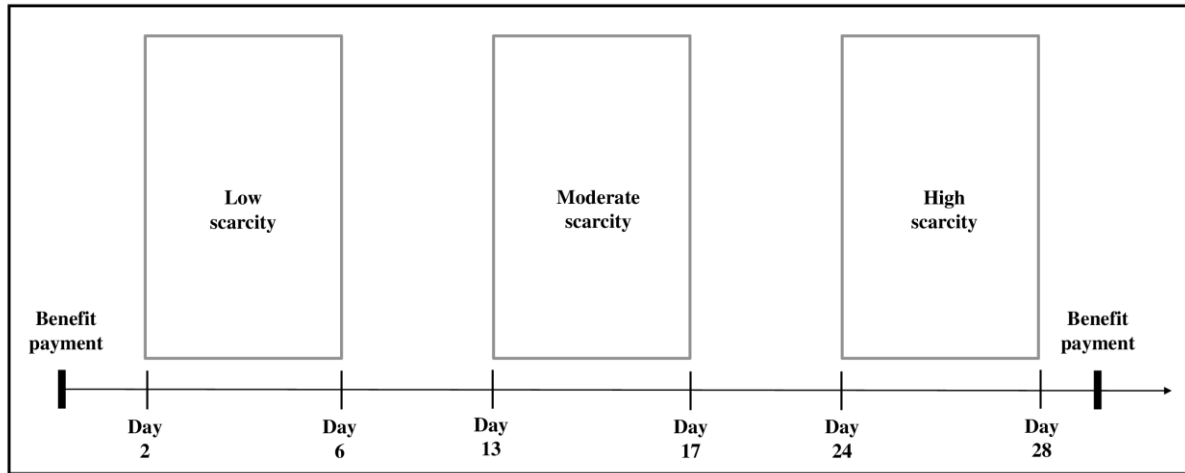
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Figure 1



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Figure 2

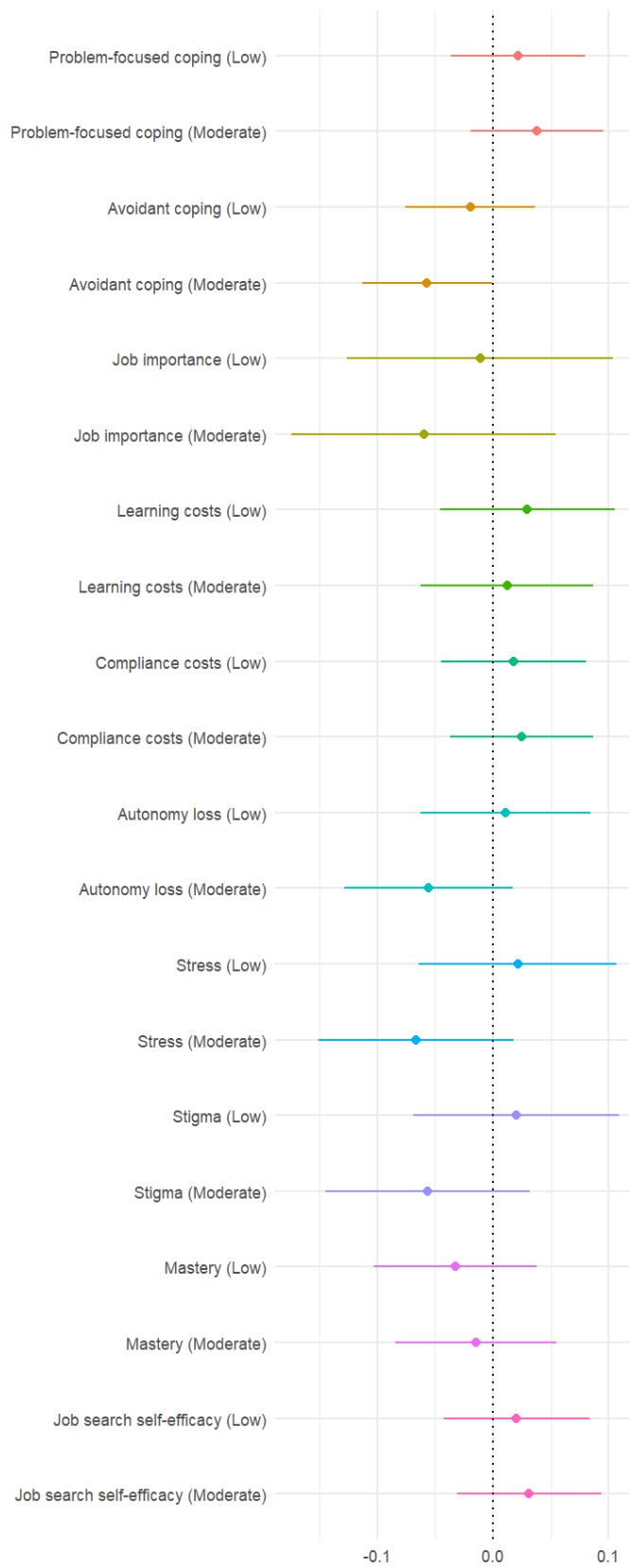
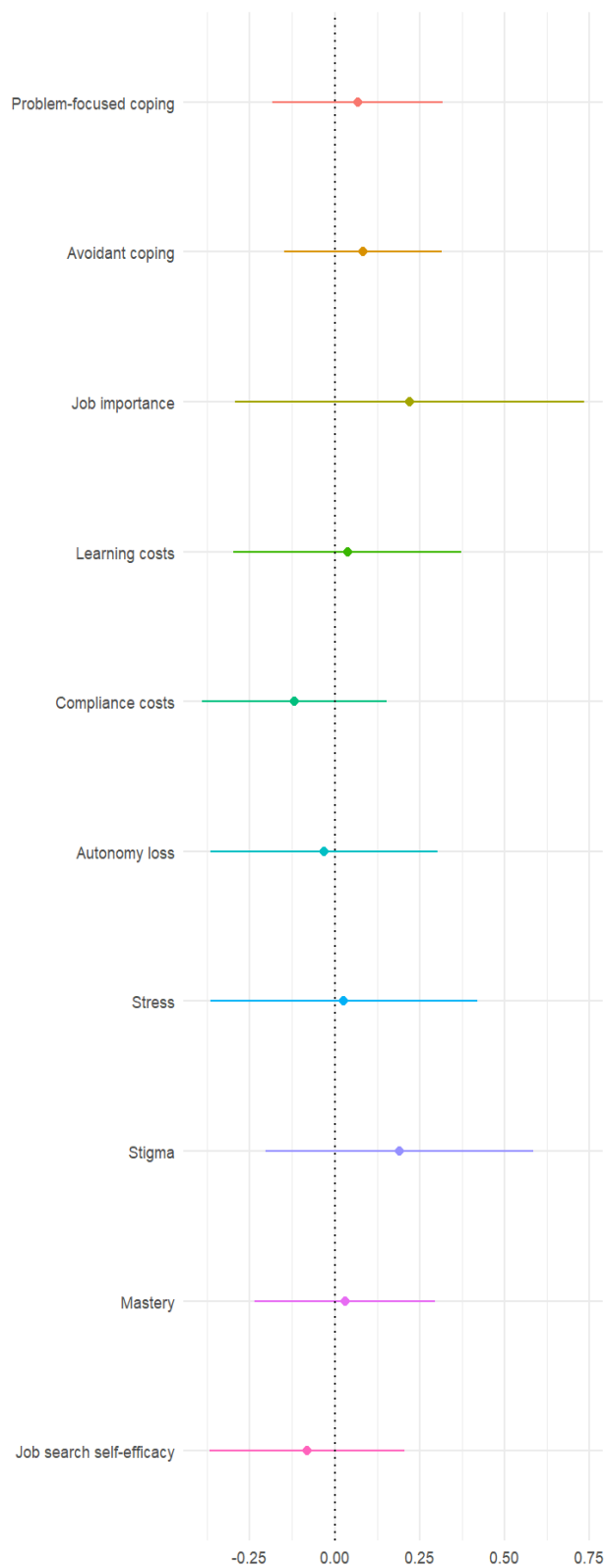


Figure 3



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Figure 4



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