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‘Being able to work has kept our life fairly constant:’ reconciling social practice models to assess the impact of (infra)structural inequities on household wellbeing during the COVID-19 pandemic


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‘Being able to work has kept our life fairly constant:’ reconciling social practice models to assess the impact of (infra)structural inequities on household wellbeing during the COVID-19 pandemic

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Abstract

Social practice theory offers a multidisciplinary perspective on the relationship between infrastructure and wellbeing. One prominent model in practice theory frames *systems of provision* as the rules, resources, and structures that enable the organization of social practices, encompassing both material and immaterial aspects of infrastructures. A second well-known model frames social practices in terms of their constituent elements: meanings, materials, and competences. Reconciling these two models, we argue that household capacity to respond to shifting systems of provision to maintain wellbeing is profoundly tied to the dynamics of privilege and inequity. To examine these dynamics, we propose a new analytical tool utilizing the Bourdieuan conceptualization of forms of capital, deepening the ability of social practice theory to address structural inequities by re-examining the question of *who* is able to access specific infrastructures. To illustrate this approach, we examine how households adapted to shifting systems of provision during the COVID-19 pandemic. Using data from 183 households in the Midwestern United States, we apply this tool to analyze adaptations to disruptions of multiple systems of provision, including work, school, food, and health, from February 2020 to August 2021. We highlight how household wellbeing during the pandemic has been impacted by forms of capital available to specific households, even as new social practices surrounding COVID-19 prevention became increasingly politicized. This research provides insight into both acute challenges and resilient social practices involving household consumption, indicating a need for policies that can address structural inequities across multiple systems of provision.

1. Introduction

The COVID-19 pandemic prompted mandatory lockdowns, state-of-emergency declarations, travel bans, and stay-at-home orders in countries around the world, and has continued to cause widespread disruption to the distribution and provision of goods and services. At the household level, responses to the pandemic have had varying impacts on consumption, which in aggregate play a pivotal role in the organization and function of global infrastructures. In the United States, the increased burden of procuring food amid mandatory statewide lockdowns and widespread job losses fell onto individuals and households, as food supply chains were significantly disrupted. Transportation and the use of other infrastructures in and around the household also shifted dramatically. These conditions prompted a range of consumer responses amid considerable uncertainty about what constituted appropriate practices for accessing available goods and services and for in-person interactions. Wide-ranging disruptions during the COVID-19 pandemic thus radically altered human interactions with infrastructures in a very short time, as households struggled to adapt and maintain overall wellbeing.

Social practices, defined as the routine habits and patterned behaviors that constitute most consumptive activities, have emerged as a recent site of inquiry for understanding human-infrastructure relations and how human behaviors intersect with infrastructural transitions (Shove *et al* 2012, 2015, Kennedy *et al* 2016). Social practices are ‘actual behavioral practices, situated in time and space, that an individual shares with other human agents.’ These practices, undertaken by ‘knowledgeable and capable agents,’ or actors, ‘*make use of the possibilities offered to them in the context of specific systems of provision*’ [italics in original] (Spaargaren 2003, p 688). Systems of provision were first introduced as alternative to ‘horizontal’ views of consumption (which focused on consumption across a range of goods) and instead sought to consider ‘vertical’ consumption, taking into account the full chain of activities underlying the material production and cultural meaning of different goods (Fine and Leopold 1993, Fine *et al* 2018, Fine and Bayliss 2022). Following the work of (Spaargaren 2003, 2006, 2011) to advance practice theory and support policies for sustainable consumption, we use *systems of provision* to refer to the rules, resources, and structures that enable the organization of social practices. Systems of provision are thus fundamentally tied to, but not the same as social practices: ‘the concept of ‘system of provision’ refers to the *contexts* of action, specified in terms of the sets of rules and resources (structures) that ‘help’ agents to organize social practices’ (Spaargaren *et al* 2006, p 109).

Provisioning systems can be understood to encompass *material* infrastructures, such as water and energy, grocery stores, farmers markets, and neighborhoods that allow home gardens; *transportation* infrastructures that shape access to goods, services, and people; parks and nature trails and other *outdoor areas* to recreate; as well as *immaterial* infrastructures, which include the organization of work, education, healthcare, and information, which people rely on in daily life. This broad framing of systems of provision aligns with recent expansions of the term infrastructure to encompass its human dimensions (Milligan 2021, The White House 2022) as well as with the focus in the anthropological literature on the immaterial aspects of infrastructure (Kanoi *et al* 2022). Bridging terminologies from engineering and the natural and social sciences, the terms *infrastructure* (in its broadest sense, spanning both human and physical infrastructures) and *systems of provision* (rules, resources, and structures) both imply a durability that is not readily changed by individual action, and in this sense, will be used interchangeably throughout the paper.

The social practices that shape human-infrastructure relations receive increased scrutiny during times of crises, when critical infrastructures are disrupted and rapid, widespread adaptations are necessary (Boin and McConnell 2007, Camps-Calvet *et al* 2015, Brosemer *et al* 2020, Gomez-Valencia *et al* 2022). Additionally, crises force individuals and households to shift social practices as they improvise within structural constraints. This paper explores how disruptions to systems of provision (such as those experienced during the ongoing COVID-19 crisis) not only shifted social practices related to household consumption but also shifted the ways households were structurally able to interact with disrupted systems of provision to maintain wellbeing during various stages of the pandemic (table 1). Wellbeing is a widely-used, multidimensional concept that includes material, relational, and subjective components (Armitage *et al* 2012, Coulthard 2012). For the purposes of this study, wellbeing is used as a proximate concept to resilience (Armitage *et al* 2012, Breslow *et al* 2016, Chaigneau *et al* 2022), which can be understood as the level of perturbation a system can withstand and continue to maintain its overall functioning (Morel *et al* 2019).

Based on a longitudinal study of households in a midwestern suburban county in the U.S., we detail how households adapted to these disruptions through reliance on shifting systems of provision, leveraging new materials, developing new competences, and contributing to new meanings associated with household consumption during the pandemic. As some systems of provision were disrupted, threatening a decrease in wellbeing, other systems provided opportunities for adaptations that enhanced household resilience. Given the many changes brought about by the pandemic, we note that resilience can take multiple forms. For

Table 1. The major provisioning systems examined in this paper.

Provisioning system	Aims and objectives	Assessment method
Occupation	<p>Illustrate the ways in which occupation functions as a provisioning system</p> <p>Identify the meanings, materials and competences that comprised emerging social practices surrounding disruptions to occupation at the actor and structure levels</p> <p>Identify the forms of capital that fostered resilience for some households</p>	Quantitative survey data, open-ended survey questions and journal entries
School	<p>Illustrate the ways in which school functions as a provisioning system</p> <p>Identify the meanings, materials and competences that comprised emerging social practices surrounding disruptions to school at the actor and structure levels</p> <p>Identify the forms of capital that fostered resilience for some households</p>	Open-ended survey questions and journal entries
Food	<p>Identify the meanings, materials and competences that comprised emerging social practices surrounding disruptions to food systems at the actor and structure levels</p> <p>Identify the forms of capital that fostered resilience for some households</p>	Quantitative survey data, open-ended questions and journal entries
Health	<p>Identify the meanings, materials and competences that comprised emerging social practices surrounding disruptions to health at the actor and structure levels (and how these diverged in the summer and fall of 2020)</p> <p>Identify the forms of capital that fostered resilience for some households</p>	Open-ended survey questions and journal entries

example, for some households changed social practices may have resulted in greater wellbeing through adjustments to a less demanding lifestyle. Resilience could also result in recovery to some different state, with temporarily or permanently altered practices. While some interpretations of resilience refer to recovery from shock to a different state (e.g. Nogal *et al* 2016), other accounts place emphasis on recovery to a similar state (Masten and Obradovic 2008, Johnstone *et al* 2016). Here, household resilience is seen as the extent to which households were able to do as well as they were prior to the pandemic (in either similar or different states) amid system-wide disruptions and dramatically altered circumstances.

The extent to which households were able to adapt—that is, shift their social practices—was dependent on access to multiple systems of provision and the adoption of new social practices. The uneven organization of that access and the ability to navigate infrastructural disruption are integrally linked with prior and concurrent conditions of wellbeing that are associated with structural social inequalities. Understanding the linkages between infrastructure, structural inequities, and household wellbeing in these terms can support planning and development of infrastructures that advance social equity, which is intertwined with wellbeing at community and societal scales.

We use grounded theory (Charmaz 2014) and theories of social practice (Spaargaren 2003, 2011, Spaargaren *et al* 2006, Shove *et al* 2012, Schelly 2016) to qualitatively examine changing dynamics in household consumption in a suburban region in the Midwestern U.S., analyzing open-ended survey responses and journal entries from a longitudinal study lasting from March 2020 to January 2021. These data offer firsthand accounts of practices developed in response to disruptions in systems of provision. We combine this approach with a quantitative analysis of relevant panel survey data from the same participants from February 2020 to August 2021. In the following section, we describe the theoretical foundations for this analysis in social practice theory. We then provide an overview of the impacts of the pandemic in the spring of 2020 in the U.S., showing how these unexpected, rapid shifts can be seen as disruptions to systems of provision, before turning to the context, design, methods, and findings of our study.

2. The relationship between infrastructure and wellbeing: why social practice matters

A key insight offered by social practice theory is that people often consume goods and services because of unthinking habits and patterns of behavior that are structured by the world around them, rather than because they are consciously identifying values and the corresponding consumptive practices that reflect and reinforce them. Theories of social practice thus advocate for centering social practices as the unit of analysis

and the lever for social changes in consumptive habits; the structures that individuals interact with while consuming are conceptualized as systems of provision. Social practices, as the routines of everyday life, are thus deeply tied to access to various infrastructures, both physical and human, and therefore to the wellbeing of individuals, households, and communities. Because consumption is the outcome of unthinking habits and routines of everyday life that are constituted with systems of provision—one significant source of change in social practices can be disruptions in the systems of provision. But what determines how those changes in consumption unfold and the variation in household responses to those shocks?

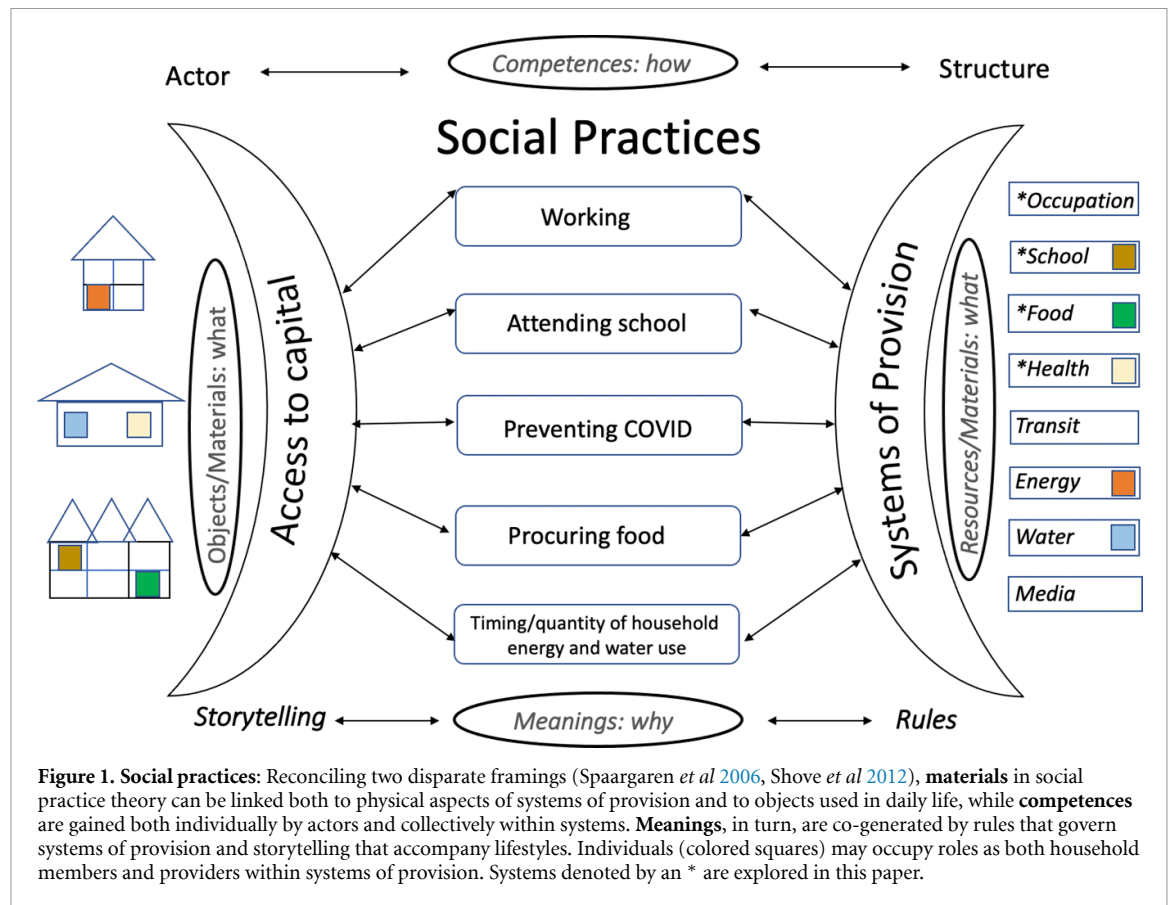
Two of the most influential models in the social practices literature conceptualize practice in terms of (1) lifestyles and systems of provision (Spaargaren 2003, 2011, Spaargaren et al 2006) and (2) three interrelated elements: materials, meanings, and competences (Shove et al 2012). Spaargaren et al envision lifestyles of individual actors to be ‘constructed from a series of building-blocks relating to the sets of social practices an individual is involved in when enacting his or her daily life, together with the storytelling that goes along with it’ (2006, p 108). Spaargaren’s concept of lifestyles can be seen as an attempt to distinguish ‘who’ consumers are, and to differentiate among them, while *systems of provision* broadly encompass the rules, resources, and structures enabling the organization of social practices in which consumers engage as they go about their daily lives. Whereas Spaargaren et al view social practices as the interactions of individuals (identified by lifestyles) with systems of provision, Shove et al (2012) instead conceptualize practices as products of the interdependent relationships among *materials*, *competences*, and *meanings*. In this framing, also known as the ‘three elements’ model, *materials* refer to the ‘things’ of daily life like objects, infrastructure, and tools that construct the built environment. Shared understandings, practical knowledge, and skills form *competences*. *Meanings*, the least tangible element, refer to the symbolic significance and social implications of a practice in a particular time and space. However, while Shove et al focus on the ‘what’ (*materials*), ‘how’ (*competences*), and ‘why’ (*meanings*) involved in social practices related to consumption, Spaargaren et al retain the ‘who,’ and at the same time more generally characterize ‘why’ (*rules*), ‘what’ (*resources*), and ‘how’ (*structures*) as together enmeshed in systems of provision.

It has been noted that there is no unified theory of social practice (Gherardi 2017, Mguni et al 2020). We directly address this gap, combining the most salient features of these two models of social practice, both of which attempt to transcend the dualisms of individual choice (agency) versus external forces, technology, and societal organization (structure) in explaining patterns of consumption. Our aim is to bring theoretical perspectives in practice theory together in ways that shed new light on empirical phenomena (e.g. Sovacool et al 2021) and, more specifically, to further conceptualize persistent (structural) inequities in provisioning systems, which in turn profoundly shape how households engage with infrastructure. We contend that ‘actor’ and ‘structure’ remain important units of analysis, even as the social practice approach offers new insights.

In the overarching theoretical framing introduced here (figure 1), we note that Shove’s *materials*, which refer both to ‘objects of daily life’ and to wider infrastructures, are clearly linked to the physical aspects of Spaargaren’s systems of provision (‘resources’). Likewise, Shove’s *meanings* can be equated with Spaargaren’s ‘rules,’ which govern access to and use of systems of provision, as well as the ‘storytelling’ that accompanies an individual’s lifestyle. Similarly, *competences*—in essence what you know how to do—appear both in the knowledge of how individual actors are able to utilize systems of provision and in the collective knowledge of how to develop and maintain infrastructures (e.g. water and electricity) within wider provisioning systems. Thus, each of Shove’s three elements has components appearing on both sides of the actor-structure continuum that Shove’s formulation of social practice theory is attempting to de-center. Moreover, individual actors often have dual roles as both consumers and providers of goods and services through their occupations (e.g. teachers, engineers, or medical personnel; indicated by colored squares in figure 1).

Although both approaches mention the role of inequality in social practice, these efforts are largely descriptive rather than analytical: Shove et al (2012) write that practices are ‘closely related... to highly structured and vastly different opportunities to accumulate and amass the different types of capital’ (p 65) and Spaargaren uses the concept of lifestyle to highlight social differentiation. In our view, neither approach adequately investigates how social hierarchies create inequities that in turn shape practices and the (in)ability of individuals to shift their practices. In addition, fully de-centering individuals/households and structures in favor of social practice risks overlooking precisely the elements that are fundamental to meaningful reforms needed to address structural inequities that shape individual/household access to provisioning systems, as well as how these inequities are woven within and perpetuated by social practice.

We propose that including forms of capital (also depicted in figure 1) can provide an analytical tool to examine how inequity intersects with infrastructures through social practices, privileging the wellbeing of some over others. In essence, the ‘who’ (or actor) involved in a given social practice is critically important when addressing structural inequity and can be meaningfully represented in terms of the many forms of capital, beyond merely money, that a given individual is able to access. This conceptualization draws on Bourdieu, who articulated three main forms of capital: (1) *economic* (‘immediately and directly convertible



into money and may be institutionalized in the form of property rights’); (2) *social* (‘made up of social obligations (connections)’); and (3) *cultural*, which can be further broken down into *embodied* (‘long-lasting dispositions of the mind and body’), *objectified* (material objects and media), and *institutionalized* (academic qualifications) (Bourdieu 1986, p 16–17). *Temporal* capital refers to the way time is understood to be a resource in everyday life that can be saved, made, wasted, and spent (Wang 2013, OConnor 2018). Through this lens, Spaargaren’s *lifestyles* can be understood as partially determined by the social positionings associated with the various forms of capital that households may, or may not, be able to leverage when they are required to shift practices in response to disruption in established systems of provision. In contrast to the durability of infrastructures/provisioning systems (suggestive of nouns), forms of capital can be seen as relational verbs that actively privilege some individuals and groups over others.

Moreover, given that access to these systems of provision is inequitably distributed based on neighborhood affluence and intertwined with the history of slavery and racial and ethnic segregation in the United States, recognizing *who* is able to access different forms of capital to engage in particular practices related to household consumption is fundamentally an issue of social justice, and represents an important step in the redress of structural inequities based on race, ethnicity, and gender. Such redress, in turn, can contribute substantively to collective wellbeing. Spatial segregation among households with various forms of capital profoundly influences which households in the U.S. have the capacity for resilience in the face of crisis. The inequitable impacts of the pandemic (Clark *et al* 2020, Fortuna *et al* 2020, Honey-Rosés *et al* 2020, Lou *et al* 2021, Spotswood *et al* 2021) and the increased care burden placed on women and families with children worldwide (McLaren *et al* 2020, Power 2020, Chauhan 2021) have been well documented; for example, a recent study found that 57% of mothers reported worsening mental health due to the pandemic, compared with 32% of fathers (Hamel and Salganicoff 2020).

During the COVID-19 pandemic in 2020 and 2021, the widespread economic insecurity faced by millions of US households meant that trade-offs were required between necessities such as paying water and energy utility bills, purchasing food, and obtaining healthcare (Graff and Carley 2020). Even more fundamentally, there are inherent inequities in housing itself as a system of provision: ‘Shelter in place’ or ‘safer at home’ has been essential in addressing the current pandemic, yet, prior to the pandemic, nearly 40 million people faced some level of housing insecurity or rent- and mortgage-burden’ (United Frontline Table 2020). In a survey of over 4000 U.S. households, Black and Hispanic respondents were found to be more vulnerable to housing-related hardships during the pandemic compared to White respondents (Chun *et al* 2020).

Throughout the rest of this paper, we draw on our synthesis and extension of these two models to examine shifting social practices during the COVID-19 pandemic. Our analysis implicitly involves a ‘when’ (during the pandemic, representative of sudden and prolonged infrastructural disruption) and sharpens the ability of social practice theory to grapple with *who* engages in what kinds of adaptive practices. Our explicit focus is on how households were able to leverage specific forms of capital—economic, social, temporal, embodied, and institutional—to access disrupted infrastructures and maintain wellbeing (or not) by engaging (or contesting) the new social practices that emerged as widespread adaptations to the pandemic, and as COVID-prevention practices became increasingly politicized. Specifically, we consider changing materials, meanings, and competences involved in new social practices both at the structure (systems of provision) and at the actor (household) level. Each system of provision we examine in this analysis—occupation, school, food, and health—is integrally involved in provisioning some aspect of household wellbeing. In our results, we identify the forms of capital that afford some households privilege in engaging in adaptive social practices, and for others reveal a lack of privilege characterized by systemic injustice, during periods of widespread disruption.

2.1. Disruption to energy and food systems of provision and consumption in the United States during the pandemic

Before describing the parameters for our study, we provide an overview of the wide-ranging impacts of the pandemic as it first unfolded in early 2020, highlighting disruptions to systems of provision as they relate to household consumption. Drawing on the framing provided in figure 1, we illustrate how sudden infrastructural disruption precipitated widespread and sweeping changes in social practices, with differential impacts that were based on household access to various forms of capital. Stay-at-home orders were issued in states throughout U.S. in March and April 2020, leading to a loss of income for many adults (Gundersen *et al* 2021), corresponding directly to a loss of economic capital. In April 2020, 45% of respondents reported job disruption or loss (Niles *et al* 2020a), reflecting record levels of unemployment, which reached 14.8% in April 2020 in the U.S. (Falk *et al* 2021). Furthermore, food insecurity increased dramatically in the early months of the pandemic; one study reported a 33% increase as of March 2020 and 24.4% of respondents experiencing food insecurity since the first case of COVID-19 was identified (Niles *et al* 2020b). Just 19% of adults with very low food security were able to comply with the USDA’s recommendations to minimize exposure by purchasing two weeks’ supply of food at a time (Wolfson and Leung 2020).

Disruptions to the food system in the U.S. began in mid-March of 2020. Grocery stores and restaurants directly serving end consumers faced volatile supply and demand pressures. The provisioning of food at the household level involves social practices that regularly bring individuals out of their homes (depicted on the left side of figure 1) and into food retail spaces (part of the provisioning systems on the right). As stay-at-home orders were issued in the second half of March, many Americans rushed to grocery stores (AJMC 2020, Moreland *et al* 2020), leading to an increase in demand for shelf-stable food products and non-food items, such as canned goods, frozen foods, bottled water, hand sanitizers, soap, and toilet paper (Telford and Bhattarai 2020). These materials gained newfound significance as uncertainty mounted regarding the extent and duration of supply chain disruptions. March 2020 saw a 25.6% increase in U.S. consumer food spending from February 2020, and a 29% increase compared to March 2019 (Felix *et al* 2020). New social practices such as online grocery shopping, meal delivery services, and curbside pickup business gained traction; at the same time significant disparities emerged in who used (and has continued to use) such services, and who is *allowed* to use them, ‘resulting in inequitable access’ (Arm *et al* 2022).

Supply chain disruptions in turn created a shockwave for food producers and distributors functioning as key nodes in food provisioning systems (illustrated on the right side of figure 1). Farmers struggled to determine whether to change crops or end production for the year because of the difficulty in finding workers. Food-service distributors had to deal with logistical bottlenecks and storage-space shortages due to high demand, low supply, and reduction and volatility in the workforce. Consumer and packaged goods companies had to confront the issue of heightened demand for shelf-stable products while dealing with scarcity from processors including multiple closures of meat-processing plants (Felix *et al* 2020). These uncertainties were in turn reflected in rising food prices (U.S. Bureau of Labor Statistics 2020), contributing to increasing precarity for tens of millions. Reflecting further differential impacts, essential workers in the food system were subject to increased risk of COVID exposure. (Individual workers in systems of provision are depicted by the squares on the right in figure 1; their dual role in both specific provisioning systems and specific types of consumption is also highlighted by their presence in homes on the left side of the figure).

Unlike food procurement, which generally takes place outside the home, energy and water consumption shifted from commercial to residential areas where it is largely distributed via utilities directly into homes. Business closures and transportation suspensions led to an overall decrease in average weekday energy consumption (Redmon *et al* 2020) and a decrease in many water utilities’ revenues (Berglund *et al* 2021). In

April 2020, there was a 38 000 MWh per day reduction compared to April 2019. With more people at home, however, residential energy consumption increased (Chen *et al* 2020, Redmon *et al* 2020), re-constituting (material) demands around energy generation in the form of heat and electricity used at home, and requiring the development of new competences on the part of energy providers to cope with these shifts. Time of electricity and water use was also reported to change during the pandemic, with respondents indicating that usage started later in the morning and was more constant throughout the day (Chen *et al* 2020); these social practices are depicted in the center of figure 1. Not only did home energy use increase during the pandemic, prices of electricity also increased: the average U.S. residential electricity price rose by 4.3%, from 13.2 cents per kilowatt hour (kWh) in 2020 to 13.7 cents kWh⁻¹ in 2021 (EIA 2022). As increasing time at home and rising prices caused energy and water bills to increase, so too did energy and water insecurity, i.e. the likelihood that a household would be unable to pay its utility bills (Graff and Carley 2020).

The widespread disruption of accepted household consumption practices during the COVID-19 pandemic set the stage for the emergence and formation of new social practices regionally, among communities, and at the household level. Increasing demands for residential energy and water, for example, required that households have adequate economic means to pay for access; yet only some workers were able to shift to working from home to maintain income. Highlighting structural differences in emerging social practices is an important step in illuminating the combined structural inequities that place some groups at much greater risk when provisioning systems undergo rapid and profound disruptions. These examples provide context for the more specific points we explore via the data analysis presented below.

3. Materials and methods

We use data from a longitudinal investigation that had begun prior to the pandemic, which shifted our study focus to accommodate rapidly changing conditions. The pandemic rendered the original project plans infeasible, as households would have been unable to meaningfully shift their consumption in response to environmental messaging given the external crisis. Through additional funding, we adapted our study design, expanding and re-refocusing the scope of the initial project. This allowed us to observe and engage with study participants as they adapted to pandemic-related infrastructural disruptions.

3.1. Description of sample

The data utilized in this paper come from 183 households in Illinois enrolled through direct digital recruitment in the aforementioned longitudinal study of household consumption, which ran from February 2020 through September 2021. The number of participants in the study declined from over 200 in February 2020 to around 140 some months later; a second digital recruitment drive at the beginning of 2021 boosted the sample size to 166 for the remainder of the study. Participants who prematurely exited the study were demographically similar in race, median age, income, and education to those who remained, limiting potential attrition bias.

This convenience sample was not designed to be representative of the regional population. Compared to county demographics, primary respondents for each household show an overrepresentation of Caucasians (85% White), females (71%), those with a Bachelor's degree or higher (85%), and an underrepresentation of Democrats (50%). County-wide, 60.8% voted Democrat in the 2020, with 36.8% voting Republican, and the remaining 2.4% voting Independent (bestplaces.com 2022). The median age was 45 years. Overall, 65% of sample households had one or more children under age 18 at home during the pandemic's early stages; 35% did not. Most households (92%) did not include people 65 and older (table 2). Excluding 10 households responding 'rather not reply', the median income for 181 households was in the range of \$115 000–144 999 (figure 2), compared to \$92 654 for the county as a whole (census.gov 2022).

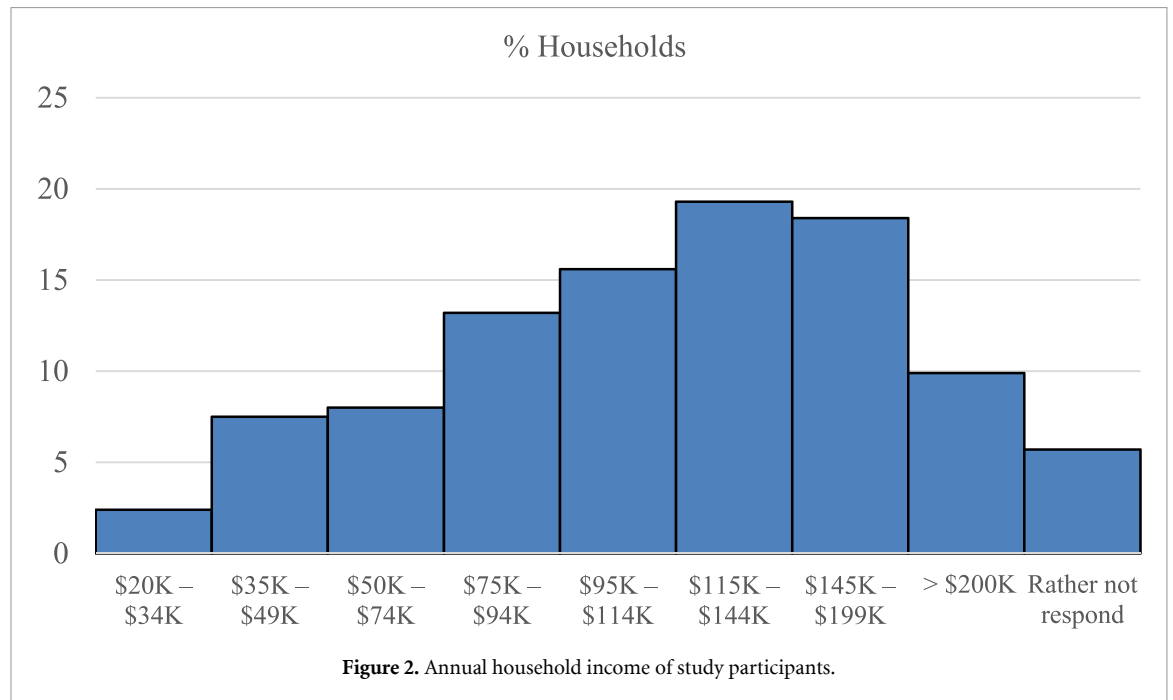
3.2. Data analysis

Six open-ended questions during the 19 month study prompted participants to reflect on the impacts of the pandemic on household consumption and other ways the pandemic impacted daily life, with more than 100 respondents offering responses to each question (table 3). Additionally, a self-initiated open-ended journaling feature in HomeTracker allowed participants to share written reflections on their experiences throughout the study. Since participants were neither prompted nor required to utilize the journal function, those who did so were self-motivated to share their perspectives; from March 2020 to August 2021, 101 participants wrote 164 journal entries. This qualitative data comprises people's reflections on their lived experiences and personal perceptions.

Using grounded theory (Charmaz 2014), we qualitatively analyzed data through several iterations of reading and identifying key quotations from both the open-ended responses and journal entries that were related to disrupted systems of provision. We identified quotations that described how households were able

Table 2. Composition of households participating in this study.

Variable	Sample	County-wide
% White	85%	81
% Female	71%	50
% with bachelor's degree	85%	45
% Democrat	50%	61
Median age of respondent in household (range standard deviation)	45 years	39
Median Income	\$115 000–144 999	\$92 654

**Table 3.** Open-ended survey questions. Quotes throughout text refer to participant ID—journal (P1-J) or participant ID—survey question response (P1-SQ1). Repeated questions are indicated with an asterisk and multiple date ranges.

#	Open ended survey questions	Number of respondents	Date
*Q1a	*New habits: Are there any new habits you have started under COVID-19 conditions that you enjoy or would choose to keep doing even after COVID-19 is no longer a risk? (e.g. ordering groceries on-line, working from home, etc)	124	August 2020
Q1b	*Repeated question	129	April/May 2021
Q2a	*Pandemic impacts: COVID-19 has changed lives in a number of ways, some positive and some negative. We are interested in your perceptions of any indirect outcomes from the COVID-19 pandemic on your household. Please feel free to elaborate on categories including health, environmental impacts, financial impacts, etc.	104	September 2020
Q2b	*Repeated question	128	April/May 2021
Q3	Is there anything you would like to tell us regarding your household's experiences with working or taking classes from home during the pandemic?	105	May 2021
Q4	What behaviors, habits, or material items, if any, would you say have helped you and your household through the past year of pandemic conditions? In what ways have they helped?	150	

to adapt and maintain wellbeing through changing social practices in the form of new materials, methods, and competences. References to meanings, materials, and competences, that comprised new and emerging social practices were identified through reading of the full corpus of open-ended questions and journal

entries by multiple researchers; these passages were coded in Excel according to relevant provisioning systems. (Nature, media, and social connections were initially also identified as important provisioning systems and will be addressed in future analysis.) In analyzing the data to look for indications of adaptation, we came across references to multiple forms of capital, particularly relating to time, money, and COVID-19 risk factors. While we initially analyzed the data to look for adaptation, we encountered forms of capital as key factors in determining how households were able to interact with shifting systems of provision. To provide broader context for these reflections, we also analyzed the quantitative survey data to assess the numbers of respondents participating in specific emerging social practices related to work, school, food procurement during the pandemic, as well as COVID-19 prevention practices.

4. Results

In this section we examine the forms of capital available to and used by households (captured through the responses of individual participants, who were asked to represent their household) as they responded to rapidly shifting systems of provision. We explore household responses and adaptations to disruptions of each of the following systems that are essential in the provisioning of household wellbeing—occupation, school, food, and health—for the 19 month period spanning February 2020 to August 2021. We consider how participants describe their adaptations through new meanings, materials, and competences, and how developing new social practices was tied to various forms of capital—invoked as a way to capture privilege and inequity in many forms—that were accessible to households. Each results subsection includes a table utilizing the analytical tool introduced in section 2, summarizing disruptions relevant to the system of provision that is the focus of that subsection, as well as adaptations in the form of shifts in social practice at both the *actor* and *structure* levels, and relevant forms of household capital.

4.1. Occupational systems of provision: disruptions and adaptations

One of the most dramatic early impacts of the COVID-19 pandemic was the mandatory confinement of everyone except essential workers to their homes, fundamentally altering daily routines amid profound uncertainty about the severity and duration of the outbreak. At the structural level, shelter-in-place orders were instituted in Illinois from 21 March 2020 to 29 May 2020. In April 2020, study participants from 133 households reported having 16 household members who lost their jobs and 22 who were working less hours. As additional waves of infection spread across the U.S. in the summer and fall of 2020 and again in 2021, disruptions to occupational systems of provision continued to reverberate. Job stability and job flexibility represented vital means for households to adapt in the face of sudden and prolonged upheaval, ensuring continued access to economic capital that served as a buffer against further shocks. As one participant recounted, *‘Being able to work and keep our daughter in daycare [after reopening] has kept our life fairly constant’* (P188-SQ4).

Shifts in social practices related to disruptions to occupational provisioning systems, adaptations at the actor and structure levels, and the forms of capital linked to these adaptations are summarized in table 4. Improvisations in social practice resulting from disruptions to occupational systems can also impact back on occupational systems in a cyclic process. Among the most transformative and disruptive of these shifts was the suddenly widespread practice of working from home. Initially forced to permit remote work arrangements under lockdown conditions, many employers elected to expand telework policies as disruptions persisted. From the actor perspective (see figure 1), individuals who were able to work from home possessed economic and temporal capital (freedom over time without economic stress); the term ‘essential worker’ came quickly to denote individuals working within systems of provision where such arrangements were not possible. Within our sample, 44 individuals across 164 households worked from home prior to the pandemic, while as of May 2021, 261 individuals across the same households worked from home at some point since the pandemic began, and 87% of households had at least one member working from home at some point since March 2020.

Working from home as a sudden new widespread social practice involved shifting materials (what), meanings (why), and competences (how) that helped those households adapt and maintain wellbeing. This new practice increased reliance on existing infrastructures for energy, water, sanitation, and communication and often required new objects (materials, which additionally required economic capital). The internet was noted as one specific material that helped households through pandemic conditions: *‘high speed broadband giving us more access to education and work’* (P284-SQ4), as were laptops *‘My MacBook (laptop) has been indispensable!’* (P226-SQ4) and office furnishings: *‘We got a new desk chair after realizing ours was not comfortable after about an hour or two of sitting in it, along with a few office organization items’* (P226-SQ4).

In addition, resilience came in the form of being able to draw upon existing competences: *‘Being more tech-savvy than the average adult has helped me to adjust to new ways of working and communicating’*

Table 4. Disruption to occupational provisioning systems, changes in social practices on the actor-structure continuum, relevant forms of capital and their role in maintaining household wellbeing.

Disrupted system	Changes in social practices along actor-structure continuum	Form of capital: role in household wellbeing
Occupational/Economic (Provisions Livelihoods) Suspension of in-person work	<p>Shifting Social Practices:</p> <ul style="list-style-type: none"> -Working from home -Widespread layoffs -Government responses: Pandemic impact payments; eviction prevention policies; unemployment benefits extended <p>Actor-Level Changes</p> <p><i>Materials:</i> Digital tools, Broadband at home, Home office furnishings & supplies</p> <p><i>Meanings:</i> Importance of work in relation to other things; Coping with unemployment, financial uncertainty</p> <p><i>Competences</i></p> <p>How to use online learning tools</p>	<p><i>Economic:</i> Economic security to withstand additional disruption</p> <p><i>Temporal:</i> Permitted a slower pace of life; time for other activities or childcare, overseeing at home learning</p> <p><i>Institutional:</i> Facilitates transition to working from home</p>
	<p>Structure-Level Changes</p> <p><i>Materials:</i> ICT infrastructure</p> <p><i>Meanings:</i> Changing narratives around work</p> <ul style="list-style-type: none"> -Importance of halting further spread of COVID-19 <p><i>Competences:</i></p> <ul style="list-style-type: none"> -Pivot to remote work; use of online meeting platforms 	

(P263-SQ4). For some, the practice of working from home also provided gains in temporal and economic capital as well as changed meanings associated with daily life:

Honestly, I am enjoying this time. I get to stay at home with my son (husband went back to work a week ago), be comfortable, be relaxed, and be well rested. I still am getting paid, I am saving money because my son isn't at daycare, and I will still get the stimulus check! I am very excited to have some extra money, and to soon buy some new glasses that are not scratched! Maybe when this is all over, we will actually go on a real family vacation (P137-J, 4/19/20).

Many people who could not shift to working at home grappled with sudden unemployment and immediate loss of economic capital: 'My wife lost her job due to the pandemic (budget cuts)' (P494-SQ2a). For households in this position, access to materials was immediately constrained and budgeting became a necessary competence: 'Since I lost 1 of my 2 jobs we did not spend as freely as pre-covid and I very much looked at budgeting food, clothes...during that time we very much cut spending on entertainment outside the house, food and beverage consumption. When one job started up we eased up on budget a little' (P522-SQ4).

For those who lost their jobs during the pandemic, losing economic capital amid other sweeping disruptions posed significant challenges, with profound impacts for overall wellbeing:

Financially, this is so difficult. My husband has not had his extra part time job and I have depleted almost all of my savings making sure we do not lose our house. This disease has put an emotional burden on so many that is not always obvious to the outside observer. Too many people, including myself, keep challenges all bottled up. I hope our times get back to a greater sense of normal. I honestly don't know how much more I can take (P257-J, 5/2/21).

As the pandemic progressed, individuals also had to grapple with the personal risk of getting COVID-19; people in higher risk categories due to age or medical conditions can be seen in these circumstances as having less embodied capital. For one participant, these tradeoffs resulted in the decision to leave employment without alternate plans (another emerging pandemic-related social practice):

I left my full-time job in April. The educational program was going back in-person and I just didn't feel safe with the COVID precautions they had in place. I was only able to get my first shot the Friday before the Monday that classes started. I was declined for unemployment because I left my job voluntarily. I'm now struggling to live off the small amount of savings I had and some maintenance and child support. I have had success in finding jobs to apply for and have 3 interviews this week so I'm hopeful I can find something soon (P106-J, 5/10/21).

Challenges were compounded for households with school-aged children, illustrating the hurdles the pandemic posed for many due to the simultaneous disruptions of multiple systems of provision: 'The largest impacts to our home are financial and emotional. My husband and I both were unemployed during Covid...Emotional because of the economy and the children for lack of school and structure' (P471-SQ2b).

One of the most salient factors in the ability of households to maintain wellbeing amid disruptions to occupational systems of provision was continued and flexible employment, ensuring access to economic capital as well as temporal capital needed to provide childcare and oversee learning amid the suspension of in-person schooling. For some, working from home also brought increases in temporal and economic capital due to less spending coupled with government stimulus payments, further boosting resilience (*'Honestly I am enjoying this time'* (P137-J, 4/19/20)). Conversely, for those who lost their jobs and/or experienced a decrease in income, the loss of economic capital intensified the struggle to meet additional challenges as other provisioning systems were also simultaneously disrupted, bringing further emotional hardship as time went on *'I honestly do not know how much more I can take'* (P257-J, 5/2/21).

4.2. School as a system of provision: disruptions and adaptations

Children attending school and daycare were also confined to their homes beginning in March 2020, leading to an unprecedented disruption of in-person learning and an additional abrupt shift in daily routines for parents of school-aged children. This disruption to an important system of provision required rapid shifts in social practices. The most widespread response in the early days of the pandemic was to move classroom lessons online or to provide physical materials to be taken home, placing large burdens on both educators to pivot to remote teaching and on parents to oversee their child's learning at home, often while simultaneously engaging in remote work. Among all 164 households responding to this question, 43 people attended classes from home prior to the pandemic, while 203 individuals attended classes from home at some point during the pandemic, impacting 63% of households.

Shifts in social practices related to disruptions to schools as a provisioning system, adaptations at the actor and structure levels, and the forms of capital linked to these adaptations are summarized in table 5. As some schools reopened in the fall of 2020, teachers and families continued to face uncertainty amid rolling waves of the pandemic across the country. Against this backdrop, some measure of household resilience was provided by forms of capital that enabled some households to withstand multiple transitions and navigate uncertain or inconsistent COVID-19 risk, exposure, and (as will be further discussed in sections 4.4) societal messaging. Many study participants were both parents of young children and teachers. As one parent-teacher writes, working from home became a source of stress after her husband returned to on-site work, reflecting a loss of temporal capital for her household, and necessitating a highly choreographed daily schedule with many competing demands:

My only source of stress is work. I am working from home with a three-year-old. Everything was easy when my husband was home for two weeks, but then he was called back into work. With just the three-year-old and I, I am supposed to be available to parents between 9am–12pm. We stay at home, and if I hear my email or ClassDojo ping, I have to check it. Making phone calls and doing video chats with students is hard, as I put my son in front of the TV. He feels neglected, and I feel bad for his hurt feelings. During nap time (1:30–4pm), I do the work emails, the tracking of student work and offering feedback, and the communication with my partner teacher, and when needed, the math/reading specialists and principal. My husband doesn't arrive home until 5:45pm. After our son's bedtime at 8pm, I get back on the work computer. I lesson-plan, post the assignments on my website for the following day, and tidy up loose ends to make the next morning easier to balance work/son. Many times, I don't have free time until 10pm or later (P137-J 4/19/20).

This response illustrates new competences and materials needed by teachers and parents to adapt to remote schooling, including the use of software applications to enable teachers to assign classwork and send messages directly to families. Access to childcare systems of provision, when they reopened, provided additional temporal capital, but also required access to economic capital: *'The only way I have been able to feel successful at my job is due to the fact that my son is in daycare. This is a lifeline. And really, he is so happy to be with his friends and be in school'* (P137-J 1/18/21). At the same time, the pandemic placed an additional emotional burden on the adjustment process, requiring new social practices in the form of extra safety protocols:

It took some time to relax, TRUST, and adjust to the daycare routine, but so far, everything has gone smoothly. He has seven kids in his class, they all wear masks, and each student has their own supplies. After they play with the toys, the toys are sanitized. Are they always six feet away from each other? No. But otherwise, the daycare is very safe with everything, to the point of paranoia that one of us families might infect us all (P137-J 1/18/21).

This example also illustrates that all three components of the social practices involved in sending children to school involve *both* individual households *and* collective systems of provision: materials, in the form of individual masks for each child; competences in the form of sanitizing shared spaces; and meanings in the

Table 5. Disruptions to school provisioning systems: changes in social practices on the actor-structure continuum, relevant forms of capital and their role in maintaining household wellbeing.

Disruption to system	Changes in social practices along actor-structure continuum	Form of capital: role in household wellbeing
School (Provisioning Education) Suspension of in-person schooling	<p>Shifting Social Practices:</p> <ul style="list-style-type: none"> -Online classes; learning from home -Return to classroom amid successive pandemic waves -Mask-wearing in schools <p>Actor Level Changes</p> <ul style="list-style-type: none"> Parents had to manage children's learning environment <p>Materials:</p> <ul style="list-style-type: none"> Class Dojo, Internet access <p>Meanings:</p> <ul style="list-style-type: none"> -Parental concern over children's mental health <p>Competences</p> <ul style="list-style-type: none"> -Parental supervision of learning -Use of tech for communication 	<p>Structure Level Changes</p> <ul style="list-style-type: none"> Pivot to online classes <p>Materials: ICT infrastructure</p> <p>Meanings:</p> <ul style="list-style-type: none"> Loss of social learning environment <p>Competences: How quickly school district was able to pivot to online teaching</p> <p>Temporal: Parents had to remain home with children if schools did not reopen</p> <p>Economic: Ability to switch to private school</p> <p>Social: do not want to be responsible for infecting others</p> <p>Embodied: Some children at greater risk if exposed to COVID</p> <p>Institutional: Which schools were better able to adapt</p>

form of trust that these new protocols would be implemented by the daycare provider and effective in preventing COVID.

Concerns were also widespread over the impact of these sudden and unprecedented changes on educational outcomes 'The kids have all stayed at home during pandemic from school, which is clearly affecting their education development' (P494-SQ2b). For many young people and their families, disruptions to schooling have also taken a severe toll on mental health. In September 2020, participants were asked to consider indirect outcomes of the pandemic on households (SQ2a). In response, many parents shared that school disruptions were contributing to worsening mental health for themselves and their children: 'Mental health issues have increased with the stress of our jobs in dealing with COVID-19 (we work in schools), also mental health issues increased with our children in not having the option of going to school and doing it all online' (P245-SQ2a). One parent wondered whether the restrictions were ultimately doing more harm than good for children:

I understand and approve of the distancing measures required for personal and public safety as a whole, but feel, particularly my teenage kids, are disproportionately suffering socially and mentally -maybe more harm than the potential risk of COVID to their physical health (P282-SQ2a).

Access to temporal and economic capital provided a buffer to families unwilling to risk exposing their children to COVID, as illustrated by this parent-teacher:

This pandemic is so hard on everyone. I have been working so hard and I feel like I am making no progress. I am a teacher and I have selected to keep my children remote. I just don't feel like the schools have a handle on this. As much as I know and realize it is easier and better to teach in the classroom, I want everyone to be safe. (P257-J, 18 October 2020).

For some households, having children at higher medical risk (in other words, having less embodied capital) presented additional challenges. One parent recounts that her son's allergies (less embodied capital) complicated his return to school: 'Allergies that my son has always suffered have now made him unable to attend in person school because teachers are afraid he has covid' (P61-SQ2b). Another adaptation, recounted by this participant, illustrates the resilience afforded by access to economic and cultural capital that enabled her to switch her daughter from a local public school to a private Catholic school seven months into the pandemic:

The public school had her learning from home with a tablet from 10AM - 3PM with only one 15 min break and a 30 min lunch break. This was absolutely not going to work for our super social kindergartener. We switched into the private Catholic school in October, which had all students in-person full time with very serious precautions. We are done with the school year next week and never had a single case of COVID in the kindergarten. Pretty fantastic AND she's thriving (P404-SQ3).

While some families were more readily able to draw on economic, temporal, institutional, and embodied capital as they navigated disruptions to schooling as a system of provision, others were not. The

Table 6. Disruptions to food systems of provision: changes in social practices on the actor-structure continuum, relevant forms of capital and their role in maintaining household wellbeing.

Disruption to system	Changes in social practices along actor-structure continuum	Form of capital: role in household wellbeing
Food Supply chain disruptions Safe procurement of food	<p>Shifting Social Practices:</p> <ul style="list-style-type: none"> -Shopping for others -Shopping at less busy hours -Going to the store less frequently -Change in eating habits <p>Actor Level Changes</p> <p><i>Materials</i></p> <ul style="list-style-type: none"> -Change in types of food purchased -Digital tools for online shopping -Seeds, gardening tools -Masks <p><i>Competences</i></p> <ul style="list-style-type: none"> -Ordering online -Self provisioning -Cooking at home <p><i>Meanings</i></p> <ul style="list-style-type: none"> -Protecting vulnerable populations -Minimizing risk -Minimizing dependence on external supply chains for food 	<p><i>Economic:</i> Ability to buy food even if prices rise</p> <p><i>Temporal:</i> Easier to shift times of purchase; travel to less busy stores even if prices are higher</p> <p><i>Embodied:</i> Less risk of life-threatening case if infected</p> <p><i>Social:</i> shopping for others/helping others order online; having others help with food purchasing</p>
	<p>Structure Level Changes</p> <p><i>Materials</i></p> <ul style="list-style-type: none"> Mask production Food distribution centers <p><i>Competences</i></p> <ul style="list-style-type: none"> Cleaning and disinfecting stores Offering curbside pickup <p><i>Meanings (Rules)</i></p> <ul style="list-style-type: none"> -Minimizing risk for at-risk customers and essential workers -Requiring masks in stores - Special hours for senior shoppers 	

differentiated ways that households navigated these disruptions were based on multiple forms of privilege and relations of inequity, which shaped how households responded to changes in access to infrastructures in ways that directly impacted household and individual wellbeing.

4.3. Food systems of provision: disruptions and adaptations

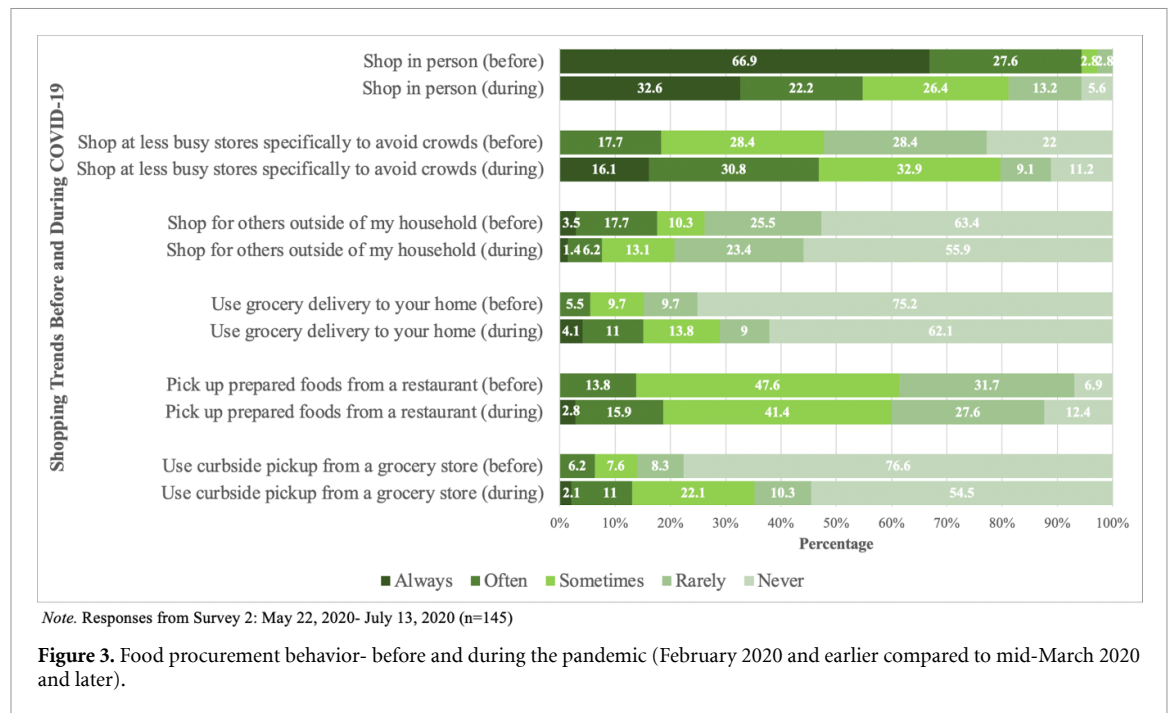
While infrastructures for energy and water provisioning extend directly into homes, food procurement requires replenishment via repeated visits to external sites, special arrangements for ongoing delivery, and/or self-provisioning. Under pandemic conditions, shopping in person added exposure risk to uncertainties about food supply chains, resulting in changes to established social practices for both households and the systems they accessed. Prior to the pandemic, 67% of households in this study reported 'always' shopping in person, compared to 33% in June 2020.

Shifts in social practices related to disruptions of food provisioning systems, adaptations at the actor and structure levels, and the forms of capital linked to these adaptations are summarized in table 6. Adaptations included shopping at less busy stores, shopping for others outside one's household, picking up prepared foods from restaurants, and using grocery delivery services or curbside pickup (figure 3).

Changing food procurement social practices, comprised of shifting materials (e.g. sanitizing products, shelf-stable foods), meanings (e.g. minimizing risk), and competences (e.g. ordering groceries online) were easier for households with more economic, temporal, social, and embodied capital, contributing to their overall resilience. In June 2020, 3 of 120 respondents reported not having enough money to feed their families three meals a day. One participant described an unmet need for food among families of school-aged children that was temporarily met through free food distribution centers in the early months of the pandemic: 'I wish they would continue the food distribution. There are some people who are struggling who do not qualify for free lunch. I have enjoyed picking up the lunches and using them to add to our family's meal plans' (P164-J, 7/29/21).

Among those with the economic capital to buy food without sacrificing other necessities, disruptions to food supplies and fear over food shortages were still a source of shared anxiety, as described by this participant:

It feels like our stress level is directly related to the amount of milk that we have in our refrigerator. Having food on our shelves is the one thing that makes it feel 'normal.' However, when we start to see the shelves get bare and the amount of milk decreases, it raises the tension in our household. We've ordered groceries online but we have very little control over this process—items get substituted, items are unavailable, we forget to add an item and we can't change our order, delivery windows open/close in the blink of an eye. All of this creates a lack of control in our lives. Once our grocery



order is delivered, it is high stress to wipe everything down. Then, once the items are tucked into the pantry or put in the fridge/freezer, we breathe a sigh of relief and life feels ‘normal’ for a while (P18-J).

In addition to shopping, self-provisioning of food represented another adaptation addressing the uncertainty surrounding food supply chains; this adaptation was available to households that possessed temporal capital and forms of capital associated with ownership of and/or access to available land and water (economic and cultural capital to own or access, embodied capital to know what to do with it). In June 2021 one participant describes a renewed focus both on gardening and cooking, effectively capturing the materials (‘kitchen toys’), competences (‘working on turning my property into more native plants or food plants and fewer plants that need intensive watering or maintenance’), and meanings (‘I want to return to cooking for myself’) involved in these practices; an awareness of the loss of temporal capital as schools reopened was also conveyed (spending ‘way too much time’ at work as things opened up and ‘falling back into old patterns of getting fast food without the time to cook’).

In July 2021, 8% of respondents reported cultivating a vegetable garden for the first time at home during the pandemic, 45% reported continuing to grow vegetables at home, and 47% did not engage in this practice (N = 154). For those with access to the necessary forms of capital, gardening and other new practices around food provisioning also provided experiential learning opportunities for children: ‘We purchased chicks and have begun raising chickens. Because of that we have also begun composting as a method of recycling the chicken’s waste. Good hands-on learning for the children’ (P152-SQ7). Others reported securing meat through local producers and deer hunting:

At the start of the year, our family purchased 1/2 a cow/beef from a local farmer that we have frozen in our freezer. That alleviates some of our weekly food costs as well. My husband also goes deer hunting and we have a supply of venison in our freezer as well. The only meat we have to buy is chicken or pork (P309-J).

Thus, while some participants relied on existing practices over time that contributed to their ability to have food regardless of the status of the supply chain, others shifted their practices as a result of COVID-19, drawing on temporal, social, and embodied capital to learn new competences and reflecting shifting meanings around the importance of self-provisioning.

4.4. Health systems of provision: disruptions and adaptations

Health systems of provision were definitively disrupted by the pandemic, with providers pivoting to tele-health services, temporarily halting routine procedures, and focusing on the treatment of COVID patients, and public health professionals focusing on developing and communicating protocols to slow disease spread (‘flattening the curve’). New social practices for COVID prevention involved new materials

Table 7. Disruptions to health systems of provision: changes in social practices on the actor-structure continuum, relevant forms of capital and their role in maintaining household wellbeing.

Disruption to system	Changes in social practices along actor-structure continuum	Form of capital: role in household wellbeing
<p>Public Health/Medicine (Provisions survival/health) In-person treatment of other illnesses suspended Focus on the treatment of COVID patients</p>	<p>Shifting Social Practices: -E-health services; deferral of routine healthcare -COVID-19 prevention (social distancing, vaccination; mask wearing) Actor Level Changes <i>Materials</i> -Masks/materials for mask-making -Vaccines <i>Meanings:</i> -Vaccines necessary to protect oneself, others, curb spread & return to normal vs. vaccines untested, dangerous, and coercive -Whether/when to wear masks; which types to use <i>Competences:</i> -Accessing vaccines and treatment options -Making cloth masks -Proper mask-wearing -Knowledge of public health guidelines/ rationale -Social distancing</p>	<p><i>Social:</i> Connections to health/medical personnel to help interpret guidelines <i>Institutional:</i> Interpretation of new guidelines <i>Temporal:</i> Time to learn about pandemic, changing conditions <i>Embodied:</i> More or less at-risk for COVID depending on health, age</p>
	<p>Structure Level Changes <i>Materials:</i> Air filtration systems Ventilators, Masks <i>Meanings:</i> -Development of COVID prevention protocols -Policy support for (or opposition to) public health guidelines -Increased risks and demands placed on healthcare workers <i>Competences:</i> -Public outreach/communication -Vaccine development and distribution -Care of COVID patients</p>	

(masks, sanitizing products, vaccines), competences (proper mask wearing and handwashing, getting vaccinated), and meanings (the danger represented by the virus, limits on crowd sizes, social distancing, the importance of getting vaccinated) at both the actor level (following guidelines, individual storytelling) and structure levels (developing rules and policies, distributing vaccines). In Illinois, masking was mandatory from 23 April 2020 to 18 May 2021 when the mandate was lifted for vaccinated individuals. The statewide mask mandate was lifted for everyone on 11 June 2021 and again reinstated (for all) from 30 August 2021 to 28 February 2022.

Shifts in social practices related to disruptions to health/medical systems of provision, adaptations at the actor and structure levels, and the forms of capital linked to these adaptations are summarized in table 7. As the pandemic progressed, meanings surrounding COVID prevention practices became increasingly contested, reflecting larger social and political divisions in the U.S. that manifested in debates over appropriate structure-level adaptations, particularly in the form of public policies to support official guidelines from the public health sector (Haischer et al 2020, Kahane 2021). How households responded to these shifting conditions were influenced by embodied, social, and institutional capital. Embodied capital included assessing risk based on individual health factors; the ability to share the burden with others and minimize risk was a form of social capital. Institutional capital, in the form of both education and knowledge about medical and healthcare practices as well as affiliation with religious institutions, also affected individual narratives around adopting COVID prevention practices. One participant, demonstrating institutional capital that aligned with official guidelines, describes meanings contained within new practices in this way: ‘It has made me more cautious when it comes to contact with others, seeing the need for extra hygienic habits like hand washing after touching things coming into my house, disinfecting more regularly and washing or wiping all grocery items (P21-SQ2b).’ Another participant recounts the stress of dealing with individuals having opposing views: ‘I am saddened that so many people treat this as if it is not a problem, we take it seriously in our home and I find it stressful to talk with people who are skeptical of what health experts report’ (P301-SQ2b).

Participants also described complex interactions between various forms of capital, resulting in tension between protecting those with less embodied capital (at higher COVID risk) and socializing with people not following COVID guidelines. One household referred to the stress of ‘Recognizing certain family members who do not take COVID seriously. Feeling sad about being forced to stay away from those family members in

order to keep my children safe' (P149-SQ2b). Some people at high risk did not adopt best practices set by the public health system. One participant expresses both concern for her elderly parents and anger at religious organizations for disregarding public health guidelines:

I am DISGUSTED by the pastor at my parents' church and by the Catholic faith. I wrote to the pastor about how they are having in-person services and are administering the Eucharist into the mouths of the parishioners. I provided several other options as suggestions. The pastor wrote back to me that 'he prayed about it' and this is how he saw fit to 'protect his flock.' Seriously.. my parents are NOT SHEEP. They are entrusting their lives to him and he is holding services in person and inside when it rains. The people are using the same microphone, same towel to wipe fingers off, and so many more unsafe COVID things in that service (watched it online when it was posted). One member of their choir died of COVID and that hasn't stopped them. And, the Catholic institution right now is not heeding the warnings of the top Catholic person (THE POPE). WEAR A MASK!!!!!! How can people be so ignorant (P70-J 30 August 2020).

As this passage demonstrates, the meanings associated with emerging social practices for COVID prevention often became interlinked with already polarized ideological affiliations, generating feelings of anger towards those with opposing views. In this case, the trust and authority placed in public health experts were weakened by the example set by some religious leaders. As the collective narrative around appropriate health and safety practices splintered along ideological and political lines in the summer and fall of 2020, some local and state authorities established rules contradicting the guidelines of public health agencies. Such splintering can be seen to hinder both household and societal resilience to the pandemic, as illustrated by the experiences of this participant:

I was diagnosed with COVID in late July. Luckily, my family appeared un-impacted (husband was negative and the kids had no symptoms so were not tested). The infection was spread to family in another state, one individual being a relative with a double lung transplant. He is still being hospitalized after having to relearn how to eat and talk. But, he survived. Unfortunately that means the cross-country relatives and locals who were infected take it less seriously. Not masking, attending packed political rallies in WI, even though the numbers are peaked.. this election, coupled with COVID, is absolutely exhausting. I consider myself middle of the road but this election has made me so much more aware of the character of people. People I once considered trustworthy and caring I no longer do. I'm never not shocked when I find out people's political affiliations. My heart hits my throat every time I see a Trump sign (P264-J, 18 October 2020).

The above passage also underscores the weakening of trust and authority placed in public health experts by elected officials who encouraged attendance at 'packed political rallies,' as well as the anxiety that accompanied efforts to process these dissonant meanings, for those whose individual narratives aligned with public health guidelines (reflecting their institutional and social capital).

In the spring and summer of 2021, COVID vaccination emerged as another significant new social practice unfolding at both the actor and structure levels. Here too, contested meanings were evident among participants, representing the pervasive challenge faced by the health system of provision in attaining widespread vaccination, a key adaptation at the structure level to overcome the pandemic. As some organizations, employers, and local governments began to require proof of vaccination to dine indoors or visit gyms to prevent further disease spread, alternative meanings were promoted by some ideological groups. Individual decisions about vaccination involved multiple forms of capital, including social, embodied, institutional and temporal capital; since vaccines were administered free of charge in the U.S., economic capital alone is less salient. As one participant recounts: 'My father tested positive for COVID and has been in and out of the hospital for 6 months. He is convinced that the vaccine has a tracker in it so the government can monitor people's movements and refuses to get the vaccine and we have fought with him repeatedly about the reality of the virus' (P85-SQ2b). Again, divergent views about what constituted COVID-safe practices appear among participants, reflecting a nuanced interplay between embodied, social, and institutional capitals, which sometimes contributed to tensions within families: 'We have not been sick at all- no flu, no strep, no common cold. My elderly vulnerable parents think COVID is no big deal and are refusing to social distance and/or get the vaccine. This is MADDENING' (P61-SQ2b).

As the pandemic unfolded, the meanings involved in social practices surrounding COVID prevention emerged as a point of contention at both the actor and structure levels. Such splintering can be seen to hinder both household and societal resilience to the pandemic. At the structure level, this contention occurred when public policies, or the actions of elected officials, failed to support public health protocols. At the actor level, there were marked differences in how households adapted to disruptions in the health system of provision, evident in their willingness (or not) to follow public health guidelines for COVID prevention

and directly related to the emerging, contested meanings they associated with these new social practices. These meanings in turn were profoundly influenced by the social, embodied, institutional, and temporal capital associated with particular households.

5. Discussion: adaptation and resilience through shifting social practices: who is able to access disrupted systems of provision via their forms of capital

In this paper we develop and apply a new conceptual framing to assess social practices, merging the concepts of systems of provision (Spaargaren *et al* 2006, Fine *et al* 2018) and the three-element model of materials, meanings, and competences (Shove *et al* 2012). Our research sheds light on the relationship between infrastructures—framed as systems of provision—and the social practices that emerged as adaptations to the sudden and prolonged disruption resulting from the COVID-19 crisis, as households struggled to maintain wellbeing in the midst of widespread uncertainty. We examine how social practices rapidly shifted in response to disruptions of occupational systems (provisioning livelihoods), schools (provisioning education), food provisioning systems, and health systems, which took on heightened significance as they were tasked with slowing disease spread, developing prevention protocols, and treating COVID patients.

We draw on the conceptualization of social practices as products of the interdependent relationships among *materials*, *competences*, and *meanings* (Shove *et al* 2012), but explicitly analyze these interactions at both the actor and structure levels, as articulated by Spaargaren (Spaargaren 2003, Spaargaren *et al* 2006, 2011). These new practices involved *both* system-level rules and individual storytelling (meaning), infrastructures and objects of daily life (materials), and new system-wide and individual competences. In this context, adaptations can be seen as responses to system perturbations such as the pandemic. These responses can also be maladaptive: they are not necessarily effective nor do they necessarily ensure continued functioning. Examples of maladaptive responses at the individual level include increased snacking (Anderson 2021) and alcohol use (Zvolensky *et al* 2020), and examples at the structural level include the politicization of proven COVID-19 prevention practices (Kiviniemi *et al* 2022), including rules about mask-wearing, social distancing (Rothgerber *et al* 2020) and vaccination (Bolsen and Palm 2022).

We further apply the concept of forms of capital to social practice theory, providing an analytical tool to help capture the highly stratified and inequitable *who* involved in specific practices, offering a means to address longstanding structural inequities as they are perpetuated in social practice. The Bourdieuan conceptualization of forms of capital provides a toolkit for (1) understanding how households were able to adapt and respond to disruptions in systems of provision through engaging (or not) in shifting social practices and (2) tracing the privilege, or lack thereof, associated with particular households in accessing these systems. The ways households were able to adopt new social practices to adapt and maintain wellbeing in the face of widespread disruption was shaped by the forms of capital (economic, social, temporal, institutional, and embodied) to which they had access. While resilience can emerge from privileged access to multiple systems of provision, lack of access to more than one form of capital can create emergent vulnerabilities in the face of widespread infrastructural disruptions, impacting the ability of households to navigate new social practices in ways that maintain wellbeing (Hamel and Salganicoff 2020, Wright II and Merritt 2020).

This paper makes two substantive contributions. First, we reconcile across two perspectives within the social practices literature (materials, meanings, and competences vs. lifestyles/systems of provision), showing how they are connected, and use this reconciliation to illustrate a gap in current social practice theory. Second, we address this gap by repositioning the concept of lifestyle to consider instead how various forms of capital play a pivotal role in social practice. Privilege and inequity shape every facet of life in the US, including how households were able to respond (or not) to disruptions in systems of provision. As we argue, conceptualizing privilege in terms of forms of capital provides a bridge between the exploitation and oppression experienced by individuals and households to the systems of provision that those individuals rely on to maintain their wellbeing in the face of crises (in other words, their resilience). The analytical tool we develop offers the potential to provide researchers and practitioners with a sharper lens to engage with and confront structural inequities in human and physical infrastructures. At the same time, however, reducing the complexity of individual and household characteristics within dynamic communities as they engage simultaneously with multiple systems of provision to forms of capital risks profound oversimplification. Moreover, reducing and equating these intangibles with forms of capital, financial or otherwise, that can be used or converted in market-like conditions is a metaphor with inherent limitations.

It is also important to note that, because our sample was not designed to be representative of the regional population, the outcome provides a less than representative account of household adaptations to shifting social practices. This sample skewed toward higher levels of income and education, and thus many systems of provision/social practice tensions we might otherwise expect to see are overlooked in these findings. Even

among our relatively homogeneous sample, however, there were some stark differences: those able to work remotely maintained economic capital and added temporal capital (and in some cases economic capital from federal pandemic payments and reduced spending), while many others lost their jobs, thereby jeopardizing access to essential systems of provision that were in some cases not designed to address their needs in the first place. Similarly, while those with economic and temporal capital were able keep their children home or send them to private schools, many parents grappled with the demands of simultaneously working from home and overseeing their children's learning and, later, the fear of COVID-19 exposure as their unvaccinated children attended school in-person. Economic and temporal capital were also important in navigating new challenges associated with food procurement; for those with less embodied capital (high risk and/or less competence with digital tools), social capital facilitated the shifting social practice of having others assist with food shopping. Institutional, embodied, and social capital were important in being able to navigate changes in healthcare provisioning and accessing vaccines once they were available.

At the same time, sharply diverging responses to emerging social practices related to COVID-19 prevention were evident, reflecting an increasingly fractured nationwide discourse that became even more politicized in the summer and fall of 2020 as the pandemic continued to disrupt essential systems of provision. The political fracturing at the structural level in the U.S. over the meanings associated with the suite of emerging social practices related to COVID prevention (alluded to in the household narratives in section 4.4) are both a reflection and a reinforcement of ideological divides. Such deepening divisions reflect contested meanings around newly emerging routine behaviors such as mask wearing and vaccination. These divisions are also evident in the lack of comprehensive support for national policies needed to address structural inequities across multiple systems of provision that in turn have placed a disproportionate burden on those without the forms of capital needed to maintain household wellbeing during the pandemic. Resistance to prescribed COVID prevention measures among ideological conservatives are aligned with resistance to the importance of investing in human infrastructure generally. The \$1.2 trillion Bipartisan Infrastructure Law, with investments in transportation, energy infrastructure, and broadband, was narrowly passed in the House of Representatives and signed into law by President Biden on November 15, 2021, after additional measures specifically dealing with human infrastructure were cut from the bill. The Build Back Better Bill, addressing education, childcare, housing, health subsidies, and climate change, was halted in the narrowly-divided U.S. Senate in December 2021. In early August 2022, a modified version of the bill, the Inflation Reduction Act, addressing healthcare, climate change, and deficit reduction, was passed in the Senate. The difficulty in the bill's passage illustrates the structural challenges in addressing persistent inequities across systems of provision. Compounding these difficulties, economic incentives alone are inadequate to address the range of hurdles faced by many households without the multiple forms of capital needed to benefit from infrastructure investments, requiring even more targeted policies (Caggiano 2021).

6. Conclusion

Theories of social practice claim that interaction with systems of provision are fundamental to understanding human consumption behaviors. In this study, we advance theories of social practice by providing a novel analytical tool to address *who* is recruited to new practices in response to infrastructural disruptions in ways that maintain household wellbeing using the concept of forms of capital. This allows issues of inequity in accessing systems of provision to be explored with more depth and precision than permitted in other social practice models. Analyzing the role of inequity in adoption and adaptation of social practices (encompassing materials, meanings, and competences at both the actor and structure levels) is an innovative and important step for theories of social practice. The inequities in *who* is able to participate in which social practices have profound impacts on household wellbeing. Moreover, systems of provision, as infrastructural systems, spanning both human and physical infrastructures, are often quite durable. Such structures are perhaps best understood as nouns, and not easily changed by individual action, but forms of capital are herein expressed as relational verbs because the latter are actively used in human interaction in ways that privilege some and disadvantage others.

Given this, we recognize that not all forms of capital can be translated in ways that allow for adaptation in response to disruptions in systems of provision. Racial and ethnic categories and ability status, as forms of embodied capital, are crucial areas for further investigation; no matter how much economic or institutional capital individuals have, they may not be able to compensate for deep structural or infrastructural bias. Using forms of capital and systems of provision as analytical tools, future research in social practice can examine when capital can be wielded by whom in ways that allow for adoption of new materials, meanings, and competencies, shaping how infrastructural disruptions can, and for many cannot yet, be navigated in ways that support household wellbeing.

Data availability statement

The data is held on the FEWCN website, which is currently being updated. The raw data supporting the conclusion of this article will be made available by the authors, without undue reservation.

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Ethics statement

This study was reviewed and approved by the Institutional Review Boards at Michigan Technological University and Rutgers University. Each survey instrument was additionally reviewed by the IRB at Michigan Technological University.

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