Frugal innovation in the 1.5-metre society: analysis of the hospitality sector in the metropole region Rotterdam-The Hague[1]

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INTRODUCTION

A recent stream in urban studies deals with the impacts of COVID-19 on cities and urban strategies to cope with these impacts (e.g., Florida et al., 2020; Nathan & Overman, 2020). This study contributes to this stream by exploring the role of Frugal Innovation (FI) to overcome resource constraints during the so-called '1.5-metre-society'. That means the 'new normal life' with regulations to fight the virus, such as (semi-)lockdowns, keeping 1.5M distance rules and travel restrictions (Scherefs & Curfs, 2020). The 1.5-metre-society challenges the urban economy due to resource constraints, including shortages of products due to interrupted global supply chains; workforce absenteeism due to illness, and a loss of income for entrepreneurs caused by the closure of business (Gong et al., 2020). FI is an approach to overcome resource constraints by complexity reduction of goods, services and business models to offer more affordable services and products for a larger number of users (Leliveld and Knorringa, 2018). The approach, thus, creates new opportunities out of resource constraints, which is why it seems a useful lens for studying how cities can overcome crises, such as the 1.5-metre-society. So far, FI has had limited attention in regional studies, with Busch (2021) and Van Tuijl et al. (2022) being major exceptions. Moreover, FI has been widely discussed as a solution to overcome health constraints (e.g., shortage of face masks) during the pandemic (e.g., Harris et al., 2020), but not in relation to constraints caused by the 1.5-metre-society.

[1] Cite as: van Tuijl, E., van den Berg, L., Dittrich, K., & Rossi-Doria, D. (2023). Frugal innovation in the 1.5-metre society: analysis of the hospitality sector in the metropole region Rotterdam-The Hague. In Kresl, P. & Bertin, M. (Eds.). *The Impact of COVID on Cities and Regions* (pp. 197-215). Edward Elgar Publishing.

This chapter takes on these research challenges by combining urban studies on competitiveness, resilience and the pandemic (e.g., Florida et al., 2020) with hospitality studies on strategic responses to the crisis (Breier et al., 2021) and FI literature (Bhatti et al., 2018) to explore the following analytical angles.

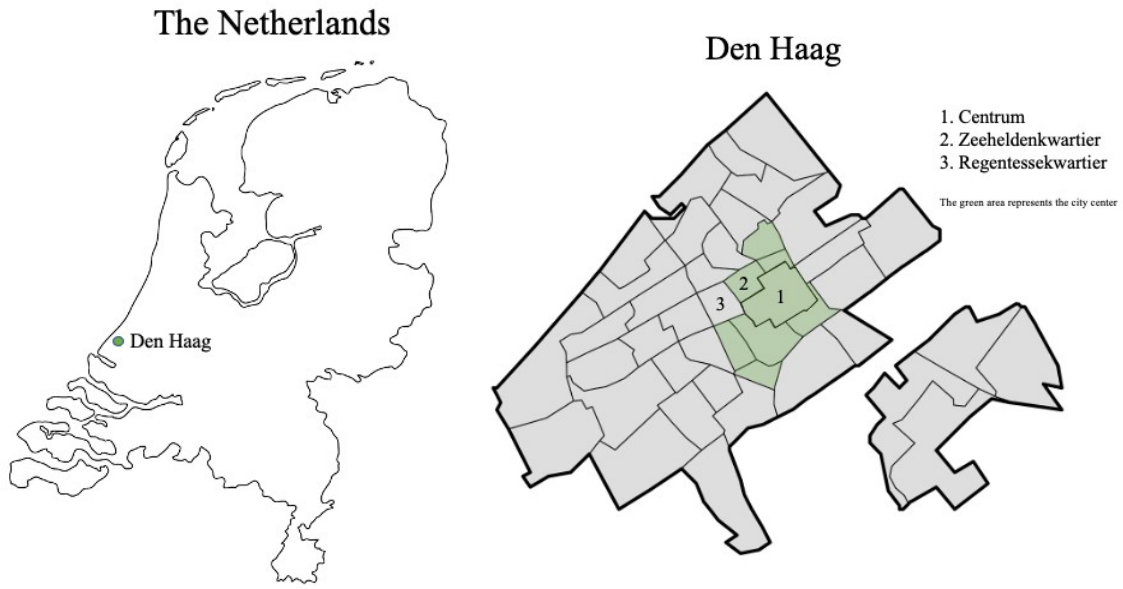
Finally, we investigate the role of cities by analysing urban policies and the interaction between restaurants and other urban actors. We also explore different neighbourhoods inside and outside central districts. This is done to provide first indications about possible changes in the role of central districts.

This chapter argues that FI is essential for restaurants to survive the 1.5-metre-society, and in some cases, it also leads to lasting changes in the post-1.5-metre-society. We also argue that cities play an essential role for restaurants to survive the crisis due to interaction with other urban actors (e.g., geographical proximity to loyal customers and other restaurants) and provision of public space as temporary terraces. The inner-city differs from other districts regarding constraints and solutions. It suffers more from time and space constraints (e.g., 'ghost town' and more control), has a smaller base of loyal customers, and is less suited for dine-at-home solutions. However, we do not expect structural changes from entrepreneurial and policy perspectives. Restaurants want to go back to the 'old normal life' and policies are mainly targeted to support restaurants to survive and not to transform the city.

We support our arguments with a case study on restaurants in the Dutch City of The Hague. We focus on local restaurants and exclude restaurants that are part of chains, and firms that have traditionally focused on delivery services, as these are better prepared for firm closures due to larger amounts of financial capital (Gössling et al., 2020). The case study is based on twenty-seven semi-structured in-depth interviews with restaurant owners, their staff

and a representative of the industry organisation[2]. We investigated three neighbourhoods in The Hague: "Centrum" (the inner-city), "Zeeheldenkwartier" and "Regentsekwartier" (Figure 1)[3]. We have anonymised interviewees by codes.

Figure 1: Geographical location



Source: Own elaboration

The remainder of this chapter is as follows. Section 2 discusses theory on the 1.5-metre-society and its implications for cities and restaurants, and FI. Section 3 provides the case study structured along the angles of our research (constraints; solutions; role of the city). We end with a concluding section.

[2] Six interviews were done during the 1.5-metre-society and the remaining afterwards. Interviewees are anonymised by codes.
[3] Two interviews were done in a village located between Rotterdam and The Hague.

THEORY

1.5-metre-society, urban competitiveness and restaurants

The 1.5-metre-society has large implications for urban competitiveness. Florida et al., 2020 expect that the dominance of global cities tends to remain, although the pandemic also offers other cities new opportunities for renewal. They refer to a "forced experiment" for work and commerce and expect that certain interventions, such as social distancing and physical barriers in public spaces may only be temporary, whereas others such as improved sanitation will likely become permanent. Furthermore, researchers speculate about the role of central districts, e.g., Kakderi et al. (2021) expect that pre-pandemic vibrancy in central areas may never be restored. Indeed, people may prefer going to suburban restaurants and stores that offer more (outdoor) space than restaurants in the central city (Florida et al., 2020; Nathan & Overman, 2020). Accordingly, many restaurants, stores and cultural facilities in central districts will go bankrupt because of increasing costs to become 'Covid-proof' and reduced demand (Florida et al., 2020).

Cities were also confronted with socio-economic challenges and resource constraints during the 1.5-metre-society related to various (partly overlapping) resource constraints (Gong et al., 2020). First, the virus leads to *staff shortages* due to infected workers and further absenteeism as workers need to take care of other (ill) people and children due to school closures. Second, the measures of the 1.5-metre-society put restrictions on the mobility of goods and people. These mobility restrictions lead to direct *financial constraints* to for mobility-related industries, such as hospitality, which are confronted with large drops in income. Moreover, mobility restrictions interrupt global supply chains, leading to *raw materials and (semi)finished goods shortages*. Thirdly, measures like a curfew and (semi-)closed facilitates (e.g., shops) put restrictions on available time and place to consume,

leading to financial restrictions for suppliers of these facilities due to declining consumption. (Gong et al., 2020).

The restrictions of the 1.5-metre-society hit the hospitality industry, that is concentrated in central districts, in particular. Travel restrictions lead to a strong drop in income (Alonso et al., 2020). Another challenge is the nature of work (Kakderi et al., 2021). Staff working in restaurants is more likely to catch the virus than customers (Florida et al., 2020) and remote working is not possible (Kraus et al., 2020). Accordingly, restrictive measures such as lockdowns result in an even stronger income decline as food delivery and takeaway are the only income sources for restaurants (Kraus et al., 2020). Moreover, studies show large-scale job losses in the restaurant business (Gössling et al., 2020), and that social distancing blocked (open) innovation in the hospitality sector (Breier et al., 2021).

Restaurants can take various actions to cope with the crisis, including: using alternative income sources; increasing health and safety measures; applying for relief measures provided by (local) governments; and temporary discontinuity of operations and novel approaches for reopening the business (Alonso et al., 2020). These actions imply changes in business models and competitiveness. Indeed, empirical studies (Breier et al., 2021; Kraus et al., 2020) show that restaurants have successfully changed their business models. They can do this either alone or by networking with other urban actors (Harms et al., 2021), such as loyal customers (Breier et al., 2020), other restaurants or (urban) governments.

Urban governments have a dual role in the 1.5-metre-society. One the one hand, cities need to safeguard public health by implementing and controlling restrictive measures. This becomes clear from the police and unarmed civil servants ("BOA's") of municipalities in The Netherlands (as elsewhere) who are in charge of controlling compliance to measures and rules imposed, resulting in fines and sometimes even closure of businesses (Scheres & Curfs,

2020). On the other hand, cities can support restaurants in various ways. As various cases show, cities can stimulate demand by promoting local business among their citizens or by offering citizens information about local shops and restaurants that offer delivery services. On the supply side, cities can help restaurants to set up digital platforms aimed at supporting restaurants in takeaway services or exempt them from paying municipal taxes. Another supportive measure used to overcome the reduced capacity of restaurants is by allowing business in the street and transforming public spaces (e.g., squares, parking lots, pedestrian zones, streets) into space for restaurants (Kakderi et al., 2021; Florida et al., 2020).

Frugal innovation

FI is an overarching approach to innovation (Pisoni et al., 2018) based on the philosophy of "doing more for less" (Radjou et al., 2012), later elaborated into "doing more with less for many" (Bhatti et al., 2018:6). The approach has been defined in various ways and has been intensively discussed in theoretical reviews (Agarwal et al., 2017; Pisoni et al., 2018; Hossain, 2018). We follow and slightly adapt Leliveld & Knorringa's (2018: 1-2) definition that FI is a process of "(re)designing products, services, systems, and business models in order to reduce complexity and total lifecycle costs, and enhance functionality, while providing high user value and affordable solutions" in resource-constrained environments (Agarwal et al., 2017). These solutions encompass products, services, processes, or business models (Hossain et al., 2016) and need to be affordable, accessible, and simple to use (adapted from Bhatti et al, 2018). Constrained resources include materials, funding, technology, skills and other constraints (Hossain et al., 2016). Solutions can be developed by the interaction between various actors in innovation ecosystems, such as consumers, firms, knowledge institutes and institutions (Pisoni, 2018).

Initial streams focused on resource-constrained contexts of societies in developing economies (Leliveld & Knorringa, 2018), whereas later streams focus on Western entrepreneurs who save on input resources to make their production processes more efficient (Weyrauch & Herstatt, 2016) and on Western consumers who save on consumption for sustainability concerns like climate change (Prabhu, 2017). This sustainability stream (Prabhu, 2017) also pays attention to frugal solutions to counter urban problems such as heatwaves (Van Tuijl et al., 2022). A recent stream deals with FIs as a response to overcome medical shortages in the COVID-19 crisis in developed as well as developing countries (Corsini et al., 2020). This steam also added a combination of repurposing, reuse, and rapid deployment as dimensions of FI, beyond affordability, accessibility and low complexity (Harris et al., 2020).

However, so far, no attention has been paid to FI as a response to constraints caused by the 1.5-metre-society and resulting effects on competitiveness. In this study, we take on this challenge by exploring solutions to overcome resource constraints by restaurants in The Hague along the FI dimensions of affordability, accessibility, and rapid and easiness of deployment (e.g., solutions have low complexity and can be implemented quickly). As indication of competitiveness, we explore the duration of these solutions. When solutions are still used in the post-1.5-metre-society, we indicate this as sign for improved competitiveness, when solutions are only used during the 1.5-metre-society we regarded them as (frugal) survival strategies. We investigate the role of the city by analysing urban policies, and the interaction between restaurants and other urban actors, and we explore different neighbourhoods inside and outside the centre. However, we first discuss constraints and solutions.

RESULTS

Constraints

The largest constraint is *income*. Obviously, due to restricted opening hours, complete lockdowns, and the 1.5M-distance-rule all restaurants received less or no income. This was caused by a large decline in demand as customers were not allowed or willing to come to restaurants. The lack of income becomes also clear from the fact that all restaurants in our analysis, except (A3;B4;C3), made use of state support that was targeted to overcome a part of the lost income and to avoid laying off staff. Despite the fact that this support (partially) compensated for income losses, income was lower than in normal times. This was also a result of a decline in sales of drinks and desserts, the products with the highest profit margins, e.g.: "the takeaway was working well. The net income, of course, was lower … During the Covid, we lost 50% on wine sales. People, of course, started to buy their wines elsewhere and came here just for the food" (B2).

The reduction of income is caused by two direct and several indirect constraints of the 1.5-metre-society. The largest direct constraint is *space* as it was hard to comply with the 1.5M-distance-rule. This was a particular constraint for smaller restaurants that have limited options to take tables away to keep the required distance between customers without losing nearly all their capacity. For instance, (A2) is only two square metres large and needed to reduce its capacity from three to one table. For these small restaurants, a decline in capacity led to a drop in income from dining to almost zero. However, also owners of larger restaurants indicated that it was hard to comply with the 1.5M-distance-rule for which entrepreneurs were responsible in their restaurants. Controlling this rule is against the philosophy of hospitality, as becomes clear from phrases like: "we do not want people to feel like it was a prison" (A1); and "we are not the police" (E1). Likewise, for customers it was hard to keep distance when they relax in a restaurant: "Our restaurant is in the middle of The

Hague, so we receive a lot of high-level politicians who should comply with the rules. But when people come in and drink a nice glass of wine and relax, well then, the 1.5M-distance-rule does not exist anymore" (A9). Accordingly, various restaurant owners relaxed or even completely ignored the 1.5M-distance-rule by allowing more people (instead of sending people away) and bringing back tables that were removed to keep distance. This relaxation was especially done in later phases of the 1.5-metre-society when many customers were fed up with the regulations ("corona-tiredness"). *Time* is another direct constraint caused by semi-lockdowns in which restaurants needed to close earlier. Even though some entrepreneurs managed to shift from dinner to lunch and breakfast to overcome the constraint of earlier closing times, many interviewees indicated dependency on the evening as the time to earn money.

Beyond these direct constraints, we observed indirect constraints caused by the regulations. The most important one is *staff* that was mentioned in nearly all interviews. Due to a lack of income, and despite state support, various restaurants (e.g., A4) could not afford to pay their staff members anymore. However, also restaurants that could still pay their staff, indicated a shortage as workers were ill (E2), afraid of getting the virus (A5), or left for their home country (C1). Accordingly, restaurants lost skills, and in some cases also 'company secrets', e.g.: "I hired a good staff, well-trained and with experience. Then the pandemic came and I couldn't keep them … they knew my recipes which are special and original, and potentially this knowledge went to competitors" (A4). The shortage of staff is a challenge that lasted in the post-1.5-metre-society which is partly related to relatively low salaries in the hospitality industry. Various workers moved to other sectors during the pandemic and did not return to their lower-paid jobs in restaurants (E2).

Other indirect constraints include *ingredients, packaging materials* and *hygiene products*. Restaurants in certain specialised cuisines could not get their imported ingredients

due to interrupted supply chains and travel restrictions. For instance, the owner of a French restaurant (B2) could not travel to France to personally select the best ingredients, whereas Italian restaurants (C5) and (A2) could not order high-quality meat from Italy. Packaging materials were getting scarce due to a sudden rise in demand for takeaway and delivery services, which was one of the few options to generate income during lockdowns. Likewise, due to a large increase in demand for hygiene products across society, there was a large shortage of these products that strongly increased prices. For instance, (A1) mentioned a peak price of €30,- for a box with 100 gloves which was priced at €3,- to €4,- before the pandemic.

Finally, we observed that most interviewees do understand the need for regulations to safeguard public health. However, they had two main points of criticism. First, the irregularity and sudden changes in regulations brought large uncertainties and made 'daily' business activities, such as staff planning, difficult: "The uncertainty is really annoying … you do not know what to expect and that is very frustrating" (D1). Second, nearly all interviewees referred to unfairness in regulations that were stricter for the hospitality industry than in many other consumer-oriented sectors like (food)retail.

SOLUTIONS

Capacity reduction, panels and stickers

This set of solutions is used to overcome space constraints, but with important nuances in frequency of use, frugality, and duration. Various restaurants (A11;C2;A1;A3) use *stickers* on the floor to comply with social distancing. This frugal solution was implemented quickly and was essential in fulfilling the regulations, but had limited effects in the post-1.5-metre-society.

Likewise, *capacity reduction* was used by nearly all restaurants to keep a safe distance between guests. This frugal solution did not cost anything and could be implemented directly (i.e., by taking away tables and chairs), although for larger restaurants this solution had a smaller effect on their business than for smaller ones. With exception of (A5), which decided to keep the reduced capacity as it created more comfort for the waiters and guests by having more space, all other restaurants turned back to their normal capacity in the post-1.5-metre-society. Some restaurants (B1;D2) already went back to the 'normal' situation during the 1.5-metre-society to avoid tensions with customers and to generate 'normal' income.

Only three restaurants (C6;C7;D1) used *protection panels* between tables, despite the fact that this solution would imply that restaurants could keep their normal capacity. This solution can be frugal by self-making of the panels, as (C6) did: "I found plexiglass for the plastic panels before Covid … They wanted to throw them away and I thought that I could use them for the future. It is 8mm plexiglass which is very expensive, and I thought how can they throw this away?" The other two cases used the non-frugal solutions of buying expensive plates on the market. The high price of panels is a key explanation for why other restaurants did not use panels. Interviewees indicated that taking tables away was a sufficient solution, and there is no need for buying expensive panels. A second rationale for not using panels was that it limits the dining experience, as illustratively put forward: "I do not like these panels at all … it does not give the effect of a restaurant" (A10); <panels> "make the place ugly" (B1) and "feel like people are sitting in a cage" (A1).

<u>Dine-at-home (delivery, takeaway, and cook-at-home) and gift cards</u>

These solutions are essential to overcome a lack of income during periods of (semi)lockdowns when dine-in was not allowed. Therefore, with two exceptions (B2;B3), all

restaurants implemented at least one of the dine-at-home solutions. In various cases, we observed that restaurants added additional products to dine-at-home solutions, such as: providing sanitation gel as a present (a scarce product at the start of the pandemic) for takeaway (A1) or combining cook-at-home boxes with a beer bingo (D1); a pub quiz (A11) and music playlists (A9). These additional features illustrate the importance of experience and relations with and between guests in the hospitality sector.

For restaurants with *existing takeaway and delivery* options had positive effects in the form of a larger share of delivery/takeaway in the overall business (A3;B3) or even a complete shift into delivery/takeaway as (C1) did by changing from an Italian restaurant into a pizzeria. Both existing and *"new" takeaway service*s can be regarded as frugal as many restaurants quickly set up such services to survive. They quickly learned how to pack their dishes correctly and adapted menus and ingredients to make them suitable for takeaway. Within the takeaway solution, we also identified another frugal solution as (A1) set up a *'waiting tent'* so customers remain dry during the rain while waiting for their orders during the lockdown.

Own delivery services, in contrast, are not a frugal solution, as can be illustrated by (A9) who set up its own delivery service: "that brings additional services, like a 'food ticket', a mobile payment device, cars, and scooters that needed to be rented. Delivery is not the same as walking with a plate". (S)he continued by referring to the skills of cooks on what dishes can be delivered and how to pack these properly. Also, other restaurants referred to limitations of own delivery by investments in transport modes and skills of staff.

Outsourcing to *delivery platforms* such as Thuisbezorgd.nl and Uber Eats might be regarded as more frugal as it does not require investment costs in delivery skills and equipment and websites/ordering systems. During the (first) lockdown, restaurants could

even join these platforms for free, helping them to survive (C6;C7) and to reach new customers (A9). However, after the lockdown, restaurants needed to pay a commission fee of about 30% per order. Accordingly, and with exceptions like (C3), many restaurants (A1;A4; B1;B4;C1;C6) stopped their contracts with delivery platforms as they were not able or willing to pay the commission fee. Moreover, restaurants referred to 'daily conflicts' with and low service quality of delivery platform workers (A9;B1) and a loss of personal contact with customers as additional reasons against using delivery platforms in the post-1.5-metre-society.

All types of dine-at-home solutions, despite some exceptions, were mostly short-term solutions to survive the 1.5-metre-society. Many restaurants wanted to go back to their core business of dine-in, which is regarded as another business concept, e.g., "for us, it is about hospitality and experience and the fact of being served. You cannot reach that effect when you open a food box at home" (E1). Moreover, the concepts have other cost and income structures (e.g., dine-at-home misses income from products with high profit margins), as illustratively explained by (C4): "50 people dining in our restaurants is at least as profitable (if not more profitable) than 200 people ordering through Thuisbezorgd.nl". In addition, it is hard to combine both concepts due to a shortage of staff (A9).

Gift cards, in contrast, can be easily integrated into normal business. Through this solution, customers can support local businesses by buying a gift card at the platform Gifty. Restaurants could join Gifty for free (at least during the pandemic) and directly get income when customers buy a voucher for their restaurant. Restaurant (A1) used this solution and benefited as it had a lot of loyal customers who bought such a voucher. Various of them did not use the card, implying 'free money' for (A1) who is still connected to the platform.

Overall, it can be concluded that delivery platforms and takeaway can be regarded as frugal solutions to economically survive the 1.5-metre-society. However, most of these solutions and the non-frugal solution of own delivery and cook-at-home boxes were not prolonged in the post-1.5-metre-society, in contrast to gift cards.

Adaptation of dishes, menus, and meal type

Adaptation of dishes and menu cards was a widely used solution implemented for two reasons. First, it overcame shortages of (affordable) ingredients. For instance, (A2) reduced the number of meat and fish dishes to compensate for shortages of these products. This entrepreneur decided to keep this change and focus on vegetarian cuisine due to increasing demand in this area. Second, restaurants have *reduced the number of dishes* to adapt the products for dine-at-home solutions, as illustratively put forward: “So, few things I took off the menu where I felt okay this is not gonna be in a good state when, you know, optimal state when it arrives (C3). Also, (C5) and (C1) which stopped with meat dishes and only prepared pizza and bread for takeaway. (A1) did the opposite and added a bowl as a *new dish* for delivery.

Adaptation (mostly reductions) in dishes and menu cards was a frugal solution as it saved costs and could be implemented quickly and easily based on the skills of the cooks of these restaurants. There is no clear pattern in the duration of the adaptations About half of the restaurants went back to the old menu card, whereas others discovered a new niche or structurally wanted to save on costs by offering less variety.

The last solution within this group, *adaptation of meal type* (shift from diner to lunch and/or breakfast), was a strategy to overcome reduced opening hours used in only a few specific cases. (A8) was already serving lunch and dinner, and accordingly, did not need to

make any changes, whereas (C2) is a start-up that opened during the 1.5-metre-society and adapted its original plan (hence, not an established concept) from a restaurant into a bakery with breakfast and lunch. Only (A7) and (D4) extended their dining restaurant with lunch activities. Other restaurants have not shifted or extended to lunch as this was regarded as another type of business than dining (e.g., A11;C6): "The restaurant here in The Hague is focused on dinner and we are known for that. You do not come here for a quick lunch" (A10) and people do not have the "normality to eat Indian food at lunchtime" (A6). Another argument for not extending to lunch business are staff costs required. Thus, adaptation of meal type is not a frugal solution and is lasting in only specific cases.

QR code ordering and family members

Despite being one of the largest constraints, and lasting beyond the 1.5-metre-society, we have seen limited options to overcome the staff shortages. The most commonly used, and frugal, solution was *working more hours by owners* of restaurants or to rely on *family members to support*. This solution could partly overcome staff shortages in the short run, but it is questionable whether this is a permanent solution.

The *QR code ordering* system allows customers to read menu cards and order their dishes via QR codes with smartphones while sitting at a restaurant table. This system is not only a tool to reduce social contacts during the 1.5-metre-society, but can also overcome staff shortages in the post-1.5-metre-society. Nevertheless, we found only two restaurants (A5;A8) using such a system. One argument against QR code ordering is that it would exclude older customers for whom this system might be too complex (C6). Other possible arguments against this system might be high costs and reduction of personal contact with customers. As such, the solution is not frugal due to the high costs and complexity for users.

Food walks and terraces on public spaces

This group was targeted to overcome internal space restrictions by using public outside space. *Food walks* were a concept where small groups of visitors make a tour along various restaurants that offer small snacks (tapas style) that visitors could eat on the street or on terraces in front of restaurants. We identified two types of such walks. One is organised by start-ups that developed an app for such tours and approached restaurants in various cities to participate and to enable local tours. Restaurants (A5), (B5) and (C2) participated as it was easy to join ("reply to the e-mail"), easy to prepare/plan (visitors booked their tour) and it brought in some sales and new customers while still following the basic rule of keeping 1.5M distance. The second type was a self-organised tour by a local community of restaurants: "Next week we organise a walk together with three other hospitality firms here in the Westland, where you walk along four addresses and get some nice food or drinks" (D1). Both types can be regarded as frugal and bring some income during the lockdown period. As such, the food walk concept was a temporary solution to survive as none of the restaurants participate in such walks in the post-1.5-metre-society.

Terraces in public spaces were a policy measure that aimed to support restaurants to (partly) overcome internal space constraints of the 1.5M-distance-rule by a new terrace or extension of existing terraces in public spaces. About half of the restaurants in our study used this type of support. For example, (A8) extended its terrace jointly with neighbouring restaurants on a central square in The Hague. We also identified frugal solutions within this solution. For instance, (B4) created self-made windshields and (C3) made a terrace from pallets and grain bags: "I am the first person to do it like this, very easy, vegan, cheap and durable … I collected all these materials and built the terrace with two or three friends".

Nearly all restaurants using this support are positive about this solution. Nevertheless, half of the restaurants could not use this support measure as their request was declined due to possible accessibility problems. For instance, (A7)'s terrace would be too close to the tram; (A3)'s and (A4)'s terraces were too close to busy streets, and (B1) and (B2) would hinder pedestrians. This led to feelings of unfairness, as illustratively mentioned by (A3): "Even the terrace in front us, unfortunately, they made the regulations in a way that the other side gets more terrace than this side <of the street> ... It is just not fair".

Although not all restaurants could benefit from the solution of terraces in public spaces, it can be regarded as frugal as it could be implemented quickly without costs. The policy stops in 2023 and The City has no plans to keep certain newly created spaces for hospitality and leisure.

ROLE OF THE CITY

Interaction urban actors and policies

Many restaurants developed and implemented solutions based on their own ideas and experience of owners. Often, they were supported by actors within their close internal circle. *Family members* played a crucial role by working as restaurant staff to compensate for this shortage and for providing and implementing new ideas. For instance, the idea of using a gift card came from (A1)'s wife, whereas (B1) explicitly consulted his kids for new solutions. A similar role has been played by *friends*. For instance, (C6)'s friend brought the idea to focus on delivery; (C4) added Greek food for delivery which was easy due to the support of a Greek friend; and (A4) renovated his restaurant and ventilation system by using raw and natural materials, based on the skill of a friend who is a bio-engineer. Finally, *staff members* played an important role as becomes clear from (D1), who stressed the importance of his

team who are like a ‘small family’. However, not all restaurants could use their staff as they stayed at home for fear of the virus or could not stay for financial reasons.

Nearly all restaurants explicitly mentioned the importance of *customers* during the 1.5-metre-society. Customers supported restaurants in two ways. First, by ordering food for dine-at-home, so that restaurants still got income (A1;A2;B1;B2;B4;C1;C2:C3;C3:C5;C7;D2). Restaurants also referred to mental support from customers (B1) and increasing attention for local business (C2) during the pandemic, e.g., “The customers were the only actors that supported me. Sometimes they bought a pizza even when they did not want one”. Also, others referred to mental support from customers who bought products they did not need (B4) or gift cards that are not used (A1). Second, customers proposed solutions, such as (C1) who got the suggestion to focus on delivery and (D2) who shifted from dinner to lunch and got the suggestion to move from Italian food to pancakes which were more appropriate for lunch.

Interaction with *other restaurants* has taken place in three ways. First, restaurants are represented by the industry organisation which played a key role in negotiation with the national government concerning the relaxation of restrictions and financial compensation. The association informed its members about changing regulations and solutions through a WhatsApp group and newsletters (E1). The solutions provided are general tools and not tailor-made solutions, which may explain that most restaurants in our study, with few exceptions, did not interact with the association, as interviewees stated “this is not my world” (B2). Restaurant (C1) even cancelled its membership due to insufficient support from the association. Thus, the association was important for high-level interaction with policymakers and informing its members, but seemed to have a limited role in stimulating interaction between members.

Second, neighbouring restaurants informally cooperated with each other by jointly organising activities, such as a food walk or terrace extension in public space. However, organising informal activities seemed to be difficult for competitive reasons. For instance, (A2) tried to organise a roundtable, but that did not work as restaurants were not willing to create synergies due to a fear of spying.

Indeed, and as a third form of interaction between restaurants, restaurants got inspiration about new solutions by monitoring each other (e.g., B4). This took place on an international level through social media (A1), but certainly also on the local level: “Yeah, what you see around would work well. You walk through the city and think hey that’s a good idea” (E2). Likewise, (D2) explained that the idea of a dine-at-home box came from a neighbour, which was adapted to the style of D2. (A4) also observed what others do, and then tried these solutions out. Hence, the geographical proximity of restaurants was important for joint initiatives and for monitoring.

Interaction with public authorities took mainly place when restaurants requested financial support packages to pay salaries (and thus to avoid staff laying off) and other costs. Nearly all restaurants made use of such support provided by the *state government* and seemed to agree that such support was ‘essential to survive’. However, with some exceptions (e.g., A11;D1) interviewees criticised the design and access to financial support. For instance, measures were often based on the loss of net income, which was calculated after financial support was given to restaurants. In most cases, the mismatch between the estimated income deficit and the actual one transformed the support in a 'loan.' As a result, many restaurants have problems paying back the support received. *The City of The Hague* implemented some forms of State support (e.g., TOZO), but its own support seemed to be limited to providing public spaces as temporary terraces. In contrast to neighbouring cities, like Delft and

Rotterdam, the City of The Hague did not support entrepreneurs by the remission of local taxes (Omroepwest, 2021).

Comparing three neighbourhoods

The analysed neighbourhoods differ in population and function. Centrum is a place of offices, public authorities, retail and touristic attractions, whereas Regentsekwartier is a residential quarter where mainly families live. Zeeheldenkwartier is a trendy neighbourhood for young couples that is also visited by tourists, and as such, is somewhere in-between. The different profiles explain differences in constraints and the success of solutions.

Restaurants in Centrum seemed to have suffered a lot from space and time restrictions caused by (semi-)lockdowns and the "stay-at-home" policy. The area was empty, as becomes clear from phrases like "it was completely deserted" (A8) and it was a "ghost street" (A2). Restaurants in Centrum stressed that their traditional customers (tourists and office workers) did not come (A2;A7). For instance, (A11) mentioned dependency on civil workers and noticed a strong decline in customers as they tended to follow the stay-at-home advice. Likewise, restaurants in other areas (C5;A1) told us to be happy not being in an empty city centre due to the dependency on shoppers and tourists.

The profiles also have implications for the solutions addressed. Centrum turned out to be less suitable for dine-at-home solutions as illustratively put forward by (A9): "Because in the city <centre> a lot of people were expats live here but they all went back to their countries … all the other people live like further away so you have to do everything with cars. So, it costs us also a lot of gas." (A9) also set up a takeaway service, but this concept was unsuccessful due to a lack of customers, lower prices (compared to dine-in), and additional packaging costs. Similarly, restaurant (A11) put limitations on takeaway due to the

lack of families in the centre of The Hague. (A2) brought another limitation of the inner-city as it was initially (during lockdowns) not benefiting from terrace extension due to the lack of tourists.

Despite this exception, we have not observed other differences between the neighbourhoods in the usage of public space as a terrace. In each neighbourhood about half of the restaurants used this form of support and the other half were not able or willing to receive support, with a slight nuance on the restrictions between Regentessekwartier and Zeeheldenkwartier. In Regentessekwartier, terraces seemed to conflict with parked cars. For instance, (C4) did not get a license for a terrace because the street was too busy and parking space was limited (for families living there), and (C5) could not install a terrace due to a parking pole in front of the restaurant. In Zeeheldenkwartier (and parts of the centre as well), terraces were not allowed due to possible conflicts with pedestrians because of the narrow sidewalks and parking lots that could be used for terraces only on one side of the street (B1,B2,A4,A3).

The difference in profile also had consequences for interactions with the different actors. In Regentsekwartier and Zeeheldenkwartier there is a much stronger interaction with customers as a large share of them live in the same neighbourhood. There were strong personal relations; e.g., (C2) indicated calling customers by name, and (B3) personally knew 70% of the clients. All restaurants in these neighbourhoods mentioned loyal customers as a key cause to surviving the 1.5-metre-society by ordering food or providing suggestions for solutions. In Centrum, the base of loyal local customers and strong personal interaction was lower, despite major exceptions (A1,A11;A8;A2,E2).

Whereas restaurants in Centrum had lower interaction with customers, they had higher interaction with the City Government. (A8) and (E2) had direct contact with the City government and received support on how to implement the 1.5M-distance-rule and the terrace extension. Both are located in Centrum. On the other hand, we observed that only one restaurant in Regentsekwartier (C3) received control, whereas in Zeeheldenkwartier and Centrum many restaurants complained about controls, such as (A8): "We are in the centre … there were constantly police-officers and the BOA's passing through here. So, we felt more that we really have to make it obvious that we are following the measures. … Whereas if you were in a <peripheral> neighbourhood, you would not have that". Thus, being in geographical proximity to authorities may have advantages in terms of more support, but it certainly has also its downside of being more in the spotlight for control of regulations.

CONCLUSION

This chapter has explored the role of FI to overcome resource constraints during the 1.5-metre-society. Thereto, we combined urban studies, with hospitality and FI literature to explore a case study of restaurants in The Hague to elucidate: i) the largest constraints perceived by restaurants; ii) (frugal) solutions used to overcome these constraints and effects on competitiveness; iii) the role of the city (interaction urban actors and policies).

The largest *constraints* identified are space and time, which are directly caused by the restrictions of the 1.5-metre-society, whereas shortages of ingredients, packaging materials and hygiene products are indirectly caused by the regulations. Staff shortage is another indirect constraint that lasts in the post-1.5-metre-society. All constraints lead to a reduction in income. Another finding is that restaurants referred to unfairness in regulations in comparison to other sectors, and restaurants suffered from irregularity and sudden changes in

regulations, hindering 'daily' business activities as well as investments in innovative solutions to address constraints.

Figure 2 summarises the *solutions* along the dimensions of frugality and duration showing that FI is essential to overcome various constraints and generate some income, enabling restaurants to survive the 1.5-metre-society. Only a few frugal solutions (gift cards and existing dine-at-home) last in the post-1.5-metre-society and may increase the competitiveness of restaurants. Adaptation of dishes and menu cards are frugal solutions that last beyond the restrictions in half of the cases. In these cases, entrepreneurs identified new niches or structurally wanted to structurally save on costs. We have identified a limited number of non-frugal solutions (in comparison to the frugal ones) which can be explained by limited financial resources as well as irregularity in regulations hindering entrepreneurs to make larger investments. QR code ordering is the only identified non-frugal solution that lasts in the post-1.5-metre-society[4], and is used in only two cases.

A key explanation for the limited lasting (frugal and non-frugal) solutions is that restaurants want to go back to the 'old normal life'. The restrictions of the 1.5-metre-society are against the core philosophy of hospitality: the experience of being served and meet each other. This experience cannot be replaced by dine-at-home solutions or with dine-in and (self-made) protection shields. Additional features added to dine-at-home solutions (e.g., online beer bingos) are temporary solutions to keep in touch with customers. Likewise, other digital solutions (e.g., delivery- or food walk platforms) are mainly used to survive or used in a few cases (QR code ordering) and do not seem to replace in-person gatherings. Thus, from an entrepreneurial perspective, limited structural changes in competitiveness can be expected.

[4] Renovation of restaurants could also be regarded as a lasting non-frugal solution, but was often already planned before the lockdown.

The *city* plays an essential role for restaurants to survive the crisis due to interaction with other urban actors and temporary usage of public space. Friends, family members and staff support restaurants by providing and implementing new solutions. Loyal customers from the same neighbourhood have a similar role and generate income through their purchases and gifts. Geographical proximity to other restaurants is crucial to get inspiration for solutions ('monitoring') and for joint initiatives (e.g., food walks). Public authorities have a double role by controlling restaurants and by supporting restaurants to survive with funding and provision of public spaces (parking lots; squares and sidewalks) as temporary terraces. As such, policies are mainly targeted to support restaurants to survive and not to transform the city.

The inner city (Centrum) differs from the other districts (Zeeheldenkwartier and Regentsekwartier) in regarding constraints and solutions. During the constraints, it suffered more from time and space constraints. The place was more abandoned ('a ghost town') due to the absence of expats, tourists, shoppers and (civil) workers who stayed at home. It had a smaller base of loyal customers for support and was less suited for dine-at-home solutions due to the lack of geographical proximity to families who are more tended to dine-at-home than other customers. Finally, restaurants in Centrum and Zeeheldenkwartier got more control by (municipal) police officers.

Overall, from the entrepreneurial and policy perspectives, we observed limited changes in competitiveness and we do not expect structural changes as many solutions were only temporary and survival-oriented. It is up to further research to explore lasting changes in consumer behaviour (e.g., relocation to suburbs or lasting shifts towards more dine-at-home) that affect entrepreneurs and cities. Moreover, as we analysed only three districts in The Hague with a specific profile (e.g., the base of national government, many expats), we suggest not only analysing other districts in The Hague, but also comparative analysis with other cities. Furthermore, we have not differentiated restaurant types. Therefore, we propose

studies on FI and restaurant types. Luxury restaurants may be less inclined to use frugal solutions than cheaper ones.

Figure 2: Solutions identified

	Temporary: to survive	**Lasting: post -1.5-metre-society**
Frugal	Distance stickers Self-made protection shields "Waiting tents" "Food walks" Terrace on public space Self-made windscreen and terrace foundation Family members as staff New takeaway service Delivery platforms Capacity reduction by removing tables	Gift cards Existing delivery and takeaway Adaptation of dish type* Adaptation of menu card*
Non-frugal	Protection shields Own delivery services Cook-at-home boxes Adapting of meal type	QR code ordering

* Is lasting in about half of the cases.

Source: Own elaboration

ACKNOWLEDGEMENTS

This project was funded by the International Institute of Social Studies, Erasmus University Rotterdam through the Local Engagement Facility fund. We would like to thank Sanghamitra Chakravarty, Beatrice Hati and Peter Knorringa for conceptual suggestions and preparation of the interview guide, and Annebel Beekenkamp, Jikke van den Brand and David La Cruz for their support with the fieldwork. The usual disclaimers apply.

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