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*Source / Izvornik:* **International Journal of Operations & Production Management, 2023, 43, 183 - 204**

**Journal article, Published version**

**Rad u časopisu, Objavljena verzija rada (izdavačev PDF)**

<https://doi.org/10.1108/IJOPM-09-2022-0592>

*Permanent link / Trajna poveznica:* <https://urn.nsk.hr/urn:nbn:hr:124:664424>

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# How do governmental wage subsidies enhance SME resilience in the COVID-19 pandemic?

Governmental  
subsidies and  
SME resilience

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Received 20 September 2022  
Revised 20 January 2023  
2 March 2023  
9 March 2023  
Accepted 20 March 2023

## Abstract

**Purpose** – Coronavirus disease 2019 (COVID-19) has had a tremendous negative effect on the economies around the world by infusing uncertainty into supply chains. In this paper, the authors address two important research questions (RQs): (1) did COVID-19 wage subsidies impact small and medium enterprises (SMEs) to become more flexible towards the SMEs' business customers and (2) can such flexibility be a source for greater resilience to the crisis? As a result, the authors investigate the relationship between governmental wage subsidies and SMEs' flexibility norms towards the SMEs' business customers (study 1). The authors further uncover when and how flexibility towards existing customers contributes to SME resilience (study 2).

**Design/methodology/approach** – The authors frame the inquiry under the resource dependence theory (RDT) and behavioural additionality principle. The authors use survey methodology and test the assumptions in study 1 ( $n = 225$ ) and study 2 ( $n = 95$ ) on a sample of SMEs from various business-to-business (B2B) industries in Croatia.

**Findings** – Overall, in study 1, the authors find that SMEs that receive governmental wage subsidies have greater flexibility norms. However, this relationship is significantly conditioned by SMEs' competitive profile. SMEs that strongly rely on innovation are more willing to behave flexibly when receiving subsidies, whereas SMEs driven by branding do not. Study 2 sheds light on when flexibility towards existing customers increases SME resilience. Findings show that flexibility norms are negatively related to resilience, but this relationship is becoming less negative amongst SMEs with lower financial dependence on the largest customer.

**Originality/value** – This study extends RDT in the area of firm-government relationships by showing that wage subsidies became a source of power for the Government and a source of dependency for SMEs. In such cases, the SMEs receiving those subsidies align with the governmental agenda and exhibit higher flexibility towards the SMEs' customers. Drawing arguments from behavioural additionality, the authors show that this effect varies due to SMEs' attention and organisational priorities resulting from different competitive profiles. Ultimately, the authors showcase that higher flexibility norms can contribute to resilience if the SME restructures its dependency by having a less-concentrated customer base.

**Keywords** COVID-19, Wage subsidies, Resource dependence theory, Flexibility norms, SMEs, Customer concentration, Resilience

**Paper type** Research paper

## 1. Introduction

The coronavirus disease 2019 (COVID-19) crisis has significantly disrupted all spheres of life. The main distinguishing feature of health compared to other (primarily economic) crises is that health crises such as the COVID-19 pandemic bring a high degree of uncertainty into the

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**Funding:** This work was supported by the Croatian Science Foundation under the project IP-CORONA-2020-12-1064.



economic ecosystem, paralysing business activities and thus reducing aggregate demand (Scala and Lindsay, 2021). For example, the World Bank and the International Monetary Fund (IMF) observed a significant slowdown in economic activity due to an uncertain outlook on how the pandemic would be dealt with (World Bank, 2020). One of the reasons behind this slowdown is the disruptions in global supply chains. For example, the inflow of many raw materials and products has been reduced due to this uncertainty, hampering economic activity throughout the supply chains. This draws a compelling question on how COVID-19 has reflected on buyer–supplier relationships, a central supply chain building block. Anecdotal evidence shows that firms with stable customer relationships can overcome crises and become more resilient (Ernst and Young, 2020). One of the preconditions for nurturing customer relationships is becoming more flexible by helping customers in financial distress through instruments such as payment deferrals (McKinsey and Company, 2020). However, being flexible requires financial resources and COVID-19 has significantly hampered the firm’s ability to remain liquid and solvent (Miklian and Hoelscher, 2022). Recent evidence indicates that the COVID-19 crisis severely hit SMEs (Ebeke *et al.*, 2021; Autor *et al.*, 2022).

In recent reflection papers on COVID-19, scholars have identified two critical gaps that need to be addressed: (1) what is the role of the Government in providing support (Micheli *et al.*, 2021) and (2) how did the crisis change the landscape of business relationships in the supply chain (Craighead *et al.*, 2020). Shedding light on these gaps becomes an essential agenda for uncovering how policy- and firm-based behaviours contribute to creating resilience to crisis. First, financial distress initiated by COVID-19 forced governments to devise measures to help firms become resilient by providing them access to public resources. The role of measures has proved beneficial in strengthening the resource base of companies to survive the crisis (Autor *et al.*, 2022; Dorr *et al.*, 2022). Wage subsidies were the most prominent anti-pandemic policy instrument and were empirically found as critical in avoiding losing staff and heading into bankruptcy (Autor *et al.*, 2022). In our research context, wage subsidies amounted to €2.4 billion, about 3.5% of Croatia’s pre-pandemic gross domestic product (GDP). However, apart from positive direct effects, policymakers also wanted to support positive spillover effects by emphasising the importance of solidarity amongst firms and consumers (Grözinger *et al.*, 2022). In addition, only a narrow stream of the literature is closely related to small and medium enterprises (SMEs) that are resource-constrained and thus more vulnerable and less resilient to crises (Miklian and Hoelscher, 2022; Miocevic, 2021; Peric and Vitezić, 2016) and they were the largest recipients of COVID-19 measures (Autor *et al.*, 2022).

Second, crises and uncertainties have become part of many conceptual models exploring their impact on the firm (Bundy *et al.*, 2017; Trahms *et al.*, 2013). Although this literature attempted to dive into details on how individual firms cope and respond to crises to become more resilient (Williams *et al.*, 2017), it paid significantly less attention to the potential spillover effects the crisis might have on SMEs’ business relationships throughout the supply chain. Mainstream supply chain literature suggests that downstream and upstream relationships can be a source of resilience (e.g. Polyviou *et al.*, 2020). However, only narrow literature addresses how relational governance mechanisms (Ashiru *et al.*, 2022; Mora Cortez and Johnston, 2020; Ozanne *et al.*, 2022) contribute to strengthening these relationships as a means for SMEs to deal with crises. Flexibility norms represent the vital building block of relational governance (Macneil, 1980) and can be defined as shared expectations by partners that mutually beneficial adjustments will be made due to environmental disruptions (Palmatier *et al.*, 2007). Surprisingly, there is scant evidence on how and to what extent firms, especially SMEs, deploy flexibility norms to safeguard their crucial customer relationships. Eventually, the identified gaps lead us to research questions (RQs) we want to address in our study:

*RQ1.* Did governmental COVID-19 measures increase SMEs’ flexibility norms towards business customers?

RQ2. What is the role of flexibility norms in creating more resilient SMEs?

Consequently, addressing these two RQs would help academics bring scholarly evidence to policymakers and managers on how to respond more successfully to crises. To answer RQ1, this study uses the resource dependence theory (RDT) (Pfeffer and Salancik, 1978) and behavioural additionality principle (Clarysse *et al.*, 2009) to investigate whether governmental wage subsidies are the positive driver of an SME's flexibility norms towards its business customers. We present the logic in which wage subsidies were an instrument for establishing resource dependency between firms and the Government. Thus SMEs that received subsidies aligned their behaviour with the governmental expectations that publicly espoused more solidarity and mutuality in the economic system. In answering RQ2, we use the power restructuring principle from RDT (Casciaro and Piskorski, 2005), aiming to investigate whether SMEs that behave flexibly are more resilient to crisis.

This study brings the following contributions to the literature. First, the contribution is reflected in investigating the impact of government wage subsidies as an instrument that increases the SME's flexibility norms. External resources and governmental support become critical leverage where supply chains operate in conditions of uncertainty that reduce demand and disrupt the flow of resources within buyer–supplier relationships. Although most government subsidies were firm-centred to help them survive the crisis (Ebeke *et al.*, 2021), we uncover robust spillover effects evidenced by the increase of SMEs' flexibility norms towards business customers. We contribute to the literature by showing that wage subsidies can become a remedy for safeguarding buyer–supplier relationships during disruptions. Second, the contribution of our study is also reflected in testing the conditional effects through a behavioural additionality lens. Our findings indicate the differential effects of subsidies on flexibility depending on the SME's competitive profile. Such insights expand the knowledge on behavioural additionality by going beyond R&D subsidies and outlining the differential effects of wage subsidies on SMEs' decision to deploy flexibility norms. Third, we contribute to the literature investigating SME behaviour during crises by showing that flexibility norms can increase resilience if SME spreads dependency across its customer base. We utilise two studies (study 1,  $n = 225$ ; study 2,  $n = 95$ ) and use the unique survey data from Croatian SMEs merged with objective financial indicators.

## 2. Literature review

### 2.1 Resource dependencies in firm-government relationships

The idea of dependence is not new to business research. It was introduced to examine the firm's and constituents' interface in the broader business environment (Emerson, 1962; Hillman *et al.*, 2009). External dependencies can be triggered by many facets, such as intensified competition, globalisation, geopolitical dynamics and shortages in crucial supplies (Drees and Heugens, 2013). RDT postulates that organisations depend on each other to access financial resources, supplies and information that are instrumental to the organisation's functioning and survival (Pfeffer and Salancik, 1978). Some authors note that RDT is a convenient frame to analyse buyer–supplier relationships in environments characterised by uncertainty and disruptions (Fink *et al.*, 2006).

According to the tenets of RDT, power is unevenly distributed amongst the members of the supply chain, where traditionally, the partners who were positioned more downstream (e.g. retailers) exhibited dominance over those upstream (e.g. manufacturers) (Huo *et al.*, 2019). Recently, some authors suggested that the current COVID-19 context necessitates the revision of dependencies in the supply chain context (Craighead *et al.*, 2020). The COVID-19 pandemic disrupted the supply chain, forcing supply chain partners to work closely since the disruptions occurred downstream and upstream (Scala and Lindsay, 2021). This new everyday reality redefined the traditional postulates of RDT based on power imbalances

(Casciaro and Piskorski, 2005) by putting upfront the awareness that pandemics hurt everyone (Sandel, 2020). On the other hand, the role of the Government in fighting the negative economic consequences of the COVID-19 crisis was instrumental (Micheli *et al.*, 2021). By employing various measures, governments became essential in stabilising the economy. At the same time, the Government formed expectations through constant communication that showed to influence public opinion (Haan *et al.*, 2022).

A narrow stream of literature has applied the RDT lens to study the government-firm relationships (Abdurakhmonov *et al.*, 2021), especially in public subsidy allocation programs (Yi *et al.*, 2021). The central tenet behind theorising the resource dependencies in such a context is that governments, because of the provision of public resources, exercise greater power over firms that are recipients of those resources (Wry *et al.*, 2013). However, the literature still needs studies investigating how potential government-firm resource dependencies create spillover effects in buyer-supplier relationships. For these reasons, we look closely at how pandemics reshaped the buyer-supplier relationships within supply chains.

### *2.2 Buyer-supplier relationships in times of crises*

How to effectively deal with demand volatility on one hand and supply shortage on the other were prime questions for businesses and governments during COVID-19 (Magableh, 2021). Although the retail industries have been severely hampered during the crisis due to lockdowns, the other parts of the upstream supply chain witnessed demand and supply problems. Further complicating this aspect is that the firm is not an isolated island, as it depends on collaborating with various upstream and downstream partners in the supply chain.

Interfirm collaboration has shown to be an efficient instrument for dealing with supply chain disruptions and building overall resilience (Dolci *et al.*, 2017; Oliveira and Handfield, 2017; Polyviou *et al.*, 2020; Scala and Lindsay, 2021; Scholten and Schilder, 2015). Most academic research on collaborative buyer-supplier relationships originated from relationship marketing literature, where collaborating efforts were crucial outcomes of relational governance (Palmatier *et al.*, 2007). Relational governance demonstrates that business relationships can be managed through cultivating trust, commitment and relational norms such as flexibility, mutuality and solidarity that foster collaborative behaviours (Cao and Lumineau, 2015; Palmatier *et al.*, 2007). Relational governance is vital for dyadic collaboration, especially from the buyer's perspective, meaning the buyers cherish these initiatives by suppliers to a greater extent (Um and Oh, 2020). Recent research advocates that relational governance is vital in bridging responses to COVID-19 supply chain disruptions (Liu and Wei, 2021).

Flexibility norms assume that contractual terms between partners must be adjusted within the existing relationship (Macneil, 1980). Studies show that flexibility norms increase when the partner is more dependent on the other party and has invested much in such a relationship (Sezen and Yilmaz, 2007). In this line of reasoning, flexibility norms become high on the agenda during economic crises since the changing business landscape necessitates swift adaptation in buyer-supplier relationships. Theoretically, flexibility norms must be distinct from other forms of flexibility in supply chain relationships (strategic, manufacturing, etc.) (Yu *et al.*, 2015). In our study, we focus on flexibility norms through financial instruments provisioned to customers to minimise the adverse effects of demand contraction brought about by the COVID-19 crisis. That is, the redefinition of original contract terms, lowering the selling price (potential rebates and discounts) and trade credit possibilities (Oliveira and Handfield, 2017) would be seen as critical instruments for achieving customer's financial health (Ogawa and Tanaka, 2013). Consequently, evidence shows that firms changed their business-to-business sales behaviour during the pandemic by increasing

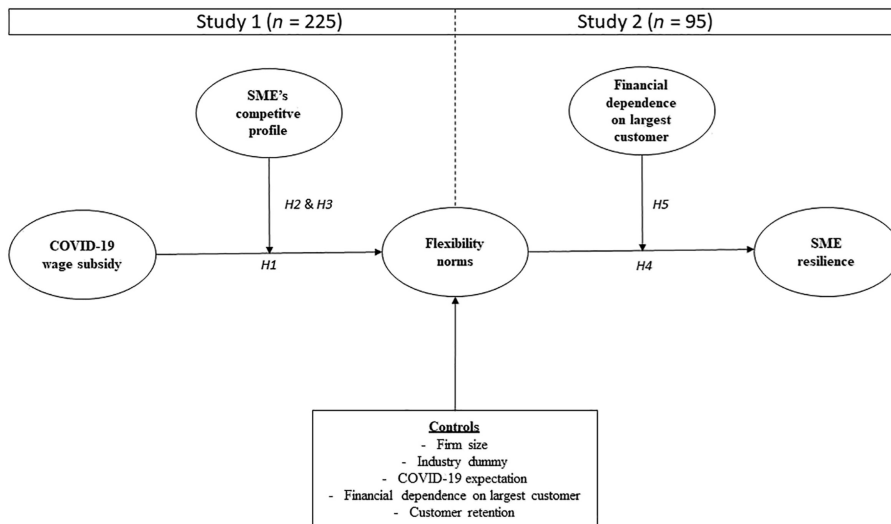
support to achieve customer success during the crisis (Rangarajan *et al.*, 2021). However, the question remains whether firms can increase flexibility norms when the crisis emerges. A recent study shows that firms, especially SMEs, are ready to put aside firm-centric behaviour and show increased sensibility towards supply chain partners through collaborative efforts during the crisis (Block *et al.*, 2022; Grözinger *et al.*, 2022). Buyers take pre-emptive action to prevent potential supplier problems and mitigate supply disruption problems. On the other hand, it becomes essential for suppliers to invest in buyers' financial health since buyers' demand can act as a financial stabiliser for suppliers (Oliveira and Handfield, 2017).

How the pandemic changed the landscape of the buyer-seller relationship can also be seen in recent theoretical reviews. For instance, Craighead *et al.* (2020) argue that the COVID-19 context necessitates the revision of the theoretical toolbox that explains supply chain relationships (Craighead *et al.*, 2020). In their recent work, Scala and Lindsay (2021) also warn about changing landscape in business relationships where the COVID-19 pandemic forced supply chain partners to work closely since the disruptions occurred downstream and upstream (Scala and Lindsay, 2021). Hence, we argue that the COVID-19 pandemic has triggered a heightened sensibility of firms towards the supply chain as a whole by outlining the solidarity in public discourse globally (Deutsche Welle, 2020). Even with such circumstances, the question remains to what extent firms have been flexible towards their customers. The perspective that might shed light on this is the Government's intervention in stabilising the supply chain flows through wage subsidies (Micheli *et al.*, 2021). We take on board this suggestion and illuminate how governmental subsidies can support higher flexibility norms of SMEs. Our research model is shown in Figure 1.

### 3. Research hypotheses

#### 3.1 Impact of governmental subsidies on SMEs' flexibility norms

Government subsidies initiate a unique form of resource dependencies (Abdurakhmonov *et al.*, 2021; Yi *et al.*, 2021). Wry *et al.* (2013) note that governments often must balance diverse economic and societal interests. Empirical evidence (Cappelen *et al.*, 2021) and anecdotal



Source(s): Created by authors

Figure 1.  
Conceptual model

examples (e.g. [Government of the Republic of Croatia, 2020](#)) show that fostering mutuality and solidarity in all social and economic life was an excellent tool in battling COVID-19. Henceforth, the COVID-19 measures aimed to stabilise the economy by applying a more systemic approach. In subsidy arrangements, firms are often unintentionally tied to behave in a way the Government expects them to ([Pfeffer and Salancik, 1978](#); [Yi et al., 2021](#)). In such cases, government-firm resource dependencies aim to stabilise the supply chains espousing solidarity and mutuality within firm-to-firm and firm-to-consumer relationships ([Grözinger et al., 2022](#)).

Helping firms in rough times can also increase their flexibility norms because of higher awareness of solidarity with their business customers ([Bonatto et al., 2020](#); [McKinsey and Company, 2020](#)). COVID-19 is an unprecedented health crisis that harmed the whole world, creating a mindset that success is only possible if there is cohesion and shared interest ([Sandel, 2020](#)). As such, it triggered higher solidarity (see [Cappelen et al., 2021](#)), reciprocity and altruism (see [Aksoy et al., 2021](#)) amongst people despite their differences. Based on the preceding arguments, we posit that government-firm resource dependencies have an overarching impact on buyer-seller relationships. Through the provision of wage subsidies, firms aligned more with the expectations of the Government and became less self-centric in their conduct. Against this background, SMEs hit by the pandemic were given wage subsidies to weather the storm. By being aware that the potential failure of their customers could endanger their economic well-being (e.g. customers might retaliate by finding new suppliers), SMEs who received wage subsidies were motivated to be more flexible towards their customers. This would mean that these SMEs channelled more resources towards their customers through trade credit, rebate allowances and redefinition of contractual terms favouring their business customers. Hence, we hypothesise:

- H1.* SMEs that receive wage subsidies have higher flexibility norms towards their business customers.

### *3.2 The moderating effect of SME's competitive profile*

Whether the received wage subsidies paved the way to higher flexibility norms to the same extent for all types of SMEs remains speculation. Behavioural additionality represents a way to analyse how firms allocate public subsidies in their strategic conduct ([Buisseret et al., 1995](#); [Dvouletý et al., 2021](#)). The instrument that received the most attention with behavioural additionality is R&D subsidies ([Buisseret et al., 1995](#); [Clarysse et al., 2009](#); [Neicu et al., 2016](#)). For example, [Clarysse et al. \(2009\)](#) find that R&D subsidies increase behavioural additionality via congenital and inter-organisational learning, whilst [Neicu et al. \(2016\)](#) find that R&D grants increased the number of concurrent projects of firms receiving public support, as well as scale, speed and relative orientation towards research. However, in the pandemic, behavioural additionality takes a different form due to the magnitude of the sales revenue drop, thus orchestrating how public subsidies would be utilised. Therefore, one of the crucial areas of interest would be stimulating the shrunk demand ([Fairlie and Fossen, 2022](#)). However, SMEs with different competitive profiles have divergent ways of approaching their customers and markets.

Due to severe resource constraints, SMEs often rely on intangible capabilities as a source of competitiveness ([Mansion and Bausch, 2019](#)). However, the capabilities might not be so interdependent and firms, especially SMEs, are pushed to focus on developing selective capabilities upon which they plan to build their competitive profile ([Grewal and Slotegraaf, 2007](#)). Consequently, the studies advocate that innovation and branding are critical for SMEs' competitiveness ([Merrilees et al., 2011](#)). In this regard, evidence shows that the goals of firms pursuing innovation would significantly differ from those of SMEs who pursue branding as a foundation of competitiveness ([Chang et al., 2018](#); [Ngo and O'Casey, 2012](#); [Zhang et al., 2015](#)).

Hence, innovative SMEs would rely strongly on new product development capabilities (O’Cass and Ngo, 2012), whereas SMEs that build a competitive advantage via branding are expected to invest in marketing communications that are the most excellent enhancers of brand equity (Luxton *et al.*, 2015).

Pursuing one of these paths may also reflect differently on SMEs’ flexibility towards business customers when they receive a governmental subsidy. More specifically, innovative SMEs will be motivated to redirect wage cost savings to flexibility norms by employing the behavioural additionality principle. Investing in customers’ financial health will ensure steady prospects for the new products the SME develops (Oliveira and Handfield, 2017). On the other hand, branding-driven SMEs see customers as their prime assets, so their ultimate goal is to enhance these relationships at any cost (Chang *et al.*, 2018). Therefore, we expect these SMEs to remain steady in their flexibility towards B2B customers regardless of whether they receive a wage subsidy. Hence, we hypothesise:

- H2. SMEs that focus on innovation (via new product development capabilities) will show higher flexibility norms when they receive a wage subsidy.
- H3. SMEs that focus on branding (via marketing communications capabilities) will show steady flexibility norms no matter the wage subsidy status.

### 3.3 Impact of flexibility norms on SME resilience

According to established evidence, buyer–supplier relationships are essential to achieving resilience (Ashiru *et al.*, 2022; Ozanne *et al.*, 2022); however, scant evidence corroborates how safeguarding existing customer relationships contributes to SME resilience. Resilience refers to a firm’s ability to sustain positive outcomes despite disruptions and impediments (Williams *et al.*, 2017). Evidence shows that flexibility norms positively and significantly impact relational outcomes in buyer–supplier relationships (Han *et al.*, 2014; Yu *et al.*, 2015). Flexibility norms are materialised through financial support instruments (trade credits, payment deferrals and rebate allowances), which aim to stimulate customer demand (Bastos and Pindado, 2013). However, the revenue-generating potential of such instruments is lower (due to the lower price charged and delayed payments), indicating that overall resilience might be lower. So the question remains: How can SMEs increase their resilience whilst nurturing existing customer relationships?

Inevitably, higher flexibility norms lead to a higher dependency of SMEs on the existing customer base. However, according to RDT, the scope of dependency is a critical boundary condition to assess the true nature of dependency. To this end, Casciaro and Piskorski (2005) indicate that firms can alleviate the resource dependencies from existing business relationships through unilateral power restructuring operations. Unilateral power restructuring refers to actions undertaken by single firms without consent from the other side. One of the ways to unilaterally use power restructuring is to nurture alternative relationships. As a form of power restructuring, firms can opt for a diversified customer base instead of a concentrated customer base, which has the potential to affect performance positively (Abdurakhmonov *et al.*, 2021). Higher customer concentration draws high financial dependency on the largest customers, which can demand more favourable terms and become more costly to serve than the rest of the customer base (Gosman and Kohlbeck, 2009). Evidence shows that financial dependence on the largest customers decreases a firm’s bargaining power, leading to lower performance (Kim, 2017) and resilience to disruptive events such as COVID-19 (Jiang *et al.*, 2023). Hence, the SMEs that can restructure their dependencies by having a more diversified customer base would witness higher resilience. In such cases, SMEs stretch financial dependence across more customer relationships. We thus offer two hypotheses for testing.



H4. SMEs with higher flexibility norms will be less resilient to crisis.

H5. SMEs with higher flexibility norms will be more resilient to the crisis if their financial dependence on the largest customer is lower.

## 4. Method

### 4.1 Research setting

This study focusses on the initial phase of the COVID-19 pandemic (March–May). In this period, governments provided a large number of funds via a set of public policies, which included: wage subsidies, fixed costs subsidies, subsidised loans, tax deferrals and guarantees (Ebeke *et al.*, 2021) and a freeze of the insolvency procedures (Dorr *et al.*, 2022). The goal of wage subsidies was to reduce firms' labour costs, enable firms to keep their firm-specific human capital and thus avoid the costs of hiring and training new employees in the initial recovery and longer-term (Dorr *et al.*, 2022). The total wage subsidies were substantial in the pandemic's first three months (March–May 2020), when € 774 million was channelled to approximately half a million employees and was comparable to wage subsidy programs in other EU countries in relative terms.

### 4.2 Data collection

4.2.1 *Study 1.* Study 1 uses cross-sectional data from the survey in testing H1 to H3. In the data collection process, we focussed on SMEs operating in B2B industries in Croatia. We opted for active SMEs with over ten and fewer than 250 employees. Eventually, our sample frame comprised 2,347 firms. The data collection started in mid-April, one month after the pandemic was declared (March 11). Critical informants for our study were senior managers who were thoroughly acquainted with all aspects of SME business operations, and this was confirmed through an additional set of questions in the survey. An online survey questionnaire supported the data collection, and an e-mail invitation with a corresponding link to the survey was sent out to senior managers. In the end, we received 225 useable responses resulting in a 9.6% response, which we consider satisfactory due to unfavourable conditions and uncertainty surrounding the COVID-19 pandemic.

In our sample, approximately 49% of informants were also active owners of the SME. Around 71% of SMEs in the sample belonged to various business services industries, whilst 29% mainly operated in manufacturing. On average, the sample SMEs had 42 employees and SMEs have been in business for 19.5 years. We tested for non-response bias by comparing the early and late respondents with crucial demographics such as firm age, size, sales revenues and industry classification. We found no significant differences, which led us to conclude that non-response bias does not threaten our study. Additionally, we decided to assess the representativeness by comparing the industry structure of our sample SMEs with that of the sample frame. Overall, our sample was highly representative of the overall sample frame.

4.2.2 *Study 2.* For study 2, we merged survey data with objective financial indicators and used it to test H4 and H5. Since the respondents were promised a brief report on the study results if they kindly provided their name and e-mail address in the survey, we identified 95 SMEs for which we collected objective data on return on assets (ROA) from the firm's financial reports. Objective financial data was collected from a database published by the National Financial Agency of the Republic of Croatia (FINA).

### 4.3 Measures

To measure our independent variable, *wage subsidy status*, we self-developed the question and asked informants whether their firm received a governmental grant for a wage subsidy

(0-No; 1-Yes). Similar operationalisation can be found in the literature (Um and Oh, 2020). We adapted the scale item from Palmatier *et al.* (2007) to measure flexibility norms: “*We set aside the contractual terms to help our business customers during the pandemic.*” We have added two items that cover trade credit provisions to business customers and additional rebate allowances to business customers. Overall, such operationalisation covers key financial instruments through which suppliers can manifest flexibility norms towards business customers during a crisis. We measured new product development (a proxy for innovation) and marketing communications capabilities (a proxy for branding) by adapting scale items from Vorhies and Morgan’s (2005) study.

Our model also envisions covariates that might theoretically affect SME’s flexibility norms during the crisis, namely: *firm size* (measured by the natural logarithm of the number of employees), *industry dummy* (services/manufacturing), *top manager’s expectations about COVID-19 duration*, *financial dependence on largest customer and customer retention orientation*. Item battery with respective anchors for all constructs and variables can be found in Table 1.

To measure SME resilience, we used the relative change in ROA in 2020 compared to 2019. We calculated the change as the difference between natural logarithms of ROA from 2020 to 2019, respectively. Such operationalisation draws from work by Certo *et al.* (2018), who found that traditional ratio measures can exhibit lower statistical power and inaccurate estimates. The more favourable change in ROA from 2019 to 2020 suggests that SMEs were more resilient to the adverse effects of the COVID-19 crisis. Similar operationalisations of resilience were recorded in prior literature (Cowling *et al.*, 2015; Iborra *et al.*, 2020). In study 2, we control for *firm size* and the *effect of the pandemic on the firm* (1-totally negative, 7-totally positive) to rule out alternative explanations of SMEs’ resilience.

## 5. Findings

### 5.1 Measurement model

Table 1 provides measurement model properties for our item battery, including the factor loadings, composite reliability (CR) and the average variance extracted (AVE) where applicable. Table 1 shows that all factor loadings exceed the cut-off value of 0.60 (factor loadings ranged from 0.64 to 0.92), CRs ranged from 0.78 to 0.89 and AVE ranged from 0.55 to 0.73. All CR and AVE values were above the established threshold of 0.70 and 0.50, respectively (Hu and Bentler, 1999), supporting the constructs’ reliability and convergent validity. We also conducted two discriminant validity tests. We first ensured that no significant cross-loadings amongst key constructs existed. Next, we assessed discriminant validity via traditional Fornell and Larcker’s (1981) criterion. We checked that the square root of the AVE in each reflective construct exceeds the correlations with other constructs (see Table 2). Table 2 also shows the means and standard deviations of the critical variables in our study. We addressed multicollinearity concerns by checking each independent variable’s variance inflation factor (VIF). Results show that each variable’s VIF values were below the recommended thresholds.

We assessed the model fit by conducting confirmatory factor analysis (CFA) with four constructs that are part of our model (flexibility norms, NPD capabilities, marketing communications capabilities and customer retention orientation). Overall, the CFA results show that our measurement model has an excellent model fit according to Hu and Bentler’s (1999) prescriptions:  $\chi^2(\text{pdf}) = 72.093 (48)$ ,  $p = 0.01$ , discrepancy divided by degrees of freedom (CMIN/DF) = 1.502, comparative fit index (CFI) = 0.983; Tucker–Lewis index (TLI) = 0.977; standardised root mean square residual (SRMR) = 0.049, root mean square error of approximation (RMSEA) = 0.047, LO 90 = 0.022, HI 90 = 0.069 and p of close fit (PCIOSE) = 0.562 > 0.05.

We took several steps to mitigate common method variance (CMV) threats. First, we informed respondents that there were no right or wrong answers and that they should

*Wage subsidy*

Did your company receive the COVID-19 governmental wage subsidy? (No [0] – Yes [1])

–

*Flexibility (CR = 0.83, AVE = 0.63)*

Please indicate the extent to which you have done the following activities in response to the upcoming crisis: (none [1] – to a great extent [5])

- |  |       |
|--|-------|
| 1. We redefined contractual terms in favour of our customers | 0.723 |
| 2. We provided additional payment deferral to our customers  | 0.871 |
| 3. We approved additional discount for our customers         | 0.786 |

*New product development capabilities (CR = 0.89, AVE = 0.73)*

Please rate how much the following marketing capabilities of your company are better or worse than your closest competitors: (much worse than our competitors [1] – much better than our competitors [7])

- |   |       |
|---|-------|
| 1. Ability to develop new products/services   | 0.913 |
| 2. Successfully launching new products/services                                       | 0.899 |
| 3. Ensuring that product/service development efforts are responsive to customer needs | 0.746 |

*Marketing communications capabilities (CR = 0.87, AVE = 0.70)*

Would you please indicate to what extent are following activities important in your firm's everyday business? (extremely important [1] – extremely unimportant [5])

- |  |       |
|--|-------|
| 1. Developing and executing advertising programs | 0.642 |
| 2. Managing corporate image and reputation       | 0.922 |
| 3. Brand image management skills and processes   | 0.920 |

*Customer retention orientation (CR = 0.78, AVE = 0.55)*

Please indicate how much you agree with the following statements: (Totally disagree [1] – Totally agree [5])

- |   |       |
|---|-------|
| 1. Our firm's strategy for competitive advantage is based on retaining valuable existing customers          | 0.752 |
| 2. Our competitive advantage depends largely on cross-selling and up-selling to our existing customers      | 0.708 |
| 3. Our firm has a clear strategic planning process to manage relationships with valuable existing customers | 0.766 |

*Firm size*

How many full-time employees your firm has?

–

*Industry dummy*

(manufacturing [0] – services [1])

–

*COVID-19 duration expectation*

According to your expectations, how long will the COVID-19 pandemic last? (it will end during the summer 2021 [1] – it will continue through 2022 [5])

–

*Financial dependence on largest customer*

Can you indicate the percentage of sales revenue coming from your largest customer? (0–100%)

–

**Source(s):** Created by authors**Table 1.**  
Item battery and  
measurement  
properties

respond frankly. The questionnaire items were scattered, so respondents could not make any connections between them. Second, we used a marker variable test. We chose the manager's self-efficacy measured by *respondents' problem-solving skills* for a marker variable (anchors: 1 – much better than other managers, 5- much worse than other managers). After identifying the lowest correlation with the flexibility norms ( $r = 0.002$ ;  $p = 0.981$ ), we partialled it out from our original bivariate correlations between the model's substantial variables and the results remained significant. These results give us confidence that CMV does not threaten our model's relationships.

	Mean	SD	1	2	3	4	5	6	7	8
Firm size	42.48	47.79	1							
Industry dummy	0.28	0.45	0.29**	1						
COVID-19 duration expectation	2.59	1.19	0.03	0.00	1					
Financial dependence on largest customer	31.05	24.70	0.00	0.10	-0.06	1				
Customer retention	3.77	0.91	0.06	0.01	-0.04	-0.01	1			
Wage subsidy	0.71	0.45	-0.02	0.12	0.06	0.06	-0.09	1		
New product development capabilities	4.82	1.24	0.05	0.04	-0.04	-0.06	0.36**	-0.07	1	
Marketing communications capabilities	4.63	1.33	-0.03	-0.08	-0.02	-0.14*	0.38**	-0.07	0.63**	1
Flexibility	2.56	1.00	-0.14*	-0.08	0.03	-0.04	0.12	0.13*	0.12	0.16*

**Note(s):** \*\* $p \leq 0.01$  and \* $p \leq 0.05$   
**Source(s):** Created by authors

**Table 2.**  
Correlation matrix

5.2 Model specification and hypotheses testing

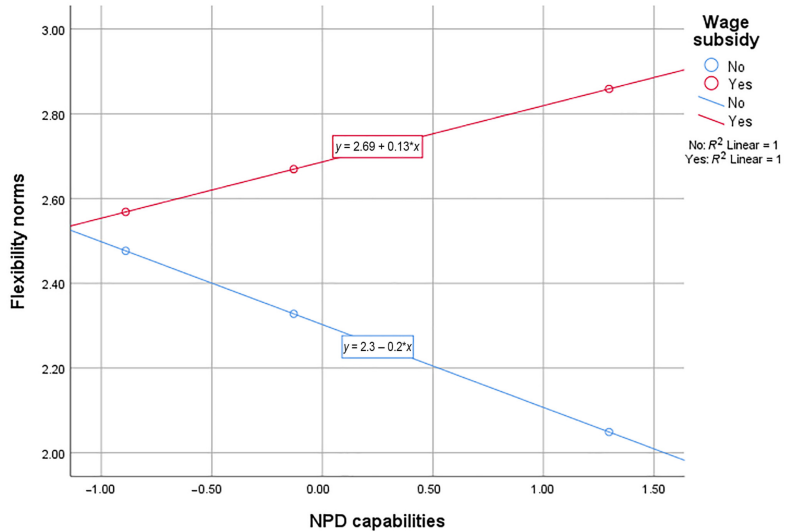
We used hierarchical regression in Statistical package for social sciences (SPSS) using tool for estimating regression models with mediation and/or moderation effects (PROCESS v4.1 macro) to test our hypotheses, which allows for simultaneous assessment of main and moderating effects (Hayes, 2018). We used the PROCESS Model 2 (with 5,000 bootstrap samples and 95% bias-corrected confidence intervals) for testing H1 to H3. Flexibility norms served as this analysis’s dependent (Y) variable (see Table 3).

According to Table 3, wage subsidies have a positive and significant direct effect on flexibility norms, thus supporting H1 ( $\beta = 0.40, p < 0.01$ ). The moderating effect of NPD capabilities shows a positive and significant effect ( $\beta = 0.31, p < 0.01$ ), leading to the acceptance of H2. Similarly, the moderating effect of marketing communications capabilities has been tested. Results show a statistically significant negative interaction effect ( $\beta = -0.39, p < 0.01$ ), leading to the acceptance of H3. The model showed a satisfactory level of variance explained in the dependent variable ( $R^2 = 0.1279$ ). To further illuminate the moderating effects and make hypotheses judgements, we design interaction plots in Figure 2.

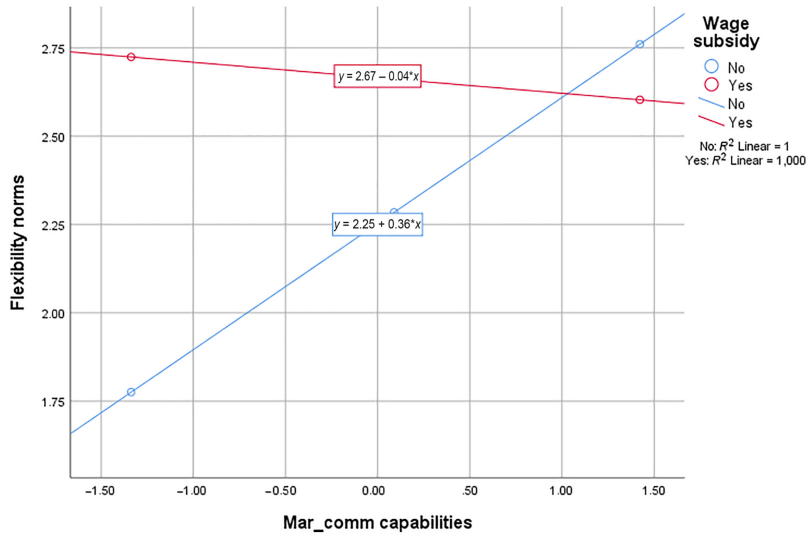
Relationship	B (SE.)	LLCI	ULCI	R <sup>2</sup>
Dependent variable: Flexibility norms				
<i>Main effects</i>				
Wage subsidy	0.4086 (0.150)**	0.1124	0.7048	0.1279
NPD capabilities (NPD)	0.0282 (0.0700)	-0.1098	0.1662	
Marketing communications capabilities (Mar_comm)	0.0506 (0.0671)	-0.0816	0.1829	
<i>Two-way interactions</i>				
Wage subsidy * NPD	0.3198 (0.1587)**	0.0068	0.6328	
Wage subsidy * Mar_comm	-0.3957 (0.0671)**	-0.6813	0.1102	
<i>Controls</i>				
Firm size	-0.0930 (0.0705)	-0.2320	0.0460	
Industry dummy	-0.1505 (0.1542)	-0.4546	0.1536	
COVID-19 expectations	0.0383 (0.0552)	-0.0705	0.1471	
Financial dependence on largest customer	-0.0016 (0.0028)	-0.0071	0.0038	
Customer retention orientation	0.1023 (0.1102)*	0.0175	0.3169	

**Note(s):** PROCESS Model 2 with 50,000 bootstrap samples and 95% CI; B = unstandardised coefficient; SESE = standard error; LLCI-ULCI = lower/upper-level confidence interval, \*\* $p < 0.01$  and \* $p < 0.05$   
**Source(s):** Created by authors

**Table 3.**  
Results of the moderated regression model



(a)



(b)

**Figure 2.** Moderating effect of (a) NPD capabilities and (b) marketing communications capabilities on wage subsidy – flexibility norms relationship

Source(s): Created by authors

Figure 2 shows that NPD capabilities drive higher, whereas marketing communications capabilities drive lower flexibility norms amongst SMEs receiving wage subsidies. Simple slope analyses reveal that wage subsidies significantly influence flexibility norms at the high and medium value of NPD capabilities and the low and medium variables of marketing communication capabilities. Finally, findings concerning control variables indicate that none of the effects is significant except customer retention orientation which shows a positive and significant effect ( $\beta = 0.10, p < 0.05$ ) on flexibility norms.

To test the H4 and H5 (study 2), we conducted a moderation model with flexibility as independent, financial dependence on the largest customer as moderating and resilience as the dependent variable. We used SPSS PROCESS Model 1 with one moderator. Results show that the direct effect of flexibility on SME resilience is negative and marginally significant ( $\beta = -0.26, p < 0.10$ ; lower limit confidence interval (LLCI) =  $-0.5806$  and upper limit confidence interval (ULCI) =  $0.0479$ ), whereas financial dependence on the largest customer negatively and significantly moderates the main effect ( $\beta = -0.01, p < 0.05$ ; LLCI =  $-0.0261$  and ULCI =  $-0.0020$ ). With rising financial dependence on the largest customer, the impact of flexibility norms on resilience becomes more negative (see Figure 3). The overall variance explained in the dependent variable was  $R^2 = 0.1611$ . The impact of controls was insignificant. This leads to the acceptance of H4 and H5.

To check for the robustness of our findings from H4 and H5, we substituted ROA with sales-based dependent variables for measuring resilience. We used sales revenue change as a sales-based measure of resilience and the results were similar. The main ( $\beta = -0.06, p < 0.10$ ; LLCI =  $-0.1473$  and ULCI =  $0.0145$ ) and interaction effect ( $\beta = -0.01, p < 0.05$ ; LLCI =  $-0.0068$ , ULCI =  $-0.0002$ ) remained negative. Overall, this analysis gives us confidence that our initial findings from study 2 are robust to alternative operationalisations of resilience.

5.3 Endogeneity checks

Selection into receiving a wage subsidy is not random. SMEs receiving a wage subsidy might have systematically worse outcomes than those not. To solve this endogeneity issue, we conduct inverse probability weighted regression analysis (IPWRA) and nearest neighbour matching (NNM) using Mahalanobis distance (Cattaneo et al., 2013; King and Nielsen, 2019; Srhoj and Walde, 2020). IPWRA starts with a logit regression to model the probability of receiving a wage subsidy. We do so by controlling for 14 sectors, the effect of the pandemic on the firm, firm age, number of employees, foreign ownership dummy, the share of exports in total revenue and customer retention orientation. After obtaining the treatment probability, IPWRA uses the treatment probability as weight in the second regression, where flexibility is

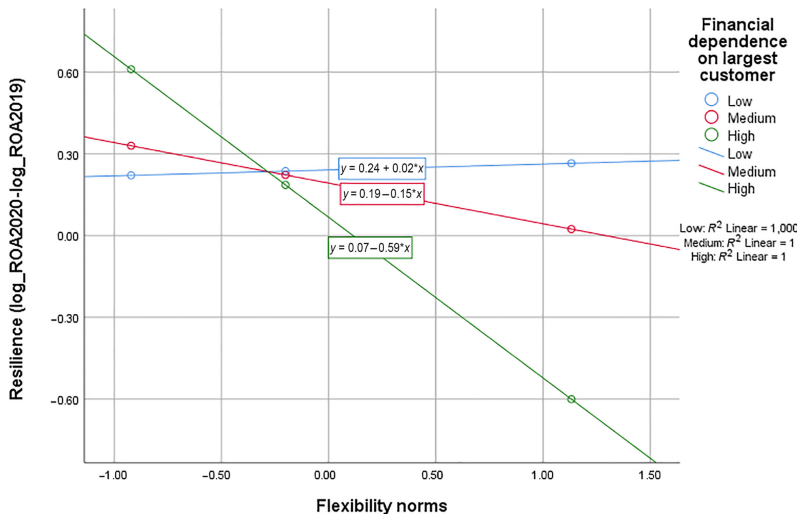


Figure 3. Moderating effect of financial dependence on largest customer on the flexibility norms – resilience relationship

the outcome. Results (Table 4; column 1) show a statistically significant positive effect of receiving a wage subsidy on an SME's flexibility norms.

A recent review of public grant evaluation studies in the EU (Dvouletý *et al.*, 2021) shows that most evaluations use matching procedures to solve endogeneity issues surrounding the non-random allocation of grants. Therefore, we run three matching procedures to find twin firms by using distance in variables across firms receiving and not receiving wage subsidies. Once these twin firms were found, balancing property checks were conducted and no statistically significant differences in means between the two groups were found [1]. Finally, and most importantly, average treatment effects on the treated (ATT) are estimated with three samples of matched firms, all pointing to a statistically significant positive effect of wage subsidy on flexibility norms (Table 4; columns 2, 3 and 4).

## 6. Discussion

The advent of COVID-19 left practitioners and scholars questioning whether firms are well prepared to deal with the crisis and its aftermaths. In comparison, mainstream academic research has developed models on how firms can cope with crises (Trahms *et al.*, 2013), but more work needs to be conducted on whether firms should leverage existing business relationships to overcome the crisis. Up so far, a dearth of studies focussed on whether nurturing these relationships increases SMEs' resilience to crisis (Mora Cortez and Johnston, 2020; Ozanne *et al.*, 2022).

COVID-19 paved the way for greater solidarity and mutuality, which became a prime public discourse during the pandemic. Whilst literature showed that governmental measures were helpful to focal SMEs, there was a lack of research on how receiving subsidies influenced their behaviour towards supply chain partners. In building our theoretical position, we utilise RDT and argue that the wage subsidy program initiated government-firm resource dependencies. Governments exercised power due to the provision of subsidies that would help the private sector control excess labour costs due to shrunk demand. Previous research showed that in such cases, the firm's locus of attention is towards fulfilling formal and informal expectations of the Government (Ghobadian *et al.*, 2022; Yi *et al.*, 2021). Whilst the Government does not intend this power, the SME's shift of attention towards helping their customers was a mutual goal. The results of our study show that SMEs that received wage subsidies were also willing to exhibit higher flexibility norms. In this line of reasoning, our findings complement earlier literature that discussed concepts such as supplier empathy (Brandon-Jones *et al.*, 2010), in which firms need to be cognisant of COVID-19 disruptions beyond the boundaries of the focal firm. This research also reflects findings on the importance of financial flexibility in buyer-supplier relationships (Astvansh and Jindal, 2022; Liu *et al.*, 2020), especially during economic crises and upheavals (Bastos and Pindado, 2013).

	Dependent variable: Flexibility norms			
	Model (1)	Model (2)	Model (3)	Model (4)
Wage subsidy ATT	0.390*** (0.135)	0.431** (0.185)	0.441** (0.202)	0.452** (0.186)
Observations	226	130	116	124
R <sup>2</sup>	0.036	0.041	0.040	0.046

**Table 4.**

Robustness check:  
Matching and inverse  
probability weighted  
regressions results

**Note(s):** \* $p < 0.1$ ; \*\* $p < 0.05$  and \*\*\* $p < 0.01$ . Model 1 is inverse probability weighted regression. Model 2 is Mahalanobis matching without replacement. Model 3 is Mahalanobis matching with replacement. Model 4 uses Model 2 as basis but exact matches on sector

**Source(s):** Created by authors

In addition, our study reveals the conditional effects of how cost savings from wage subsidies are transformed into flexibility norms. Here we find differences between SMEs due to their idiosyncratic competitive profile (proxied through marketing capabilities). Employing the behavioural additionality approach, we observe different intensities of flexibility norms amongst SMEs that nurture innovation vs branding. The findings indicate that subsidies increase the flexibility norms for SMEs that build their competitive profile around innovation. Such SMEs know that investing in business customers' financial health will increase the potential for new product commercialisation (O'Cass and Sok, 2012).

On the other hand, SMEs driven by branding do not depend so much on subsidies to increase their flexibility norms. In these SMEs, maintaining relationships with existing customers and their retention is the primary goal and imperative through which they are willing to be at a loss (Chang *et al.*, 2021). Also, considering the theoretical mechanism of behavioural additionality, our study confirms that public subsidies influence behavioural changes in which firms show higher flexibility norms towards business customers because stabilising sales revenues during demand disruptions becomes a priority. However, the behavioural additionality mechanism plays out differently due to the extra attention of SMEs with distinct competitive profiles. Hence, our results support the logic found in earlier literature that firms, especially SMEs, that focus on innovation *vis-à-vis* branding have different business models (Merrilees *et al.*, 2011; Ngo and O'Cass, 2012). In this way, the results of our study are complementary to those findings that confirm that public subsidies encourage more assertive behaviour towards prioritised organisational goals (Hsu and Hsueh, 2009). These findings also echo insights from group management literature that show that two different COVID-19 crisis perspectives might have resulted in different stances towards helping customers (Shoss *et al.*, 2021).

Our study also sheds some preliminary insights on how flexibility norms drive resilience. Since flexibility norms create dependency by binding resources to maintain existing customer relationships, they can endanger resilience measured as ROA change. However, this can be mitigated by extending the SME's dependencies scope, in other words, by having a more diversified customer base. Here we reflect on findings from previous studies showing that dependence on fewer customers can impede a focal firm's performance (Kim, 2017; Elking *et al.*, 2017), especially during supply chain disruptions (Jiang *et al.*, 2023).

## 7. Conclusions

### 7.1 Theoretical implications

The theoretical implications of our study are reflected in the following areas. First, our study responds to researchers' call to explore the impact of public subsidies on creating resilient supply chains (Craighead *et al.*, 2020; Micheli *et al.*, 2021). In doing so, we extend RDT in government-firm relationships (Yi *et al.*, 2021; Abdurakhmonov *et al.*, 2021) and show how resource dependencies initiated through wage subsidies can positively impact SMEs' decision to exhibit higher flexibility norms. In addition, our study tangentially contributes to supply chain finance literature (Chakuu *et al.*, 2019; Liu *et al.*, 2020).

Second, our study further tests whether this effect holds for SMEs with different competitive profiles by borrowing arguments from behavioural additionality. We emphasise that besides R&D, other public subsidies can also lead to significant changes in the behaviour of firms. This advances the research on behavioural additionality, which has been conducted exclusively in the context of R&D grants and subsidies (Clarysse *et al.*, 2009; Meuleman and De Maeseeneire, 2012).

Our third and final contribution is illuminating the role of existing customer relationships on SME resilience during crises. We thereby show that safeguarding existing customer relationships can increase resilience if SMEs avoid having a highly concentrated customer



base. Consequently, our findings also advance crisis management literature by showing that a perseverance response strategy (being flexible) to crisis (Wenzel *et al.*, 2021) can be an effective means of achieving SME resilience (Miklian and Hoelscher, 2022).

### *7.2 Policy and managerial implications*

Our study also delivers some important implications for policymakers in making public instruments such as subsidies and grants more effective in dealing with crises and their economic aftermath. First, our study's findings indicate that policymakers should implement more effective communication strategies to create greater awareness of the goals of public policy measures. Indeed, the goals were to preserve economic activity, but according to our findings, measures had a broader implication in creating resilient buyer–supplier relationships. Consequently, endorsing such a communication strategy would convince the firm that the economic well-being of their supply chain partners impacts theirs. However, our findings refute this “one size fits all” approach and indicate that the unique needs of SMEs might differ.

These findings also point us towards asking whether the allocation of wage subsidies to branding-driven SMEs wastes resources from the perspective of creating more resilient supply chains. One might argue that this is true and that such SMEs were “selfish” (Fisman *et al.*, 2015) and redirected wage cost savings in areas that were more self-centred (Shoss *et al.*, 2021; Sirola and Pitesa, 2017). These occurrences necessitate a more proactive approach to designing future policy instruments also directed towards such firms. For instance, wage subsidies have proven efficient, but other grants might better serve different SMEs.

Our study also delivers some noteworthy guidelines for managers. We show that higher flexibility norms increase resilience when SMEs restructure their dependencies to ensure no high financial dependency from customer concentration. Managers should take on board these insights and work towards lowering dependency on major customers during supply chain disruptions. This can be done by restructuring the customer base and looking for alternative customer relationships through customer acquisition. Such a strategic option would entail engaging in marketing activities to attract new customers contributing to the argument that such investments are beneficial during crises. In such a way, SMEs might lessen the pressure on the largest customers and offset the loss of sales revenues sacrificed to sustain valuable customer relationships through flexibility norms.

### *7.3 Limitations and suggestions for further research*

Besides providing novel insights into the buyer–supplier relationships during COVID-19, our study also bears some limitations that must be acknowledged. Firstly, our study 2 comprised only limited sample size ( $n = 95$ ) and provides exploratory and preliminary insights into the relationship between flexibility norms and increased resilience. All our empirical attempts found a statistically significant positive relationship between flexibility norms and resilience; however, given the limited sample size and available research design, we refrain from making causal statements but interpret our results from study 2 as positive associations. Future studies should introduce more complex models with larger samples.

Secondly, whilst flexibility norms might differ across different types of relationships the supplier has within its customer base, our ambition was not to investigate the differential treatment (some customers always get better terms than others). Instead, we were interested in changes compared to business as usual by monitoring the increased usage of these instruments due to COVID-19. In that case, the flexibility norms remain specific across differential customer relationships, and an exciting avenue for future research is to see potential changes in flexibility policies between different customer groups.

Thirdly, our study was executed during the first several months of the pandemic when the uncertainty peaked. However, the new normal was returning to the old normal due to the vaccine rollout and diminishing effects of earlier versions of the virus. It would be interesting to investigate in a longitudinal design whether the flexibility norms persisted and whether suppliers abandoned them during the later stages of the pandemic. Future studies could examine the partners' commitment to sustaining business relationships due to these disruptions.

Finally, we focussed on buyer-supplier interaction during crises by arguing that solidarity prevails over possible asymmetric dependence configurations based on power imbalances in such a case. However, our analysis focusses on suppliers' relationships with business customers due to resource dependencies created through subsidies in firm-government relationships, thus limiting our findings' potential generalisability. In business practice, there might be variations in specific buyer-supplier relationships where asymmetric dependencies occur due to existing power imbalances and are sustained even during crises (Cho *et al.*, 2019).

#### Note

1. Since IPWRA and NNM are robustness checks, for brevity reasons, we make first-stage logit and balancing property checks (*t*-tests in means, jitter plots and standardised differences in means available upon request).

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