

## **Supply chain resilience, organizational well-being, and sustainable performance:**

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### **Abstract**

The recent health crisis has challenged the resilience of small and medium-sized enterprises (SMEs), leading to the adoption of organizational flexibility practices and cost-effective digital technologies to navigate through constraints imposed by restrictions and lockdowns. Applying insights from the Practice-based view and evolutionary theory, we demonstrated that these novel practices contribute to the evolution of supply chain resilience, enhancing its performance. Furthermore, aligning with a transformative supply chain mindset, our study emphasized the importance of incorporating organizational well-being into the ongoing evolution of supply chain resilience. Employing a survey as the research strategy, we focused on SMEs as the unit of analysis in the UK and France, [allowing the comparison of the proposed resiliency framework between the two countries.](#)

**Keywords:** organizational flexibility, cost-effective technology, well-being transformative supply chain, resilience practice evolution, small-medium enterprise.

## 1 Introduction

Small and Medium-sized Enterprises (SMEs) contribute significantly to global business, employment, and GDP (BEIS, 2020; OECD, 2017). However, they are vulnerable, especially during crises like COVID-19. The pandemic tested SMEs' resilience, with many relying on government support to avoid bankruptcy (Maadini & Hadjibeyli, 2022). McKinsey & Company reported over 60% experiencing revenue reduction after COVID-19 and fear their future operations (Dimson et al., 2020).

To support businesses in navigating uncertain circumstances, it is widely acknowledged that they have adapted by embracing organizational flexibility and remote work, coupled with the integration of cost-effective digital technologies, such as e-commerce platforms, during challenging times. These adaptable practices are not only replicable but also accessible to the public. Hence, we employed the Practice-Based View (PBV) (Broemer et al., 2019; Bromiley & Rau, 2014) as the conceptual framework to explore the impact of these practices on Supply Chain (SC) resilience. Furthermore, considering the evolutionary perspective (Nelson, 1985), organizations are viewed as collections of dynamic and evolving routines. As a result, our primary research question is: *Can organizational flexibility and the adoption of cost-effective digital technology be regarded as practices fostering SC resilience and enhancing overall performance?*

During the pandemic, it revealed that maintaining organizational well-being to keep companies functioning during disruption is crucial (Ahmić, 2022). The positive effect of employee well-being on resilience has already been observed by Vargas and Gonzalez (2016) however, the role of well-being in developing resilience capability is still overlooked (Gerschberger et al., 2023). [In this same line, Mollenkopf et al. \(2021\) and Wieland \(2021\) proposed the term transformative SC. They recommended more radical modifications, such as looking into employee well-being and cross-level interactions in response to threats and disruptions.](#)

By considering the necessity of more investigation into the role of well-being in supply chain resilience (Gerschberger et al., 2023), the second research question is: *Can organizational well-being be considered part of SC practices and positively impact performance?*

The impact of COVID-19 on countries varied, with governments adopting different strategies and companies exhibiting diverse performances across European nations (Do et al., 2021). The situations in France and the UK due to Brexit make them distinct within the SME context. In the UK, SMEs adopted a cautious "wait-and-see" approach in response to new trading policies and potential supply disruptions (Roscoe et al., 2020). In contrast, SMEs in France could rely on support from the European community. Hence, the third research question examines the resilience framework's applicability in both countries to contribute to SME development.

This study offers a twofold contribution. Firstly, it illustrates the evolution of SC resilience using the Practice-Based View, demonstrating that organizational flexibility and cost-effective digital technologies positively impact resilience. Secondly, it empirically supports the transformative mindset, highlighting the positive impact of organizational well-being on SC resilience and social performance. The research used a survey strategy, gathering data from SMEs in the UK and France, employing partial least squares (PLS) as the statistical method.

The current manuscript is organized as follows: it begins with an introduction, followed by the conceptual framework. The subsequent section describes the methodology. Then, we present and discuss the results and conclude the manuscript with the final considerations chapter, which includes potential suggestions for future research.

## **2 Conceptual framework and hypotheses**

When choosing a theoretical framework for assessing firm performance, the widely known Resource-Based View (RBV) posits that valuable, rare, inimitable, and non-substitutable resources develop critical capabilities for lasting competitive advantages (Lockett et al., 2009). Since we focused on imitable and publicly known practices, such as cost-effective digitalization with tools like Zoom, adopting home office, or implementing multiple sourcing in SC management, the Practice-Based View (PBV) seems more adequate than RBV in our context. Moreover, we focused on the firm performance variation rather on lasting competitive advantages.

Complementing PBV, we integrate the evolutionary theory, which views organizations as bundles of practices evolving through selection forces. This conceptual framework aligns well with the recent COVID-19 pandemic, offering a pertinent perspective on organizational evolution.

## *2.1 Practice-based view and evolutionary theory*

The PBV, introduced by Bromiley and Rau (2014, 2016), stands as an alternative to the RBV in explaining strategic decisions and consequent variations in firm performance. In contrast to RBV's focus on sustainable competitive advantages derived from inimitable, valuable, and scarce resources, PBV centers on the impact of imitable and publicly available practices. PBV has been utilized to identify inter and intra-organizational practices aiding companies in addressing natural disaster situations (Silva et al., 2018). Carter et al. (2017) has incorporated PBV and Relational View to propose the supply chain practice view (SCPV), which analyzes dyads or company networks by emphasizing relational practices. Broemer et al. (2019) extended PBV and SCPV to map essential practices such as identifying, monitoring, supplier selection, joint development, enhanced communication, and transparency for developing a sustainable chemical SC.

When observing the bundle of organization practices over time, it is expected that they could adapt and change. Silva et al. (2018) exemplifies that contingent factors like market regulation or technological availability can facilitate modification in existing practices or the emergence of new ones. Furthermore, the notion of changes in the pool of organizational practices over time finds support in the Evolutionary Theory.

From the evolutionary perspective, organizations are essentially composed of routines and practices. They give predictability and consistent behavioral patterns functioning as the genes of living beings (Nelson, 1985, p. 14). Like a living organism's genetic modifications, changes in organizational practices could be intentional or accidental, triggered by context-specific or internal pressures (Dosi & Nelson, 1994). Afterward, selection and retention forces act on these variabilities, defining the evolution direction (Dietz et al., 1990).

According to Lozano et al. (2015), despite profit motivation, companies are viewed not merely as profit maximizers but as entities striving to better align with their environment compared to competitors. Economically, companies that better fit the market are expected to be more profitable, driving less profitable companies out of the industry. By integrating Evolutionary Theory and PBV, one can analyze how organizational practices impact performance and adapt over time in response to contextual changes, contributing to corporate survival.

## *2.2 Practice-based view of supply chain resilience*

SC resilience is a company's capability to respond to unforeseen events that threaten its survival by adapting and transforming effectively (Pettit et al., 2019). There are three major SC resilience phases: readiness, responsive, and reactive (Jüttner & Maklan, 2011), where each stage requires different organizational routines. The readiness phase establishes redundancy and situational awareness, while the responsive phase emphasizes collaboration and flexibility, and the reactive phase involves managing disruptions as they occur. Ali et al., (2017), through a structural literature review, also noted similar phases: pre-, during, and post-disruption, each focusing on specific practices.

There are several strategies and practices to enhance SC resilience. They are often imitable and publicly accessible. Pettit et al.'s influential work (Field 2010) outlines 12 critical capabilities for resilience, each comprising numerous practices. For instance, flexibility in sourcing suggests practices like engaging multiple suppliers and cultivating alternative sources for critical inputs. Raj et al. (2022) proposed short and long-term practices related to supply-side capabilities, such as supplier collaboration and risk management; logistics and storage capabilities like vehicle tracking, IoT utilization, and autonomous vehicles; and demand-side capabilities like promoting accurate product information, fostering customer collaboration, partnerships, and loyalty. By studying the Chinese e-commerce platform JD.com, Shen and Sun (2023) highlighted that practices involving digital platform utilization and big data analysis could mitigate the disruption's impact, enhancing resilience. Additionally, Lotfi and Sodhi (2022) explored, through PBV, how agile-only, resilient-only, and shared practices could influence performance.

In summary, while past studies have slightly varied in their practices delineation aiming at resilience, they can generally be categorized into routines associated with flexibility, agility, adaptation, risk management, anticipation, recovery, trust, collaboration, and information sharing (Ali et al., 2017; Ribeiro & Barbosa-Povoa, 2018). Consequently, this study will align with practices proposed by Pettit et al. (2010).

## *2.3 Evolutionary view of supply chain resilience*

Evolutionary theory posits that changes in organizational practices and routines are inherent (Dietz et al., 1990; Nelson, 1985); therefore, resilience is not a static but a dynamic bundle of continuously evolving practices where organizations could increase,

preserve, or reduce assets and practices in response to their interactions with the business context, striving for a better fit (Wieland & Durach, 2021).

In the aftermath of the COVID-19 crisis, it was observed that the pandemic accelerated the adoption of cost-effective technology, like video conferencing and online platforms for ordering (OECD, 2021b). These digital transformations facilitated remote work, enhanced communication, order management, and reduced disruptions. They also replaced repetitive tasks, such as order-taking, improving organizational efficiency, and allocating resources to SC functions (Martínez-Caro et al., 2020). Moreover, digital technologies could also help firms to reassess global sourcing strategies and cross-organizational collaboration, particularly after facing critical materials shortages during the COVID-19 (Merino et al., 2021).

Post-COVID-19 research in SC resilience has shifted the paradigm, with digitalization leading the way (Balakrishnan & Ramanathan, 2021). For instance, Faruquee et al. (2021) proposes that even the most straightforward digital changes, such as internal messaging and shared ERP dashboards, enhance joint problem-solving and SC resilience. Küffner et al. (2022) supports this view, highlighting the crucial role of digital technologies in reshaping business routines and structures and bolstering SC resilience through increased agility and robustness. Despite the pandemic's significant damage, it acted as a game changer for SMEs' by accelerating their digital transformation (OECD, 2021b). While the full impact of digital technologies on SC resilience is not fully understood, ongoing studies recognize their potential and relevance in the SC resilience (Ivanov et al., 2018; Queiroz & Fosso Wamba, 2019; Ralston & Blackhurst, 2020).

Upon examining the routines that emerged during and remained after the pandemic (Boland et al., 2020), several of them emphasize redundancy and dispersion (having multiple suppliers and managing inventory), organizational flexibility (home office), and operational processes digitalization with improved communication. Based on this premise and by assuming that SC resilience practices should adjust to face external pressure, we hypothesized that organizational routines (Boland et al., 2020; Lund et al., 2021), such as organizational flexibility and cost-efficient digitalization, will positively impact SC resilience, hence proposing:

H1: Organizational routines adopted during and after the pandemic positively affect SC resilience.

#### *2.4 Evolutionary view of organizational well-being and supply chain resilience*

It is reasonable to assume that an employee who is happy and healthy within the organization will be less stressed and, consequently, more adaptable during challenging periods for the organization. Through various methods, prior research has supported this intuitive thought. They suggest that the key to an organization's resilience is the resilience of its individuals. According to Kuntz et al. (2017), resilient employees possess the capacity to endure and adjust to adversity, contributing to the overall resilience of the organization.

To enhance employee resilience, Vargas and Gonzalez (2016) emphasized its connection with labor well-being, including income, perceived security, and health. Kuntz et al. (2017) recommend building employee resilience through initiatives that value employees, such as recognition, well-being, and workplace civility programs. These initiatives, focusing on individual needs, are integrated into daily routines, ensuring well-being and contributing to organizational goals. Gerschberger and Ellis (2023) emphasized the importance of individual capacity to adapt and resist stress for system resilience. This capacity depends on intraindividual, interpersonal, and socio-ecological factors. They recommend an employee-centric approach, placing high value on employees, training and empowering, and providing psychological safety. Similarly, Lin et al. (2023) highlighted the importance of a people-centric approach to achieve supply chain resilience, involving employee health and safety, mental well-being, and managing new working modes. Reyna-Castillo et al. (2022) posit that proper working conditions, labor rights monitoring, and occupational health and safety policies positively correlate with supply chain resilience.

These perspectives are aligned with the recommendations of Mollenkopf et al. (2021), who advocated the transformation of traditional corporate environments to incorporate safety measures, flexible work arrangements, and physical separations to enhance well-being and resilience. Similarly, Wieland (2021) proposed a change from the engineering-centric perspective to a more socio-ecological understanding that recognizes SCs' complex nature.

In summary, employee resilience is crucial for building resilience in the face of supply chain disruptions (Gerschberger et al., 2023). This can be achieved through health and well-being initiatives that address employee workload, balance professional and personal life, offer a flexible workplace, and provide adequate training. These practices have

proven effective, and reports from practitioners suggest that organizational flexibility can significantly improve employees' quality of life, especially in the post-pandemic era (Boland et al., 2020).

Consequently, we hypothesize that organizational well-being should be considered an antecedent of SC resilience, and organizational flexibility could be seen as a practice of well-being.

H2: Organizational routines adopted during and after the pandemic positively impact well-being.

H3: Organizational well-being positively impacts SC resilience.

### *2.5 Supply chain resilience, organizational well-being, and performance*

Various methods and variables have been employed to assess SC performance. Previous studies have predominantly focused on traditional performance, such as profitability ratios, return on assets (ROA), market value ratio, and competitiveness (Brozovic, 2018; Fairbank et al., 2014; Yang, 2012).

Chowdhury et al. (2019) suggested that relational practices, such as trust, cooperation, and commitment, positively mediate the relationship between SC resilience and performance. Piprani et al., (2020) indicated that SC resilience, by absorbing disruption and recovery, positively impacts cost and customer service performance; Ruel and El-Baz (2023) noted that SC resilience plays the mediating role between disaster readiness and firm performance, and Zahari et al., (2022) reviewed the role of leadership capabilities in the relationship between organizational performance and organizational resilience. In line with earlier studies, we expect the same positive impact of SC resilience on performance by proposing the following hypothesis:

H4: SC resilience positively impacts organizational performance.

Concerning the performance indicator, Jun and Rowley (2014) mentioned that using exclusively financial metrics for evaluating SC performance might imply potential limitations in capturing the full spectrum of organizational performance. Moreover, few studies have explored the relationship between SC performance and social dimensions, specifically in the new context (Aguiar-Quintana et al., 2021; Feng & Savani, 2020). In



response to this advice, the current study adopted the three dimensions of organizational performance: economic, social, and environmental.

Concurrently with investigations linking SC resilience and performance, scholars have explored the effects of organizational well-being on performance. In an extensive literature review, Van De Voorde et al. (2012) found that 60% of the reviewed papers demonstrated a positive influence of employee well-being on organizational performance. For example, employee happiness positively impacts operational and financial performance, while stress reduction does not significantly affect performance. Supporting these findings, Huetterman and Bruch (2019) identified that enhancing organizational well-being improves performance by reducing collective emotional exhaustion and increasing collective engagement. Peccei and Van de Voorde (2019) emphasized the inconsistent relationship between organizational well-being and performance, proposing three mutual gain models among several others. For this study, we adopted the mediation model, and we hypothesized:

H5: Organizational well-being mediates the impact of routines on organizational performance.

To summarize our theoretical discussion, Figure 1 illustrates the proposed conceptual framework.

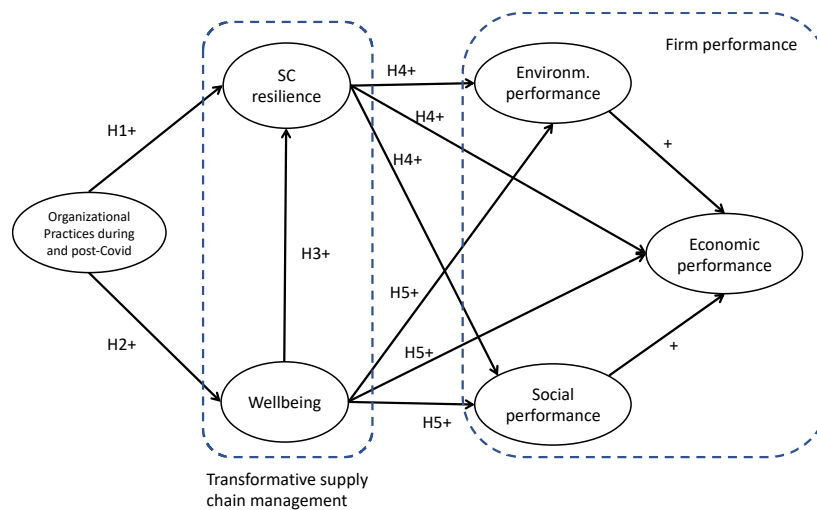


Figure 1 - Proposed model

### 3 Methodology

Given this study's exploratory nature, we employed the survey research strategy, utilizing the PLS Modelling approach through SmartPLS 4.0 (Hair et al., 2011) for data analysis. The questionnaire was adopted from past studies and translated into local languages to prevent misunderstanding. To mitigate common method bias and enhance the validity and reliability of self-reported items, we randomized the questions and incorporated open-ended formats. (Podsakoff et al., 2012). Qualtrics Sampling service was used to collect data, targeting supervisors, managers, and SME owners in the UK and France. A sample of 20 responses was provided by Qualtrics' service to pre-test and evaluate the questionnaire's quality, comprehensiveness, and logical flow. Screening questions were included to ensure respondents' qualifications, allowing only those with a solid understanding of their company's business strategy and operations to participate in the study.

### *3.1 Variable descriptions and measurements*

To operationalize the conceptual model, we adopted and adjusted the variables used in prior studies. Organizational routines, well-being, and performances were based on Dey and colleagues (Dey et al., 2020, 2023; Williams & Snow, 2012), while SC resilience was based on Pettit et al., (2010). The close-ended questions of the survey used a 5-point scale; the higher the rating, the higher the construct levels.

#### *Organizational routines:*

This construct measures the practices used to navigate lockdown restrictions during the pandemic. According to reports and academic investigations, companies focused on two key components: organizational flexibility and cost-effective digital technology adoption (Boland et al., 2020; Lund et al., 2021; W.H.O., 2021). Therefore, we adapted existing questionnaires to measure these two concepts (Appendix A) (Dey et al., 2020, 2023; Williams & Snow, 2012). The first refers to organizational structures, such as flexibility in the working environment, RH support, and organizational processes. The latter involves adopting flexible, modular, cost-effective, and dependable digital technologies. These technologies are efficient and reliable without requiring substantial budget allocations, such as adopting virtual meeting platforms, goods delivery, and e-business platforms, which benefit small companies.

*SC resilience:* We operationalized SC resilience as a second-order variable composed of flexibility (sourcing), recovery (to recover after a disruption), anticipation (to identify

the risk and anticipate disruption), and adaptability (to change according to the situation) (Pettit et al., 2010)

*Organizational Well-being:* Organizational well-being is assessed based on employees' quality of life, including health, happiness, comfort, and tranquility while working (Yu et al., 2021). We used a first-order construct with five items that measured happiness, learning, compensation, reward, and working environment.

The three independent performance dimensions to measure organizational performance are environmental, social, and economic.

*Environmental performance:* This performance dimension is related to the ecological aspect, such as CO2 emission, waste reduction, energy reduction, etc.

*Social performance:* This performance dimension aims to measure the learning, health, and safety of the employees in the company, as well as absenteeism, turnover, and CSR.

*Economic performance:* As the name indicates, this dimension aimed to measure the financial and economic outcome of the organization; we measured items such as production output, growth, productivity, competitiveness, and cost reduction.

### 3.1.1 Measurement model

Our conceptual model comprises four first-order variables (Well-being, economic, social, and environmental performance) and two second-order latent variables (Organizational routines, SC resilience – Appendix A). This study adopted a disjoint two-stage approach to assess the variables' validity (Agarwal & Karahanna, 2000; Becker et al., 2012; Sarstedt et al., 2019). In the initial stage, the measurement model's reliability, convergent, and discriminant validity were assessed with all lower-order constructs. The factor loadings of items for low-order constructs ranged from 0.578 to 0.910, exceeding the recommended threshold of 0.5 (Hair et al., 2014) (See Appendix B). Simultaneously, multicollinearity indicators were computed, with all VIF below the threshold of 3.3 (Kock, 2015).

Cronbach's alpha and composite reliability (CR) were computed for reliability assessment. Cronbach's alpha varies between 0.678 and 0.906, and CR ranges from 0.824 to 0.926. Despite the lowest Cronbach's alpha being 0.678, it is very close to the limit value of 0.7 (Hair et al., 2011; Henseler et al., 2009; Popadiuk, 2012), hence we considered it acceptable.

Convergent validity was confirmed with AVE values above 0.5, ranging from 0.572 to 0.766 (Bagozzi et al., 1991; Fornell & Larcker, 1981). The Fornell-Larcker criterion was used for discriminant validity, indicating no significant issues, as the square root of the AVE for each first-order construct exceeded its correlation with all other variables (Table 1).

*Table 1 – Cronbach alpha, CR, AVE, and correlation of the variables of the conceptual model*

	<b>Alpha</b>	<b>CR</b>	<b>AVE</b>	1	2	3	4	5	6	7	8	9	10
1	0.762	0.862	0.677	<b>0.823</b>									
2	0.725	0.845	0.646	0.729	<b>0.804</b>								
3	0.678	0.824	0.609	0.635	0.527	<b>0.781</b>							
4	0.770	0.867	0.684	0.725	0.687	0.545	<b>0.827</b>						
5	0.700	0.832	0.628	0.621	0.599	0.449	0.568	<b>0.793</b>					
6	0.847	0.907	0.766	0.702	0.615	0.492	0.563	0.612	<b>0.875</b>				
7	0.858	0.903	0.701	0.556	0.510	0.399	0.619	0.565	0.492	<b>0.837</b>			
8	0.893	0.914	0.572	0.686	0.563	0.543	0.577	0.594	0.719	0.512	<b>0.756</b>		
9	0.906	0.926	0.640	0.627	0.543	0.533	0.510	0.634	0.688	0.491	0.681	<b>0.800</b>	
10	0.844	0.882	0.519	0.634	0.585	0.467	0.624	0.656	0.642	0.767	0.674	0.687	<b>0.720</b>

(1) Adaptation; (2) Anticipation; (3) Flexibility; (4) Recovery; (5) Organizational flexibility; (6) cost effective dig. tech; (7) Well-being; (8) Economic performance; (9) Environmental performance; (10) Social performance

To assess common method bias, in addition to the procedural measures, the random independent variable method was employed. This method suggests a linear regression of all latent variables on a dependent variable with random values (Kock, 2015; Kock & Lynn, 2012, p. 578). If any indicator of the latent variable presents a VIF greater than 3.3 in the regression, it suggests collinearity; therefore, it is a possible common method variance problem. The current study found no indicators with a VIF exceeding 3.3, ruling out a common variance problem (Appendix C). For higher-order constructs (HOC) validity, the outer weights of low-order constructs (LOC) were significant, outer loadings exceeded 0.50, and all VIF values were below 3.3, confirming the validity of higher-order constructs without issues (Hair et al., 2019; Kock & Lynn, 2012; Sarstedt et al., 2019).

Table 2 - High-order construct validation indices

HOC	LOC	Outer weights	P-value	Outer loading	VIF
Resilience	Adaptation	0,490	0,000	0,947	3,047
	Anticipation	0,252	0,012	0,857	2,416
	Flexibility	0,153	0,094	0,729	1,727
	Recovery	0,244	0,039	0,855	2,412
Organizacional Routine	Cos-effective_Tech	0,548	0,000	0,894	1,599
	Organizational_Flex	0,566	0,000	0,901	1,599

#### 4 Results and discussions

Our sample is composed of 175 SMEs (88 from France and 87 from the UK). In both countries, the sample mainly comprises SMEs in the service sector. Most companies have no environmental certification, and our respondents from both countries are from administrative, director, or managerial roles.

Table 3 – Sample description

<i>Description</i>	n	
	FRANCE	UK
<b><i>Sector</i></b>		
Construction	8	16
Manufacturing	18	8
Process	3	1
Services	45	50
Others	14	12
<b><i>Size (no. of employees)</i></b>		
<10	26	38
10-50	22	18
51-100	22	15
101-250	12	15
250+	6	1
<b><i>Respondent's role</i></b>		
Administrative	20	12
Director level	26	40
Managerial level	29	24
Others	13	11

##### 4.1 Conceptual model analysis

Before discussing the results of our analysis, Table 4 illustrates our conceptual model assessment.

*Table 4 – Conceptual model assessment*

Predictors	Outcome	All			UK			FR		
		R <sup>2</sup>	F <sup>2</sup>	Q <sup>2</sup>	R <sup>2</sup>	F <sup>2</sup>	Q <sup>2</sup>	R <sup>2</sup>	F <sup>2</sup>	Q <sup>2</sup>
Resilience	Environ	0.438	0.350	0.486	0.463	0.541	0.436	0.435	0.165	0.537
Well-being	Perf		0.025			0.001			0.107	
Resilience	Social	0.659	0.212	0.495	0.569	0.122	0.402	0.773	0.406	0.570
Well-being	Perf		0.572			0.395			0.814	
Resilience	Econo Perf	0.610	0.157	0.499	0.621	0.123	0.488	0.614	0.117	0.485
Well-being			0.006			0.001			0.032	
Environ. Perf			0.093			0.105			0.121	
Social. Perf			0.059			0.054			0.040	
Routine	Resilience	0.624	0.666	0.560	0.617	0.570	0.515	0.665	0.722	0.564
Well-being	0.531		0.139			0.142				
Routine	Wellbeing	0.347	0.531	0.329	0.353	0.546	0.315	0.368	0.583	0.330
SRMR = 0.082; NFI = 0.737					SRMR = 0.100; NFI = 0.615			SRMR = 0.093; NFI = 0.642		

Table 4 indicates a moderate explanation power of the predictors, with R<sup>2</sup> ranging from 0.350 to 0.773. This observation is consistent with the Q<sup>2</sup>s values between 0.33 to 0.50. The SRMRs of our conceptual model ranged from 0.082 to 0.100, which suggests a reasonable fit (Hu & Bentler, 1998).

Our findings (Table 5) confirm that organizational routines, composed of organizational flexibility and cost-effective digital technology adoption, positively influence SC resilience in the UK and France, supporting hypothesis 1. This aligns with the companies' experiences in both countries during the pandemic, where adopting these routines was crucial for companies to navigate the crisis successfully, highlighting their evolutionary advantage. As a result, integrating organizational flexibility and cost-effective digital technology into post-pandemic corporate practices is recommended, updating SC resilience strategies (Boland et al., 2020; Lund et al., 2021).

Table 5 indicates a consistent positive impact of organizational flexibility and cost-effective digital technologies on well-being, supporting hypothesis 2. However, despite the positive effect of these practices, Johanson (2022) reported that the adoption of these practices varies. In comparison, 42% of UK workers have at least one day of remote work per week; in France, only 29% (Baumlin et al., 2022). Johanson highlighted that the French perceived traditional workplaces as identity symbols and belonging. Moreover, in France, communications are relatively informal; therefore, decision-making often happens in informal face-to-face exchanges. Finally, a higher power distance in the Hofstede cultural dimension (68 x 35 of the UK) might contribute to French managers'

maintaining physical proximity with employees, potentially influencing their reluctance toward a higher adoption of remote work.

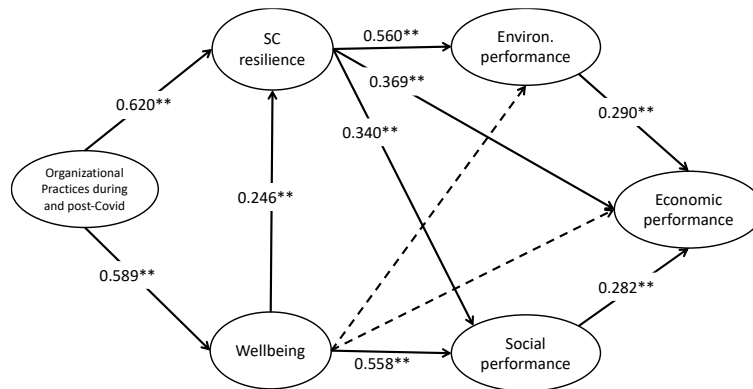


Figure 2 - Path model total sample

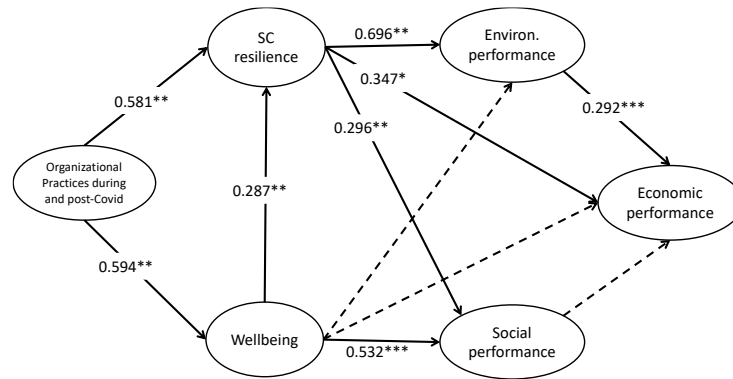


Figure 3 - Path model UK sample

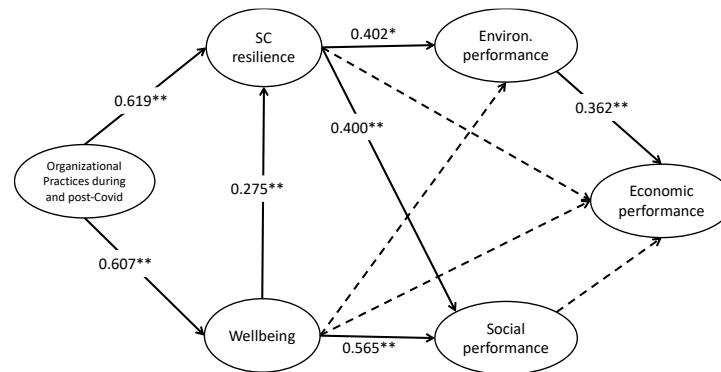


Figure 4 - Path model FR sample

Table 5 indicates a consistent positive impact of well-being on SC resilience, supporting hypothesis 3. This result proposes the need to shift from the traditional technical and cost-driven SC management paradigm to a transformative approach that incorporates a socio-ecological perspective, where well-being is integral. Pettit et al. (2019) emphasized the importance of incorporating ethical, social, and ecological concerns in the evolution of SC resilience challenging the current business model.

Table 5 - Results of conceptual model analysis

	Full (1)	UK (2)	France (3)
Routine -> Resilience	0.620**	0.581**	0.619**
Routine -> Wellbeing	0.589**	0.594**	0.607**
Wellbeing -> Resilience	0.246**	0.287*	0.275*
Resilience -> Econo_perf	0.369*	0.347*	0.332 <sup>†</sup>
Resilience -> Environ_perf	0.560**	0.696**	0.402*
Resilience -> Social_perf	0.340**	0.296**	0.400**
Wellbeing -> Econo_perf	-0.076	0.037	0.200
Wellbeing -> Environ_perf	0.149	-0.024	0.324 <sup>†</sup>
Wellbeing -> Social_perf	0.558**	0.532**	0.565**
Social_perf -> Econo_perf	0.290*	0.234 <sup>†</sup>	-0.330
Environ_perf -> Econo_perf	0.282*	0.292*	0.362*

\*\* p-value < 0.001; \* p-value < 0.05; <sup>†</sup> p-value < 0.1

Routine refers to organizational flexibility and cost-effective digital tech practices.

Regarding the impact of SC resilience on performance, the results revealed a positive effect of resilience on environmental performance. This impact could be attributed to organizational flexibility and cost-effective technology being the antecedents of SC resilience. The home office adoption and digitalization likely reduced employee commuting, therefore reducing the organization's CO2 emissions, waste generation, and energy consumption. OECD (2021a) reported a 7% reduction in energy consumption due to the COVID-19 pandemic, with a projected long-term reduction of 1 to 3%.

The positive impact of resilience on social performance suggests that organizations can reduce employee stress, absenteeism, and turnover and enhance safety standards by better anticipating disruptions. During the second wave of the COVID-19 pandemic, companies with swift resource reallocation, better anticipation, and flexible operations experienced reduced stress levels and improved supply chain resilience. However, resilience did not positively affect economic performance in France, unlike in the UK. According to Demmou et al.(2022), French SMEs were severely affected during the pandemic and relied on governmental aid for survival. Thus, we postulate that although SMEs in France had increased their resilience, the macroeconomic context masked the positive impact of SC resilience on economic performance. A similar effect was observed by Fahimnia and Jabbarzadeh (2016), where companies experienced a decrease in economic performance when implementing a resilient SC.

Regarding the effect of well-being on performance, our study found a consistent positive direct effect of well-being on social performance. This outcome supports the



mutual gain model, suggesting that focusing on employees' compensation, learning process, happiness, and working environment should reflect positively on social performance (Peccei & Van De Voorde, 2019). However, organizational well-being has no significant impact on economic performance in both countries.

As reported by the French Treasury Department (Direction Générale du Trésor, 2022), companies have swiftly invested in well-being practices; however, these investments might need more time to yield positive financial returns. Additionally, according to Inman and colleagues (2009), the influence of organizational practices on economic performance is often indirect, mediated by operational aspects like quality, dependability, flexibility, or speed. Hence, we propose that social and environmental performance factors may mediate the effects of resilience and well-being on economic performance (MacKinnon et al., 2002; Rungtusanatham et al., 2014).

Table 6 reveals that organizational well-being has no consistent indirect effect on economic performance, limiting it to a direct effect on social performance, as illustrated in Table 5. However, well-being mediates the effect of organizational flexibility and cost-effective technology on social performance, hence supporting hypothesis 5. Meanwhile, environmental performance mediates positively the impact of resilience on economic performance ( $\alpha_{full}=0.158$ ;  $\alpha_{UK}=0.203$ ;  $\alpha_{FR}=0.145$ ). The indirect impact of SC resilience on economic performance aligns with previous studies, which established a connection between environmental performance and economic outcomes through environmental innovation and environmental sustainability. Ahmad et al (2021) advocated that environmental sustainability could improve the organization's efficiency by reducing material costs and waste, and environmental innovation could introduce new green practices, which could induce overall organizational performance.

*Table 6 - Results of indirect effects of the conceptual model*

	Full (1)	UK (2)	FR (3)
Resilience -> Social_perf -> Econo_perf	0.098*	0.069	0.132
Resilience -> Environ_perf -> Econo_perf	0.158*	0.203*	0.145 <sup>†</sup>
Wellbeing -> Social_perf -> Econo_perf	0.162*	0.125*	0.187
Wellbeing -> Environ_perf -> Econo_perf	0.042	-0.007	0.117
Routine -> Wellbeing -> Econo_perf	-0.045	0.022	-0.121

\*\* p-value < 0.001; \* p-value < 0.05; <sup>†</sup> p-value < 0.1

## 5 Final considerations and conclusions

Organizational flexibility practices and cost-effective digital technology, adopted during and after the pandemic, positively impact supply chain resilience. The primary objective of these practices was to enable companies to continue operations during the crisis. However, initial implementation revealed a lack of proper remote work arrangements, such as inadequate home space and inefficient IT infrastructure, as reported by employees (Or et al., 2022).

Our study indicates that SC resilience and well-being affect organizational performance differently. While SC resilience directly and indirectly influences all three performance dimensions (economic, social, and environmental), organizational well-being only directly affects social performance.

### *5.1 Theoretical implication*

Our goal is to contribute to two theoretical aspects. First, applying PBV to analyze organizational practices' evolution. Second, discussion about diverse models linking well-being with organizational performance.

Based on PBV, we evaluated SC resilience as a bundle of imitable and publicly available practices related to adaptation, anticipation, flexibility, and recovery. Founded on the evolutionary approach, we demonstrated that resilience practices could change over time, and their “fitness” could be defined by external selection pressures, such as the COVID-19 pandemic or the technological preference of the population.

The new sets of organizational practices were related to organizational flexibility and cost-effective digital technology adoption. These practices improved the SC resilience, and those companies that did not adopt a certain degree of these practices were eliminated from the market.

Amid the pandemic, emphasizing organizational well-being proved essential for sustaining company operations. This circumstance led to the emergence of transformative SC management, advocating a shift from a reductionist and cost-centric mindset to a more comprehensive and eco-social perspective (Mollenkopf et al., 2021; Wieland, 2021; Wieland & Durach, 2021). In line with an evolutionary approach and transformative mindset, our results illustrate the positive impact of well-being on resilience, emphasizing that organizational well-being should be incorporated into the evolution of SC resilience, analogous to organizational flexibility and the adoption of digital technology.

In addition, by observing the relationship between organizational well-being and performance, we confirmed the previously noted inconsistency. Our results support the mutual gain model that Peccei and Van de Voorde (2019) proposed, indicating that organizational well-being mediates organizational routines and performance.

### *5.2 Managerial implication*

Our study provides valuable insights for SME managers aiming to strengthen their SC resilience. We showed practices and their possible evolution based on the context. In the specific context we examined, we highlighted practices related to organizational flexibility and cost-effective digital technology. The pandemic underscored the necessity of adopting a transformative mindset in SC management regarding the evolution of these practices. Our findings suggest to managers that organizational well-being should also be regarded as a crucial factor in augmenting resilience.

Our second managerial insight proposes that organizational flexibility practices, like remote work, may impact well-being similarly in both countries. However, reports have indicated different levels of adoption. The discrepancies in adopting the home office could be linked to cultural factors, such as power distance or employees' perceptions of the work environment. Hence, we advise managers that rather than mimicking publicly available practices from other countries or companies, it is valuable to comprehend how locals perceive these practices and adjust routines accordingly.

Our study also highlights that different sets of organizational practices relate to different performance dimensions. While many organizations aim for positive economic performance, it's crucial to note that some practices might impact economic performance directly, while others might not. For example, we showed that organizational well-being, in our study, only affects social performance. Therefore, managers should not measure improvements in economic performance right after implementing organizational well-being practices.

### *5.3 Limitations and future directions*

Our study explored SC resilience as a combination of sets of practices, specifically practices of anticipation, adaptation, flexibility, and recovery. There are other practices that we did not cover other abilities (Pettit et al., 2010), such as visibility, collaboration, or efficiency. So, we suggest future studies exploring these other abilities, how they

evolve after undergoing selection pressure, and how they relate to the transformative mindset.

From the organizational structure perspective, for future study, it is interesting to examine what contextual variables could encourage and discourage the adoption of organizational flexibility or new practices. One possible way is using the innovation diffusion theory (McGrath & Zell, 2001; Yuen et al., 2021).

Finally, research connecting well-being to supply chain resilience is still in its early stages, necessitating further exploration in this domain. We encourage future studies to explore this subject using various perspectives or approaches to well-being, as observed by Bellingan et al. (2020).

## 6 References

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