





## **CRISIS MANAGEMENT AND ADAPTATION: EVALUATING SOCIO-INSTITUTIONAL RESPONSE TO COVID-19 IN THE LISBON METROPOLITAN AREA**

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**ABSTRACT** – The COVID-19 pandemic generated challenging social, economic and health conditions, prompting governments and institutions to confront numerous obstacles. These organisations had to reorganise internally, reassess their missions, and innovate strategies. Evaluating their institutional responses during a crisis provides insights into the types and levels of impacts experienced and the organisations' resilience. This paper aims to examine the effects of the pandemic on local public and private welfare providers to assess their response and adaptive capacities. A survey was conducted targeting public and associative institutions in the Lisbon Metropolitan Area, using frequency analysis and ordinal regression to interpret responses provided to structured questions. A qualitative assessment was applied to open-ended answers. Findings indicate that institutions significantly impacted their internal functioning and the target group and territories of influence central to each organisation's missions. However, the questionnaire results reveal a strong capacity for response and adaptation among these institutions and an optimistic outlook for the future.

**Keywords:** Socio-institutional response; Lisbon Metropolitan Area; metropolitan resilience; COVID-19; ordinal regression.

**RESUMO** – GESTÃO E ADAPTAÇÃO À CRISE: AVALIAÇÃO DA RESPOSTA SOCIOINSTITUCIONAL À COVID-19 NA ÁREA METROPOLITANA DE LISBOA. A pandemia da COVID-19 gerou condições sociais, econômicas e de saúde desafiadoras, fazendo com que governos e instituições enfrentassem diversos obstáculos. Essas organizações precisaram se reorganizar internamente, reavaliar suas missões e inovar suas estratégias. A avaliação de suas respostas institucionais durante uma crise fornece informações sobre os tipos e níveis de impacto sofrido e a resiliência das organizações. Este artigo tem como objetivo examinar os efeitos da pandemia em organizações com missões socioinstitucionais e avaliar sua capacidade de resposta e adaptação. Para tanto, foi realizado um inquérito dirigido às instituições públicas e associativas da Área Metropolitana de Lisboa, utilizando a análise de frequência e a regressão ordinal para interpretar as respostas dadas às questões estruturadas. Uma avaliação qualitativa foi aplicada às respostas abertas. Os resultados indicam que as instituições tiveram um impacto significativo em seu funcionamento interno, no grupo-alvo e nos territórios de influência que eram centrais para as missões de cada organização. No entanto, os resultados do questionário revelam uma forte capacidade de resposta e adaptação entre essas instituições e a existência de uma perspetiva otimista para o futuro.

**Palavras-chave:** Resposta socioinstitucional; Área Metropolitana de Lisboa; resiliência metropolitana; COVID-19; regressão ordinal.

### **HIGHLIGHTS**

- The COVID-19 pandemic profoundly affected local institutions.
- The types and levels of impacts experienced are less studied.
- The survey provides an interpretation of institutional responses.
- Strong capacity for response and adaptation in institutions in the LMA.

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## 1. INTRODUCTION

The COVID-19 pandemic profoundly impacted global mental and physical well-being, creating a humanitarian crisis that disrupted daily life and diminished individual freedoms (Bavel *et al.*, 2020). To address the crisis, governments implemented school closures, travel restrictions, public gathering bans, health facility expansions, and testing programs (Hale *et al.*, 2021). On a local scale, social support institutions adapted their operations to provide additional humanitarian, health, urban, and educational services. Despite significant global focus on COVID-19, research on its effects on institutional systems remains limited, especially at metropolitan levels.

Existing studies primarily emphasise urban governance challenges and pandemic-accelerated urban dynamics, with limited exploration of how institutional systems managed service delivery and cooperation during the crisis (Silva, 2022). Research on the well-being of residents and community resilience exists (Suleimany *et al.*, 2022; Zoorob *et al.*, 2021), but institutional experiences and adaptations are less understood.

This research, conducted under the *MetroGov3C* project (Metropolitan Governance in Lisbon Metropolitan Area in a Context of Conflict, Competition, and Cooperation), examines institutional challenges faced in the Lisbon Metropolitan Area (LMA) during the COVID-19 crisis.

The pandemic exposed global deep inequalities in healthcare systems (Gravelle *et al.*, 2003), highlighting the unpreparedness of well-resourced systems. Governments' containment measures, while necessary, disrupted economic, cultural, and educational aspects of society's freedom (Bergström *et al.*, 2022). Beyond the health crisis, the pandemic unveiled pre-existing societal issues, such as housing conditions, immigrant integration, elder care, and public transportation. Effective responses required coordination across national and local governance levels, with local institutions often stepping in to fill gaps left by central authorities (Brandtner *et al.*, 2021; Collins *et al.*, 2020). In Portugal, while national decision-making dominated, local governments executed these policies, but regional and metropolitan bodies were largely excluded (Sousa *et al.*, 2023; Gonçalves, 2020).

This article examines how institutional configurations, and adaptive strategies have shaped the socio-institutional response to COVID-19 in the LMA and what this reveals about the broader concept of metropolitan resilience. We understand metropolitan resilience here as the capacity revealed by institutions embedded in complex urban systems to absorb shocks, reorganise operations, and maintain or adjust the provision of essential services during crises. Drawing on the broader literature on resilience (Folke *et al.*, 2010; Walker *et al.*, 2004), this concept is adapted here to emphasise the institutional and governance dynamics specific to metropolitan regions. It encompasses not only infrastructural and technical robustness, but also the institutional capacity for learning, intersectoral collaboration, and flexible reconfiguration of governance networks in response to systemic disruptions.

This research explores how institutions perceived the pandemic's impact on their operations, cooperation levels, and capacity for change. It employs a structured, multi-dimensional questionnaire explicitly designed to capture the impacts of the COVID-19 pandemic on different aspects of organisational functioning, governance, and strategic foresight. It was answered by 90 institutions that had the opportunity to assess their contribution to metropolitan resilience and their preparedness for future crises.

This study contributes to the literature on metropolitan governance under crisis conditions, particularly in contexts marked by multilevel complexity, as with the LMA, offering an empirical assessment of a moment of crisis. Building on resilience, crisis response, and institutional cooperation frameworks, the research offers a realistic perspective on institutional dynamics during systemic disruption. The key findings include a significant disruption in institutional missions and governance dynamics, a high level of institutional innovation and adaptability and a reconfiguration of inter-organisational relationships, with a notable rise in informal cooperation alongside formal hierarchical articulation.

The article is divided into six sections. Following the introduction, a section is dedicated to the literature review about the paradigmatic shift posed by the COVID-19 pandemic, presenting the conceptual framework that guided the survey design and interpretation of institutional responses. The third section discusses the materials and methods used for this research work. The fourth section presents the results, and the fifth section discusses the main implications of the survey findings. The final and sixth section is the conclusion.

## 2. COVID-19 PANDEMIC: A PARADIGM SHIFT CALLS FOR RESILIENT INSTITUTIONS

The COVID-19 pandemic profoundly impacted lives worldwide, shifting paradigms across diverse fields. It became a focal point for research, yet limited attention was given to its effects on the daily operations of institutional systems. These shifts could be witnessed in two different types of challenges. The first lies in a more physical dimension. The closure of physical services, mobility difficulties due to movement restrictions, and shortages in human resources created barriers for all sorts of institutions to deliver their services. Welfare services were particularly impacted, having an augmented pressure to attend to the needs of vulnerable target groups. They had to adapt their offerings, as virtual availability can differ significantly from physical services. To meet new demands arising from emerging problems, such as social, economic, physical and mental vulnerabilities, some institutions had to expand their missions while maintaining their core values. From a more ethical perspective, the issue of trust or distrust in governments influenced how people accessed available services and followed adopted measures.

This theoretical framework reviews the literature on public entities' resilience and response capacity during the crisis, identifying similarities, differences, key mitigation actions, and persistent challenges in the post-pandemic period. The interplay between local and central governments and notable academic gaps are also explored.

Resilience becomes a key concept here because it is this capacity to respond and adjust that has enabled institutions to respond to the impact of the crisis while ensuring that they continue to fulfil their mission. Resilience has become a central concept in various disciplines, encompassing ecological, urban, economic, and social dimensions. The literature on resilience explores its role in adapting to uncertainty, responding to crises, and fostering long-term sustainability. This review synthesises insights from key scholarly works, highlighting the evolution of resilience thinking, its applications across different fields, and the challenges in implementing resilience strategies. Resilience is broadly understood as the ability of systems – whether ecological, social, or economic – to absorb shocks, adapt to changes, and transform in response to external pressures. Walker *et al.* (2004) define resilience in social-ecological systems as a function of adaptability and transformability, emphasising the importance of maintaining system integrity while allowing for necessary shifts. Similarly, Folke *et al.* (2010) expand on this perspective by integrating resilience with adaptability and transformability, arguing that these elements are crucial for navigating complex environmental and societal challenges.

The application of resilience thinking to urban planning has gained prominence as cities face increasing uncertainties related to climate change, economic instability, and social disruptions. Ahern (2011) introduces the concept of shifting from "fail-safe" to "safe-to-fail" urban systems, advocating for adaptive planning approaches that embrace uncertainty and enhance flexibility. This perspective is reinforced by Davoudi (2019), who discusses the role of adaptive planning in managing urban resilience, emphasising the need for iterative decision-making and stakeholder collaboration to navigate unpredictability effectively. Additionally, Therrien *et al.* (2021) propose a transformative approach to urban resilience, highlighting the need for collaborative governance and integrated risk management strategies.

Beyond urban contexts, resilience has also been explored in economic geography, particularly concerning regional economic shocks and recovery processes. Martin (2012) introduces the concept of "regional economic resilience", linking it to hysteresis effects and the ability of regions to recover from recessionary shocks. Boschma (2015) further develops this by adopting an evolutionary perspective, arguing that regional resilience depends on the capacity for innovation, institutional flexibility, and economic diversification. These insights suggest that resilience in economic systems is not merely about returning to a pre-crisis state but about fostering long-term adaptability and transformation. The transition from rigid, fail-safe approaches to flexible, adaptive strategies is a recurring theme, reflecting the need for resilience thinking in uncertainty. While significant progress has been made in conceptualising resilience, challenges remain in operationalising these ideas across different scales and disciplines.

In a moment of change, as the period of uncertainty following the spread of the COVID-19 virus, building resilience and establishing coordination across different government levels were instrumental in enabling suitable decision-making. Examples from different contexts illustrate how crisis management is undertaken according to the capacity of institutional organisation. Governance systems faced significant challenges, with the pandemic revealing and entrenching inequalities.

Despite aspirations to "build back better", the pull of pre-pandemic norms often hindered meaningful change (Derrick *et al.*, 2024).

Some examples in different countries can illustrate this. In China, crisis management strategies highlighted the importance of demographic factors in public health responses, emphasising the need for tailored communication and collaboration across agencies (Jianghui & Riharjo, 2024). The divergence in political and administrative responses in the U.S. affected COVID-19 vaccination rates, illustrating the impact of state political leadership and fiscal capacity on public health outcomes (Janousek & Noh, 2024). The pandemic also exposed vulnerabilities in democratic institutions, with analysis paralysis and risk aversion affecting decision-making. Collaborative governance, as seen in Latin American countries, effectively mitigated health impacts through unified efforts (Acuña-Alfaro *et al.*, 2023). In Poland, the pandemic governance revealed a crisis of neoliberal capitalist structures, with uneven governance patterns and societal responses (Cichecka *et al.*, 2024).

Multilevel governance (MLG) was critical in coordinating responses to the pandemic. However, the literature on MLG remains fragmented, indicating a need for more comprehensive studies that compare federal and non-federal responses and explore the later stages of the pandemic (Carroll *et al.*, 2023). Existing studies often emphasise higher-level governance, such as central governments or supranational entities like the European Union (Vanhercke & Verdun, 2022), or focus on community and individual resilience (Sibley *et al.*, 2020; Suleimany *et al.*, 2022; Zoorob *et al.*, 2021). Educational and healthcare institutions have received attention, given their critical roles during isolation (Kılınç & Sis Çelik, 2021; McGaughey *et al.*, 2022). However, less is known about lower-tier entities, such as municipalities and associations, which faced significant operational challenges during the pandemic.

The pandemic deepened inequalities, disproportionately affecting vulnerable populations. Structural disparities like local government autonomy and financial resources influenced the effectiveness of responses (Silva, 2022). The inadequacy of emergency response infrastructure further exacerbated inequalities, highlighting the need for localised, place-based knowledge to deliver effective solutions. The institutional response was also challenged by cultural perceptions that different societal groups had of the risks related to the COVID-19 pandemic (Dryhurst *et al.*, 2020).

Governance models vary across countries, reflecting political cultures, decentralisation levels, and central-local dynamics (Bouckaert *et al.*, 2020; Edwards & Ott, 2021). Studies highlight the importance of inter-municipal cooperation and central-local collaboration in optimising resources and policy outcomes (Forero & Sietchiping, 2022). Articulation and compromise have been key to optimising resources and maximising policy outcomes. However, funding limitations and top-down policies disconnected from local realities often hindered institutional responses (Benton *et al.*, 2020; McDonald *et al.*, 2020; Navarro & Velasco, 2022).

From less restrictive to authoritarian, local and central governments had to take action to avoid the enormous death rates and balance the economic effects. Digitalisation emerged as a key strategy during the pandemic, enabling communication, information dissemination, and service delivery. However, its efficiency varied with social, gender, and age factors (Silva, 2022). While online services helped maintain operations, their dependence excluded certain groups, such as the elderly and foreigners, further entrenching inequalities (Associação Própública, 2023).

Research on municipal resilience, such as that of Clement *et al.* (2023), revealed that diverse local administration pathways reflected varying levels of disruption. The Portuguese context demonstrated negative emotions during initial confinement, with citizens reporting anxiety, job insecurity, and stress from remote work. Public criticism increased over time, highlighting the need for clear communication, improved testing, and better access to protective equipment in Portugal (Silva *et al.*, 2022).

While the pandemic has prompted significant institutional responses, it has also highlighted the governance challenges during crises. The tension between returning to pre-pandemic norms and the desire for transformative change remains a central theme. The pandemic has underscored the importance of adaptive governance, collaboration, and tailored responses to manage public health emergencies effectively. However, the gravitational pull of established norms and the complexities of multilevel governance continue to pose challenges for meaningful institutional change.

While existing research examines institutional impacts – see, for instance, the review by Guenduez and Walker (2024) – this article offers a statistical approach using data from the *MetroGov3C* research project survey. It aims to provide insights into the challenges faced by local institutions during the pandemic, demonstrating quantitatively the internal and external impacts on their operations, missions, and target groups. In this research, we use the resilience concept to reflect on

metropolitan institutional and governance dynamics, understanding the LMA's capacity to learn, collaborate and adapt in the face of systemic disruption caused by the COVID-19 pandemic.

### 3. MATERIALS AND METHODS

This article is based on an online survey targeting all public and associative institutions operating within the LMA, conducted as part of the *MetroGov3C* research project. The project was conceived to address this need, as previous projects have often failed, new constellations of actors have emerged, and societal challenges such as ageing, climate change, e-governance, and economic crises have intensified.

The LMA comprises 17 cities, 18 municipalities, and 118 parish councils, concentrating nearly one-third of Portugal's population within just 3.3% of the country's territory. It is a metropolis characterised by stark inequalities, shaped by rapid growth during economic difficulty, austerity, and deindustrialisation (Reis, 2022). This development has resulted in pronounced territorial disparities compared to the rest of the country. When examining the institutional framework of the LMA, the national context of strong centralisation in Portugal is a key factor. Despite discussions, regionalisation has never been implemented (Baum & Freire, 2003). The LMA stands out in this scenario due to its size and significant economic and political role. However, its duality – as an area often described as too big for the country and too small for the world – has directly contributed to its historical institutional fragility (Gonçalves *et al.*, 2023).

The COVID-19 pandemic also influenced the *MetroGov3C* research project, making it essential to understand its effects on LMA's institutional operations. The LMA demonstrated higher susceptibility, vulnerability, and exposure to the pandemic than the rest of the country, with infection rates consistently surpassing the national average, considering the number of people and institutions affected. The survey's primary objective was to explore how such an unprecedented event affected local institutions, how it prompted changes to their daily operations and its impact on their articulation with other entities.

The survey link was emailed to relevant institutions and shared through the *MetroGov3C* project website. Data was collected using Google Forms, with the survey remaining open for responses from January to March 2021. Notably, this period coincided with Portugal's second state of emergency.

The questionnaire featured three types of responses: open-ended, multiple-choice, and ordinal. It was structured into four primary dimensions, designed to systematically assess the impact and response to the COVID-19 pandemic within the LMA:

- A. Characterisation of the Entity: The first section focused on profiling the responding organisation in terms of its legal nature (public, private, associative, etc.), the scale of operation (local to national), primary target audience, and main thematic areas of intervention (e.g., health, transport, education, housing).
- B. Impacts: This dimension explored the perceived impacts of the pandemic, structured into three subsections: i. internal operations of the organisation, examining daily administrative functions, resource management, and financial dynamics; ii. organisational mission, investigating disruptions to service delivery, quality, and multi-level institutional relationships; iii. effects on the organisation's target groups and territorial areas of influence, including health, housing conditions, mobility, employment, economy, education, social inclusion, technology access, public space usage, and social tensions. Respondents could provide details about their evaluations in open-ended questions at the end of each section. Ordinal regression models were developed to explore the data, providing significant insights.
- C. Response Strategies: Organisations reported strategies adopted across three critical phases: Prevention, Response, and Recovery. 'Prevention' refers to measures to avoid the spread of the virus, whereas 'Response' relates to the implemented measures to mitigate the pandemic effects in many domains. 'Recovery' addresses the actions applied to create conditions to operate normally. Each phase was assessed based on three utilitarian dimensions: agility (speed of implementation of announced measures), adaptability (flexibility in adapting structures to the new context), and innovation (novelty of actions compared to usual practices).
- D. Future Outlook: This final section sought qualitative insights on lessons learned, potential transformative projects, and anticipated governance changes post-pandemic, emphasising

inter- and intra-institutional cooperation. This section included three open-ended questions: lessons and insights gained, transformative projects related to the organisation and mission, and governance models for the future. A summary evaluation question concluded this section, asking participants to provide a global assessment of how the future might be affected. This question also used the Likert scale.

Section A comprised eight questions designed to provide a general description of the entities. Parts B and C employed a five-point Likert scale to measure the effects of impacts and strategies, where: 1 - Insignificant/not expressive impact, 2 - Weak impact, 3 - Moderate impact, possibly not fully known, 4 - Strong impact, 5 - Very strong/extreme impact. A schematic overview of the survey and methods adopted for the answers' analysis is shown in figure 1. The five-point Likert scale was chosen for its balance between simplicity and depth. It offers sufficient response options to capture nuanced opinions, enhancing the reliability and validity of results without overwhelming respondents.

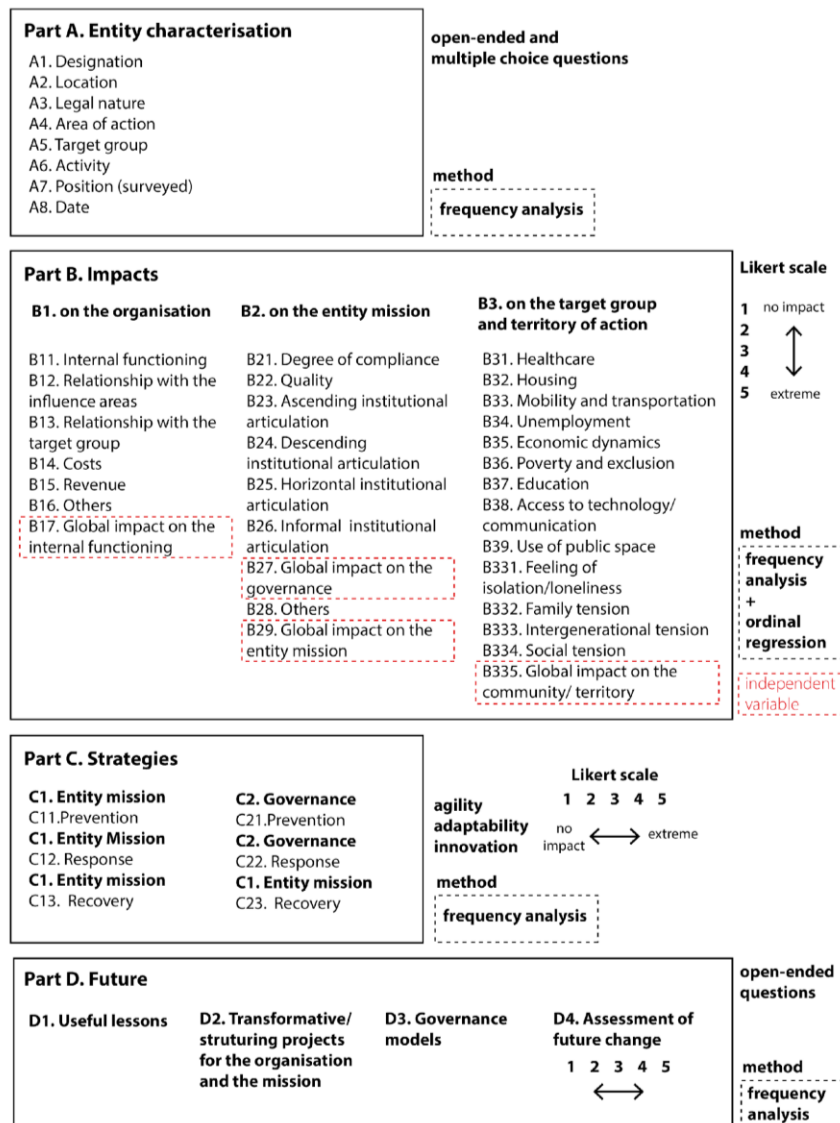


Fig. 1 – Survey scheme. Colour figure available online.

Fig. 1 – Esquema do inquérito. Figura a cores disponível online.

Source: Authors' elaboration

After the survey closed, the data were processed using Google Forms, aggregating and displaying the responses. The data were exported to Excel for cleaning and organisation, eliminating duplicates and irrelevant responses. The cleaned dataset was then imported into *IBM SPSS Statistics* 25 for statistical analysis, including descriptive statistics for each question.

Section B data were subjected to ordinal regression analysis, a method suitable for ordinal dependent variables. Ordinal regression accounts for the ranking and uneven spacing of response categories in Likert scales, providing precise and interpretable results. The proportional odds model, also known as the cumulative logit model, was used to analyse relationships between dependent and independent variables, offering insights into how different variables influenced survey responses.

The SPSS software set the last category of each independent variable as the reference category, meaning its regression coefficient was zero. Comparisons were made against this reference category. A 95% confidence interval (CI) and a critical p-value of 0.05 were used. Variables with p-values exceeding 0.05 were excluded as not significant. The 95% CI indicates a 95% likelihood that results will fall within this interval in repeated studies. This methodology allowed for a detailed examination of relationships between variables and ensured robust conclusions.

Ordinal regression models were applied to analyse Section B, allowing for nuanced insights into the relationships between independent variables (e.g., organisational impacts) and dependent variables (e.g., overall outcomes). Unlike linear regression, ordinal regression accounts for the ordinal nature of Likert scale data, yielding more accurate results.

The SPSS software used in this study automatically set the highest response level ("Very Strong Impact, Extreme") as the reference category. Regression coefficients for other levels were compared to this baseline, with a critical p-value threshold of 0.05 to determine variable relevance. The study ensured statistical reliability using a 95% confidence interval, analysing relationships between subchapter responses (independent variables) and overall evaluations (dependent variables). This approach verified model quality and revealed significant insights into the impacts and adaptations of LMA institutions. The following section details the results of the applied survey, presenting the data collected with the support of maps and graphics.

#### 4. RESULTS

This section presents the statistical results obtained from the survey analysis. The survey responses in part A allowed for a detailed characterisation of the entities, including their type, location, legal nature, areas of jurisdiction/action, target audiences, and focus activities. Regarding the designation of the entities (A1), among the 90 valid responses, nearly half were Parish Councils (48.9%), followed by Associations (28.9%) and Public Companies (11.1%) (fig. 2).

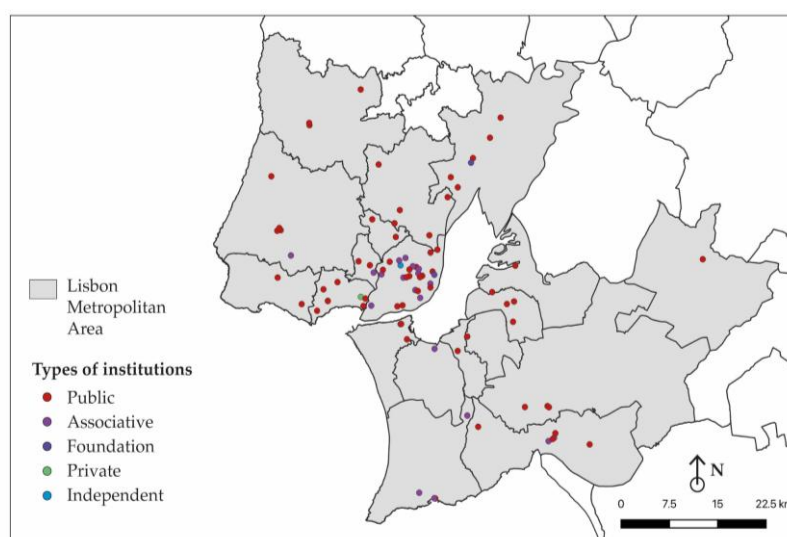


Fig. 2 – Location and types of surveyed Institutions. Colour figure available online.

*Fig. 2 – Localização e tipos de Instituições pesquisadas. Figura a cores disponível online.*

Source: Authors' elaboration

The sample is considered comprehensive, as responses were received from 17 of the 18 municipalities in the Lisbon Metropolitan Area (LMA), except for Sesimbra. In terms of location (A2), the surveyed entities were distributed across three distinct regions within the LMA: Lisbon (27



entities, 30%), LMA North (37 entities, 41.1%), and LMA South (26 entities, 28.95%). The institutions represented a variety of types, including municipalities, local associations, civil parish councils, and public companies. Although entities were located across different municipalities within the LMA, a significant proportion was concentrated in Lisbon. Figure 2 illustrates the types (public, associative, foundation, private, or independent) and locations of the surveyed organisations.

Regarding their legal nature, most entities were public, associative, or private institutions, accounting for 91% of the sample (62 public, 19 associative, and nine private). Regarding their area of action, 53.3% focused on the parish level, 24.4% on the municipality level, 11.1% on the national level, 5.6% on regional areas, and 4.4% on neighbourhoods. Concerning their target audiences, the entities primarily addressed the general population (78.8%), followed by vulnerable groups (12.1%) and companies (9.1%). The thematic focus of their activities was predominantly multi-sectoral, social, and health related.

#### 4.1. Impact on the organisation

Section B of the survey examined the pandemic's impact on the organisations' internal functions, roles, and focus on specific groups and territories. For subsection B1, the dependent variable analysed was B17. The global impact on the internal functioning of the entity is ordinal. The results showed that 66.7% of the entities reported experiencing at least a substantial impact. Among the independent variables, B11. Internal functioning and B14. Costs were statistically significant ( $p < 0.05$ ), indicating their relevance to the global impact on internal functioning (fig. 3).

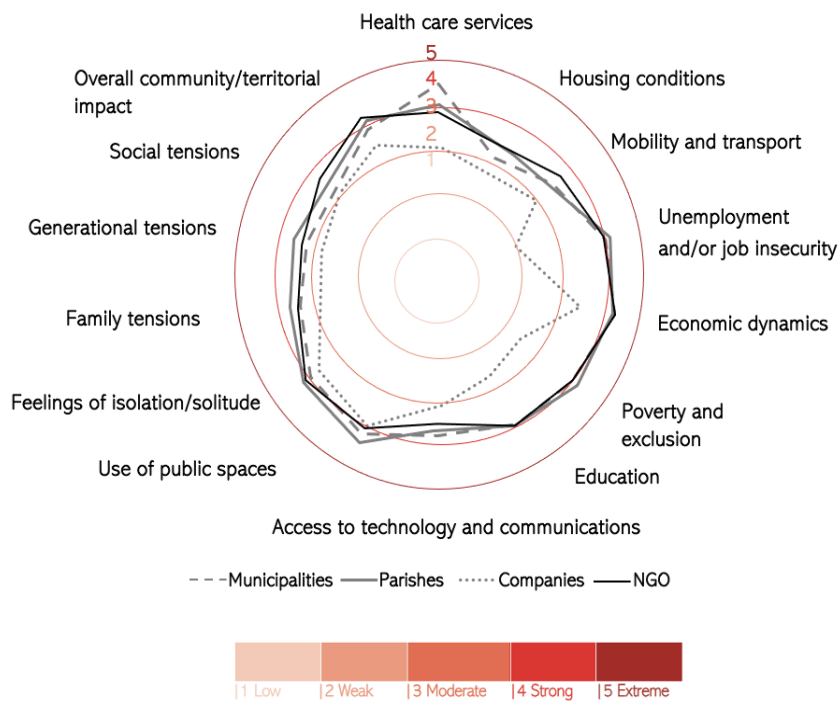


Fig. 3 – Impacts by type of institution. Colour figure available online.

*Fig. 3 – Impactos por tipo de instituição. Figura a cores disponível online.*

Source: Authors' elaboration

Subsection B2 assessed the effects on the organisation's mission using the dependent variable B27. Global impact on governance and B29. Global impact on the organisation's mission. A large proportion of entities reported being strongly impacted in both areas. The first ordinal regression, using B27. Global impact on governance as the dependent variable revealed that upward, downward, and horizontal institutional articulation significantly affected governance. The second regression focused on B29. Global impact on the entity's mission identified that B21. Degree of compliance was the only statistically significant variable, with a negative coefficient value, highlighting challenges in service delivery.



The final subsection addressed the pandemic's impact on target groups and territories, assessing the variable B335. Global impact on the community territory. Two independent variables were statistically significant: B331. Feelings of isolation and loneliness and B332. Family tensions, with 76.2% of entities reporting substantial impacts. The most notable effects were related to economic dynamics, poverty, social exclusion, feelings of isolation, the use of public spaces, education, unemployment, job insecurity, and health concerns. Figure 3 shows, on a scale from 1 to 5, the impact felt on the target group and territory in all the variables inquired about, according to the types of institutions – municipalities, Parishes, companies, and NGOs.

## **4.2. Strategies and measures adopted**

Section C of the survey explored strategies and measures adopted to address the impacts on organisations and governance. Results showed that, on average, 75% of entities reported experiencing at least a substantial impact concerning agility and adaptability. However, regarding innovation – defined as the degree of novelty introduced in actions compared to standard practices – the reported impact was lower, with an average of 63% experiencing at least a substantial impact. In terms of key actions, entities prioritised agility and adaptability, particularly in the prevention and response phases, over innovation.

## **4.3. Lessons learned and future perspectives**

The final section of the survey (D) examined lessons learned and innovative projects that may shape the future of these institutions. This section sought to capture how organisations envisioned fostering new, more intense synergies. Commonly cited responses included reorganising work processes, improved inter-institutional relationships, enhanced collaboration and communication, increased use of information and communication technologies, and teleworking.

The survey's final question asked entities to summarise their evaluation of future changes. The results indicated that 81.6% of respondents anticipated at least a substantial impact on the future. Entities predicted more intense collaboration between organisations (governance), improving their missions for target groups and territories. Key domains expected to evolve include information and communication technologies, institutional collaboration, and work processes.

The following part of the article analyses the results presented relating to the themes from the literature review, reflecting on aspects of resilience, capacity of adaptation, adopted strategies and future perspectives.

# **5. DISCUSSION**

Building on the statistical and qualitative findings presented in the previous section, this discussion explores their broader implications for metropolitan resilience. The data analysis from part B of the survey using the ordinal regression model shows that entities experienced a substantial impact from the pandemic on their mission and governance. The impact on the entity organisation is reflected primarily in their internal functioning and costs. Regarding the impact on the entity's mission, the analysis demonstrates that in entity governance, the pandemic's effects were felt mainly in institutional articulation across different levels: descending, ascending, and horizontal. For instance, the ordinal regression models in Section B confirmed that disruptions in service compliance were strongly associated with a decline in mission performance, reinforcing the theoretical insights on institutional vulnerability. The analysis also reveals that feelings of isolation/loneliness and family tensions were the most challenging factors affecting their target groups and territories of action.

The frequency analysis in part C, "Strategies", demonstrates that entities relied on their flexibility as a quick solution to improve response times and define new modes of intervention. Beyond these changes in adaptability and agility, achieving the necessary innovation for a sustainable future requires a more substantial metropolitan commitment to fostering collective and territorial intelligence. Entities experienced a high impact on their mission and governance due to the pandemic, intensified by the metropolitan context. They focused on flexibility as an immediate solution to improve response times and define new intervention strategies. However, moving beyond

adaptability, innovation for a sustainable future depends on a more substantial metropolitan commitment to foster collective and territorial intelligence.

Responses to open-ended questions provided additional insights into entities' perceptions and strategies for addressing challenges, offering more detailed descriptions than the structured questionnaire alone could capture. Some entities added responses to the open-ended question about the impacts felt (section B). Generally, these responses reflected the effects of social isolation measures implemented for COVID-19 prevention, such as the lack of interaction among organisation members and between entities and target groups, the need for internal reorganisation to comply with isolation rules, the cancellation of activities, and the increased demand for aid to support vulnerable populations.

In section C of the survey, which explored necessary prevention strategies to support organisations' missions, stakeholders highlighted the importance of actions such as preparing contingency plans. Strengthening social action was another strategy various associative and public institutions implemented to fulfil their social missions. Regarding governance responses, relationship transformations and increased institutional collaboration were the most mentioned measures.

Addressing section D (Future) and the lessons learned during this period, entities reported adopting technological innovations and making transitions to ensure the continuity of their work. They also mentioned reinventing communication methods and increasing formal and informal institutional collaboration. An important lesson cited by multiple entities was recognising the critical role of social support between individuals and communities during times of crisis.

In the subsection on Transformative Projects, the most frequently mentioned topics were establishing new partnerships, training staff to use new technologies daily, and creating open databases. Regarding governance models, entities emphasised networked collaboration and cooperation among organisations to ensure efficient service delivery. The answers reveal an opening for building new partnerships, as a perspective to be achieved shortly. Yet, the effective construction of these relationships could only be captured by applying a new questionnaire to understand this aspect in more detail.

Some institutions stated that they aimed to establish new participation models and create agile, direct channels for decision-making and communication. However, this survey could not fully capture differences between organisations – for instance, in identifying the most adaptable institutions. Open-ended questions that could have provided more insight into the approaches adopted by these institutions were not mandatory, and many participants did not disclose specific actions.

According to this self-assessment provided by the public and private welfare providers in the LMA, there was a relatively rapid adaptation. This distinction, at least in this area, suggests that the inequalities noted in the literature concerning local governments' autonomy or financing capacity were undervalued and did not pose significant limitations, contrary to other works (Sibley *et al.*, 2020; Silva, 2022). There was significant flexibility in financing the urgent needs of these organisations, with no clear limits imposed and ease in contracting services (Toshkov *et al.*, 2022).

It is worth emphasising that, unlike many other cases (Kılınç & Sis Çelik, 2021), differing perceptions of the disease and its management did not appear to be relevant, allowing for the adoption of coherent measures across the various territories of the Lisbon Metropolitan Area. Finally, an important aspect to note in this analysis is the lack of clear indications of inter-municipal cooperation or central-local relations studies (Corburn *et al.*, 2020; Janssen & van der Voort, 2020; Toshkov *et al.*, 2022). Instead, the horizontal links between non-governmental organisations and local authorities seem more prominent, aligning with observations by Forero and Sietchiping (2022).

Ultimately, the pandemic's disruptions prompted similar measures and adjustments across entities, diverging from the variability observed in other contexts. The experience of LMA underscores the importance of adaptability, collaboration, and targeted strategies in addressing crises, while also revealing areas for improvement, particularly in fostering innovation and strengthening inter-municipal cooperation.

Considering these results, despite the strong response capacity demonstrated by institutions in the Lisbon Metropolitan Area during the pandemic, the transition from emergency measures to a more robust structural resilience remains a significant challenge. While agility and adaptability were evident in the short term, the results indicate that these changes did not necessarily lead to sustained transformational resilience in dimensions such as diversity, flexibility, adaptability, and transformability, as followed by Folke *et al.* (2010). For example, the digitalisation of services was widely adopted as an emergency response. However, its implementation was not accompanied by

strategies ensuring social inclusion and equitable access, which aligns with concerns raised in studies on the digital divide and resilience governance (Amankwah-Amoah *et al.*, 2021).

Additionally, some exceptional measures, such as mandatory prior appointments for public services, have persisted without a critical evaluation of their impact on vulnerable populations. Thus, while the crisis prompted significant operational adjustments, it did not always foster long-term organisational capacity to cope with future crises. This diagnosis underscores the need for a deeper reflection on the limitations of institutional responses in the post-pandemic period and the importance of public policies that promote immediate responses and structural transformations to foster more equitable and sustainable resilience in the long run.

The institutions' high adaptability reflects internal agility and a surprising capacity for lateral coordination – what might be called 'emergent governance.' Unlike better-prepared countries such as Sweden or Italy, where fragmented systems led to delays (Silva, 2022), Lisbon's experience suggests that flexible, decentralised actors can compensate for central government gaps, especially when social capital and shared missions are strong. This has implications for designing resilient governance systems for future emergencies.

These insights suggest the need for more resilient metropolitan governance models that integrate formal and informal collaboration mechanisms. Future policy frameworks should prioritise strengthening multilevel governance articulation, institutionalising adaptive capabilities for crisis preparedness, and encouraging cross-sectoral innovation through coordinated planning.

## 6. CONCLUSIONS

These final reflections are grounded in the empirical results previously discussed, offering a synthesis of institutional dynamics during the crisis. This research offers a deeper understanding of the adaptive strategies and governance challenges faced by metropolitan institutions during the COVID-19 crisis. Integrating survey-based self-assessments with ordinal regression analysis, a method still underutilised in this field, provides a valuable empirical contribution to the study of metropolitan crisis governance. While the effects of the pandemic on internal functioning and expenses are now widely recognised, this study captures the uncertainty and urgency felt during data collection. It documents how institutions perceived their main difficulties, the adjustments they implemented, and the future trajectories they envisioned during a moment of systemic disruption.

Given that workers in charge of daily operations responded, the survey serves as a form of self-reflection to understand the possible responses of their institutions to an event with a significant impact, such as the COVID-19 pandemic. Understanding these perceived impacts represents a valuable and innovative contribution, particularly since most published research on institutional resilience during the pandemic is not based on perceptions. However, differentiating aspects between institutions could not be grasped, which is a limitation of this study. Also, applying a new survey could help understand how the imagined future and transformative projects have been implemented. For future research, longitudinal studies could assess the durability of the pandemic's prompted institutional changes and explore their long-term effects on metropolitan governance efficiency and equity.

One important shift observed is the digitalisation of public services. In the pre-COVID-19 phase, the primary focus was gradually making services available electronically. In 2019, a platform was created (e-Portugal.gov.pt), where all digitally available public services were consolidated, but this was almost always complementary to face-to-face activity. The pandemic accelerated this shift, increasing the number of online services and reducing hybrid online and face-to-face approaches (Amankwah-Amoah *et al.*, 2021). The persistence of emergency measures such as appointment-only access has begun to raise concerns about digital exclusion and access equity, especially for elderly and immigrant populations. Policymakers must now revisit these adaptations under a rights-based lens.

The COVID-19 pandemic caused significant disruption to various aspects of local development, triggering cascading effects in the social sphere and necessitating socio-institutional responses from local administrations. A review of the social effects of the COVID-19 pandemic identified affected social areas that underwent dramatic changes during the crisis (Alizadeh *et al.*, 2023). This research demonstrates that the pandemic adversely impacted seven significant domains: health, social vulnerability, education, social capital, social relationships, social mobility, and social welfare.

Upon analysing the results, several insights emerge from the pandemic that could strengthen social resilience in the future. One key lesson is that governments must implement equitable policies, recognise necessary adaptations in socially impacted spheres, and adopt responsive measures to effectively address the pandemic and future adverse events. Additionally, embracing collaboratively devised strategies can enhance social resilience by fostering collective action and cooperation (Alizadeh *et al.*, 2023).

This is a task for the next decade, requiring public policies, public institutions, academia, and non-governmental organisations to strengthen their links in order to gradually correct the inequalities that have so dramatically exposed the most vulnerable to the consequences of this crisis, as several organisations emphasised in their open responses to the questionnaire. The study shows that there is an open path to positive change. However, it is essential for future research to address these perceived changes in the post-COVID era to evaluate how the strategies adopted and the difficult moments experienced can support practical improvements in entities' internal functioning, governance, and missions.

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