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General and Substantive Accountability in Nursing Home Services: Assessing Messages from the Demand Side and the Supply Side

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ABSTRACT

This study examines the extent to which general and substantive accountability is integrated into the language used by key actors involved in nursing home services. Particularly, we investigate the messages used by the supply side, which includes public and private organizations involved in residential care for older adults, and the demand side, which comprises organizations representing service beneficiaries. Moreover, we explore the alignment between the messages used by both sides of the accountability relationship. In the context of Spanish nursing homes, we analyzed a corpus of tweets by organizations from both sides of the accountability relationship, from one year before the outbreak of COVID-19 restrictions to after their implementation. Using text analysis techniques, we found that messages related to general and substantive accountability had a low priority before and after the outbreak. Public organizations were slightly more likely to employ general accountability terms than private organizations. This is particularly in non-crisis situations, although less frequently than organizations representing beneficiaries. Our analysis demonstrates a lack of convergence between the messaging on the supply and demand sides, indicating a communication breakdown between the two sides in the accountability relationship.

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Introduction

The provision of information about service performance is essential for promoting an empowered citizenry and accountable public administration (Amirkhanyan, 2019). An aging population, shortcomings in the quality of nursing home services (even in more extensive welfare regimes), high levels of dependency of the people who live in the facilities, and the devastating consequences of COVID-19 for nursing home residents highlight the

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requirement for greater transparency and accountability from organizations involved in providing services.

By focusing on accountability, this study pioneers investigating the language used by core actors involved in nursing home services. This analysis is essential because communication messages represent a core element in the exchange of accountability relationships. While one of the central dimensions of accountability is the provision of information and the justification of actions (Brandsma & Schillemans, 2013), the language used to share information, communicate with, and engage citizens remains underexplored in the literature. Although the provision of nursing home services is mostly concentrated in the private sector, it remains unclear whether differences exist in the communication strategies employed by private and public organizations.

This study distinguishes between *general* and *substantive accountability messages*. *General accountability* refers to messages that incorporate core elements of the broader conceptualization of accountability, namely information, evaluation, and sanction of services (Brandsma & Schillemans, 2013). *Substantive accountability* refers to messages that include the provision of information on specific aspects related to the quality of the structures, processes, and outcomes of nursing home services (Donabedian, 1988; Du Moulin et al., 2010).

This study has two main objectives: First, to investigate the general and substantive accountability messages used to communicate with the *general public* issued by public and private organizations (both for-profit and non-profit) involved in residential care services for older adults (i.e., the supply side). Second, to examine the convergence of these messages with those issued by beneficiary organizations (i.e., the demand side). Therefore, we use automated text analysis methods to examine a corpus of tweets posted by a broad range of organizations involved in the Spanish nursing home sector. Particularly, we examine tweets issued by ministries at the regional and central levels of government that are responsible for social care policies. As for private actors, we examine messages by for-profit organizations (firms and business associations) and nonprofit organizations (charitable or religious groups) that represent private providers of the services. To examine the convergence between the demand and the supply sides of accountability, we obtain messages from beneficiary organizations (particularly, organizations of relatives of nursing home residents). The empirical analysis covers a period of 24 months: One year before and after the outbreak of COVID-19 restrictions in Spain on March 14, 2020.

From the dictionary analysis of keywords related to general and substantive accountability, we find that accountability-related messages are not a priority for organizations that represent the supply side of services, particularly when contrasted with the messages posted by beneficiary organizations, which are more likely to use keywords related to accountability (both general and

substantive). Moreover, we find that public organizations are slightly more likely to employ general accountability terms than private organizations, particularly in non-crisis situations. In line with previous studies (Broms et al., 2020), we find that private organizations are more likely to use terms related to the processes involved in services, however, this trend was only present before the outbreak. Conversely, before the COVID-19 outbreak, the messages posted by the demand side focused on the services offered by the facilities; after restrictions were implemented, they shifted toward aspects regarding outcomes. Furthermore, this study reveals the absence of convergence between messages by service providers (public and private organizations) and organizations representing the beneficiaries of these services. This absence might have implications for the quality of and trust in services.

This study contributes to the literature on accountability (e.g., Brandsma & Schillemans, 2013), and to the literature on eldercare and the impact of COVID-19 on these services (e.g. Broms et al., 2020). To the best of our knowledge, this study is the first attempt to obtain messages issued by different types of organizations involved in accountability in the nursing home sector. The major contribution of this article is a discussion on how information sharing can contribute to accountability by identifying the extent to which core actors use general and/or substantive accountability messages in their interactions. Analyzing accountability messages as social constructions is important because they may influence citizens' opinions and governments' decisions regarding the design, content, and implementation of core services (Schneider & Ingram, 1993). This study provides significant insights into the differences in the topics raised and the priorities of different actors involved in the provision of services when communicating with the general public. While meaningful and substantial communication should be included in formal information systems that contain detailed and private information on the status of each resident, it is also relevant to analyze information sharing and communication messages on social media as tools that enhance social control over services.

General and substantive accountability messages

In this study, *accountability* is a social relationship between actors and forums in which the actors as account-givers inform and justify their conduct and the account holders evaluate and sanction the account-givers' conduct (Bovens, 2007; Brandsma & Schillemans, 2013). From this definition, accountability has a supply side of actors (e.g., governments and service providers), who, in their role as account-givers, provide information regarding their actions, and a demand side of forums (e.g., citizens, audit offices, stakeholders, and service beneficiaries), who have the power to assess and sanction the performance of the supply side.

Although accountability is a communicative interaction, the analysis of linguistic patterns used to communicate and engage with forums has received little attention in the literature. In this study, we focus on the language used by core actors on the supply side of accountability, namely public and private organizations (e.g., governments, private firms, and business associations) involved in providing nursing home services. Regarding their messages, we focus on information disseminated to the general public, which is accessible to different types of stakeholders.

Moreover, we examine the contents of the messages used by core organizations on the demand side of the accountability relationship. These are beneficiary organizations, understood as those that represent relatives of nursing home residents. Research on nursing home services provides evidence of the importance of examining the concerns expressed by the relatives of residents since they “oftentimes become ‘eyes and ears’ for the concerns and safety” of those receiving care (Hado & Feinberg, 2020).

Why is it important to study the messages used by the supply side and the demand side to communicate with the general public? To answer this question, we rely on Schneider and Ingram’s (1993, p. 334) argument that “*social constructions influence the policy agenda and the selection of policy tools, as well as the rationales that legitimate policy choices. Constructions become embedded in policy as messages that are absorbed by citizens and affect their orientations and participation.*” It is necessary to examine the words that core actors use to construct communicative messages by both sides of accountability relationships. This is because the content of the information and its sharing might affect the opinions formed by citizens and the decisions made by governments regarding the contents of these core services.

General accountability

To examine communication messages, it is necessary to define the information-sharing messages that can be attributed to accountability. As Bovens (2007) emphasizes, “account-giving is more than mere propaganda, or the provision of instructions to the general public.” Drawing on these studies, we argue that regardless of the policy topic (health services, education policies, school meals), one can identify whether the supply side refers to accountability messages when referring to the core elements of its conceptualization, namely, *information*, *evaluation* and *sanction* (Brandsma & Schillemans, 2013). Hence, we can identify whether those on the supply side share information about the transparency of the services, their evaluation, and/or about any sanctions implemented. When analyzing the messages used by the demand side, one

might also identify whether they refer to these three general elements of accountability.

Substantive accountability messages: information-sharing about the processes, the structures and the outputs of nursing home services

Accountability messages can also target specific policies and services (Kosack & Fung, 2014). As our study focuses on nursing home services, a core step is to identify the elements of these services that providers can focus on for accountability purposes. In this regard, we follow Broms et al. (2020), who use Donabedian's framework to assess the quality of care.

Donabedian's (1988, 2003) classical model emphasizes the analysis of three core dimensions of service quality: *Structures*, *processes*, and *outcomes*. Quality indicators of the structures refer to material and human resources, staff qualifications, and physical facilities requirements. Process indicators refer to "the activities that constitute health care," such as health plans including treatments and diagnosis, meals, and channels of participation. Outcome indicators relate to the changes attributed to the services, such as evaluations and user satisfaction (Du Moulin et al., 2010). Drawing on these studies, we argue that when it comes to nursing home services, *substantive accountability* messages include the provision of information on specific aspects related to the quality of their structures, processes, and outcomes. Therefore, we investigate the extent to which both suppliers and recipients of accountability refer to these aspects in their respective messages.

Theoretical expectations regarding accountability messages issued by the supply side: the expectation on general accountability

Previous studies have highlighted that long-term care policies (LTC) have emerged in response to demographic shifts resulting from an aging population, changes in female labor force participation, and evolving cultural perceptions of care (Ranci & Pavolini, 2015). Despite these transformations, LTC policies have been characterized by low levels of institutionalization compared to other social policies that are the core pillars of welfare regimes (Ranci & Pavolini, 2015). Several countries have introduced substantial involvement of market actors in the implementation of these policies, which can be provided through different arrangements between public and private organizations. Even in more generous welfare states, such as Nordic eldercare systems, the de-universalization, privatization, and marketization of these services have increased (Broms et al., 2020; Szebehely & Meagher, 2018). Public administration studies provide important insights into the differences in organizational performance and management among different types of providers (e.g., Amirkhanyan et al., 2018). For example,

one of the primary arguments is that the public sector is more likely to operate “under tight systems of control” and comply with democratic values, while for-profit organizations are more likely to have regulatory violations (Amirkhanyan, 2008). Similarly, Song (2022) argues that public organizations are more constrained by formal mandates and obligations and are more vulnerable to institutional forces than private entities. This is because public organizations operate within a complex environment comprising diverse stakeholders and are subject to more demands for social legitimacy and bureaucratic reputation. In addition, Song (2022) finds that, in addition to public organizations, nonprofit organizations are less likely to have regulatory violations. This is because violations incurred by nonprofits might lead to greater costs owing to their unique legal status. As both public and nonprofit organizations are guided more by societal and stakeholder expectations and regulatory compliance, we expect that when compared to their for-profit counterparts, they would be more inclined to employ general accountability messages related to the dissemination of information, control, and sanction mechanisms of the services.

Expectation 1. General accountability: Public organizations and nonprofit organizations are more likely to use general accountability messages than for-profit organizations.

Expectation on substantive accountability

Beyond the expectation of general accountability messages, one can examine the type of organization which is more likely to communicate using *substantive* elements of the quality of nursing home services (i.e., structures, processes, and outcomes). Previous studies (Amirkhanyan, 2008) find that privatization has negative consequences on the quality of services, and that a greater risk of termination is more likely to be associated with for-profit facilities (Angelelli et al., 2003). This is in line with studies by Comondore et al. (2009) regarding the effect of ownership on the quality of residential care. These studies find that nursing homes that belong to the public sector are more likely to provide higher-quality services. By disaggregating for-profit and nonprofit entities, Amirkhanyan et al. (2018) argue that public and nonprofit organizations are expected to be more quality-centered. Meier et al. (2022) also demonstrate that public and nonprofit nursing homes have better quality indicators related to the structure of services, such as better equipment, facilities, and resident control, and that these types of facilities “receive fewer complaints and have fewer regulatory deficiencies.” As these previous studies find shortcomings in the quality of services provided by for-profit organizations, we also expect shortcomings in accountability messages regarding the three substantive dimensions of their quality: Structures, processes, and service outcomes.

Expectation 2. Substantive accountability: Public organizations and nonprofit organizations are more likely to use substantive accountability messages than for-profit organizations.

Theoretical expectation on accountability messages issued by the demand side

This study examines the concerns emphasized by beneficiary organizations, which primarily refer to organizations of relatives of nursing home residents. Owing to the high prevalence of cognitive issues, disabilities, and health conditions among nursing home residents, relatives play a core role in the well-being of older adults in residential care settings (Hado & Feinberg, 2020). They often become “eyes and ears” because of concerns about the safety of care recipients (Hado & Feinberg, 2020). Analyzing these organizations is crucial because they are core groups that demand and receive information about the services used by their relatives. Through their messages, they can carry out “soft” sanctioning measures through discussions and disapproval (Blomqvist & Winblad, 2022). Saliba and Schnelle (2002) show that the relatives of residents are core actors in demanding information on aspects related to the quality of services, such as information related to residents’ health status and participation in care planning. Therefore, we expect that these types of organizations are more likely to use messages that refer to accountability (either general and/or substantive) related to services.

Expectation 3. The demand-side organizations related to nursing home services are more likely to use either general or substantive accountability messages than supply-side organizations.

Convergence of the messages issued by the demand side and the supply side in times of crisis

Studies in this sector emphasize the importance of establishing meaningful communication links between the demand and supply sides of services (Hado & Feinberg, 2020). However, this is not a straightforward practice, whether during the day-to-day or crisis episodes. The COVID-19 crisis, which has been referred to as the “second transboundary mega-crisis to hit contemporary societies in this century” (Boin et al., 2020), hit vulnerable societal groups the hardest; and among these groups, nursing home residents were the most affected population (Comas-Herrera et al., 2020). On average, 30 to 60% of overall COVID-19-related deaths in European countries occurred in nursing homes during the spring of 2020 (Bernardi et al., 2021). Recent studies show that in the management of the COVID-19 crisis, governments have followed different strategies and responses to the challenges posed. For instance, Daly et al. (2022) note that some countries adopted a more proactive approach (e.g.,

Denmark and Germany), while other countries (e.g., Italy and Spain) “had major weaknesses resulting in delayed and generally inadequate responses.” Despite these differences, a common response across most European countries was the implementation of isolation measures in most nursing homes, whether publicly or privately operated. Hence, nursing homes have not allowed visitors in response to the growing number of COVID-19 cases and avoided dealing with a higher number of deaths. In this context, communication was expected to play a key role in addressing this transboundary threat. It was expected that (both public and private) core actors involved in service provision would meet the communication needs of the public, particularly those related to nursing home residents and their relatives, by providing relevant information for them (Falkheimer & Heide, 2010). Drawing on studies of risk communication, one might expect that both government officials (Zhong et al., 2023) and private providers (Olsson, 2014) are likely to prioritize reputation-focused communication strategies to safeguard their respective images. However, this focus on reputation may cause a disconnection between messaging and the needs of residents’ relatives during a crisis, potentially limiting their ability to respond effectively. Furthermore, considering that the shortcomings of the sector predate the pandemic, such as those related to uneven quality and access to services (Bernardi et al., 2021), we expect that limitations on the supply side related to preparedness and knowledge may have affected their capacity to communicate effectively in response to information demands. Consequently, this might lead to a lack of convergence in the messages used by both the supply side and the demand side.

Expectation 4. In times of crisis, there is a lack of convergence in the accountability messages used by the supply side and the demand side.

Methods

In some countries, such as the U.S. and the U.K. (Amirkhayan et al., 2019; Song, 2022), public data is available on regulatory violations (or quality deficiencies), nursing home inspections, and quality ratings that rely on sources from nursing homes registered in their respective national health system datasets. In Spain, public information on nursing home services is dispersed across regions, and there is no consolidated official public dataset containing core information such as personnel ratios, number and results of inspections performed, and quality systems. Similarly, no other information gathered by the regional or central government on evaluations conducted by service users is publicly available (Broms et al., 2020). To the best of our knowledge, there is no comprehensive assessment of nursing homes in Spain.

In this study, we focus on messages provided through social media, particularly Twitter (now X). We use social media for the following

reasons: First, social media messages are publicly available. Governments and private service providers can use this tool to communicate with the public and various stakeholders including users, organizations, professional organizations, and business associations. Second, social media can serve as a channel for crisis communication (e.g. Guidry et al., 2017), which is in line with studies on risk communication that have explored government communication through social media during crises, such as Ebola and the 2009 H1N1 (e.g., Guidry et al., 2017). During the pandemic, several families were deprived of access to information about their relatives living in nursing homes, and information provided through social media channels represented one of the few available channels. Third, we acknowledge that Twitter can serve as a corrective conduit for information to counteract poor organizational performance. However, social media messages serve as a communication channel subject to social control and oversight.

Long-term care policies in Spain primarily rely on the regional governments responsible for licensing and regulating them. Regional legislation states that service providers can include public, private for-profit, and nonprofit entities/associations. In 2020, 73% of nursing home beds in Spain were provided by private facilities. According to Abellán-García et al. (2021), pp. 5,567 nursing homes in Spain provide 384,251 beds, including sheltered housing, psychogeriatric centers, and residential complexes. Of these, 3,925 are private facilities that provide 73% of the total number of places (281,332) and 1,642 are public facilities and provide 27% of the total number of places (102,919). However, there are differences across Autonomous Communities. For example, in Catalonia, Andalusia, Cantabria, Valencia, Madrid, and Murcia, private organizations manage nearly 80% of nursing home beds, whereas in other regions, such as Extremadura, the Canary Islands, and the Balearic Islands, the share of private providers is below 60%.

To measure the prominence of accountability in messages issued by actors in the nursing home sector to the general public, we collected their tweets and assessed their use of theoretically-relevant keywords (dictionary analysis) and themes (topic modeling) before and after COVID-19 restrictions in Spain. As nursing home services have a high level of marketization, the examined providers include both public and private providers (the list of actors examined is provided in Appendix 1). We collected 118,351 tweets from 87 actors involved in the nursing home sector for older adults in Spain, with 43 of them belonging to private actors (business associations and firms that provide services), 22 to the public sector (all 17 regional governments and the central government), and 22 to beneficiary organizations. To uncover differences in messaging patterns, we considered a 12-month window before and after the COVID-19 outbreak, using the date of the first state of emergency (March 14, 2020) as a reference point. Thus, we covered tweets posted between March 14,

2019, and March 14, 2021. In order to filter out non-relevant tweets, we only considered those that refer explicitly to nursing homes - *residencias* in Spanish – by flagging related keywords and hashtags (e.g., #*residencias*). With these filters in place, the final corpus consists of 7,020 tweets from 42 private organizations (57%), 22 public organizations (8%), and 22 associations of beneficiaries (35%) (See Appendix 1).

As part of the text pre-processing workflow, we identified the most common words used by the types of organizations examined. For this purpose, we removed all mentions (@) and hashtags (#), all names and surnames of people, common words (stop words such as pronouns, articles and prepositions) in Spanish, Basque, and Catalan, and terms with fewer than three characters, as well as the 1% most and least common terms throughout the corpus (e.g., words such as nursing homes - *residencias* - in Spanish, which were included in most tweets).

Results

In order to identify messaging pattern differences across the different actors, we examined: a) messaging intensity and terms used, b) general and substantive accountability, c) dimensions of substantive accountability, and d) topic prevalences.

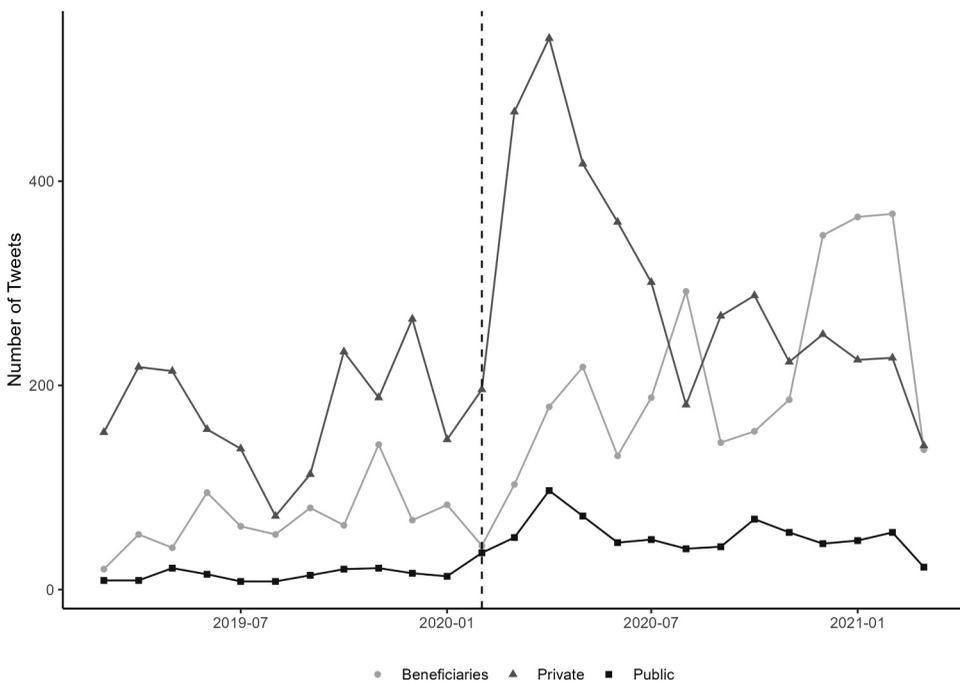


Figure 1. Messaging intensity.

First, we examined the intensity of messaging over the 24 months by actor type. In Figure 1, we can observe an increase in tweets from all actor types following the implementation of the COVID-19 restrictions in March 2020. However, by August 2020, the posting trends of private actors returned to their pre-pandemic levels. Conversely, beneficiary associations maintained higher levels of social media activity throughout the post-restriction period. As shown in Table A2, the pre/post increases were statistically significant across the board, though beneficiaries saw the largest increase in messaging intensity in the post-pandemic period (see Appendix 2).

Regarding the terms used, Figure 2 shows the top 10 pairs of terms (bigrams) by actor and period following text pre-processing. In the case of private actors (which include both for-profit and nonprofit entities), there was a shift in using the platform to communicate aspects related to the working conditions in the sector (e.g., negotiable contracts) to a more general communication tool (e.g., open air and cognitive stimulation). Similarly, beneficiary associations moved from highlighting general deficiencies in care and

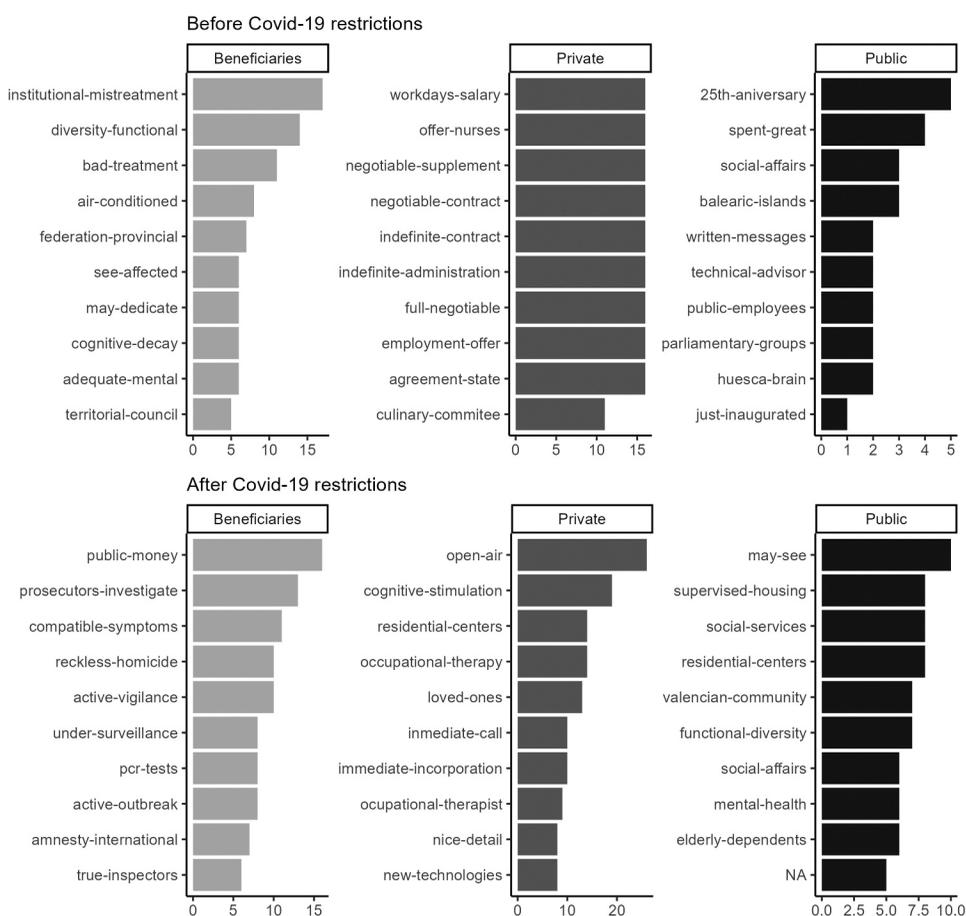


Figure 2. Top bigrams by actor and period.

infrastructure (e.g., bad treatment) to more specific COVID-19-related issues (e.g., PCR tests). In the case of public organizations, there is no clear pattern or shift. It is important to remark, however, that names of specific individuals and facilities were removed from the corpus.

Second, to test our hypothesis on general accountability messages, we conducted a dictionary analysis, which flags the use of core keywords directly related to the conceptualization of general accountability: “*transparency*,” “*information*,” “*inspections*,” “*evaluation*,” and “*sanction*.” In addition, to test our hypothesis on substantive accountability messages, we identify the use of terms that refer to substantive accountability based on the three dimensions suggested by Donabedian (1988) (see the full list of terms in Table A1 of Appendix 1).

Although we expect to find a high number of terms related to general and substantive accountability-related messages, our descriptive analysis indicates scarce references to them, around 1.5% on average across actors. However, Figure 3 depicts that public organizations employ general accountability terms more often than private organizations (aggregating both for-profit and nonprofit), although less frequently than beneficiary organizations. This is true for both the pre- and post-restriction periods.¹ Figure 3 also illustrates that the ratio of general and substantive accountability keywords to total words remains relatively

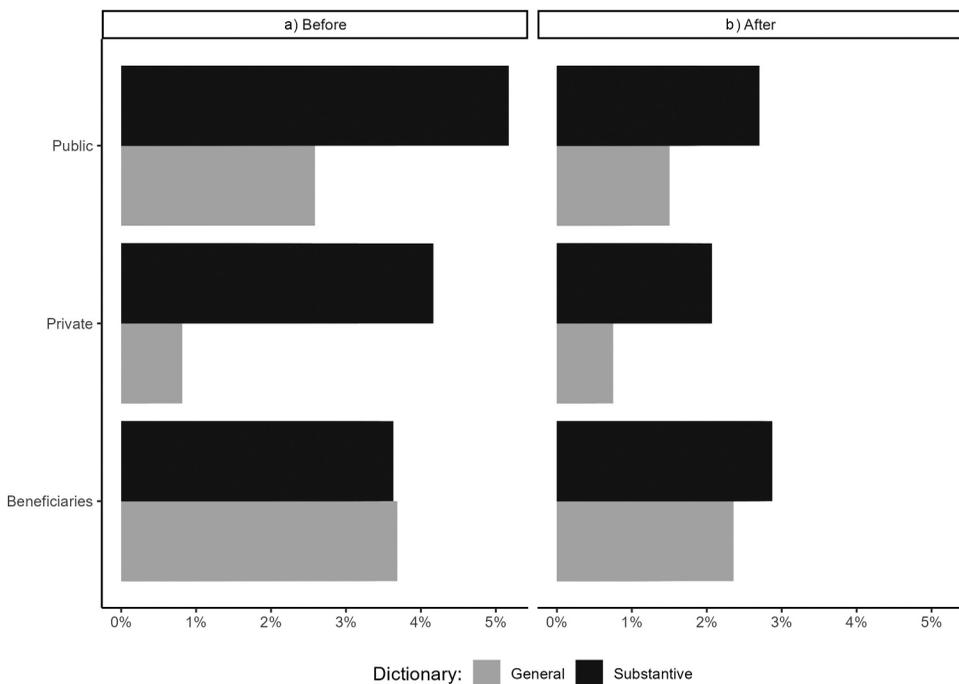


Figure 3. General and substantive accountability.

constant across both periods for all actors, and that substantive accountability terms are more prevalent across actor types and periods than general accountability terms. Nevertheless, as seen in Table A2, there is a slight, yet statistically significant decrease in the ratio of substantive accountability keywords (to total words) used by private actors in the post-pandemic period.

Third, we assessed the use of keywords related to the three dimensions of substantive accountability: processes, outcomes, and facilities, by type of organization. Figure 4 depicts a modest difference in the use of process-related keywords between public and private organizations in the pre-restriction period. Private organizations posted more about processes than any other actor type prior to the COVID-19 pandemic. We also observe that there is little change across the proportion of substantive accountability term ratios for private and public actors between the pre- and post-restriction periods, though there is an overall decrease in the use of these terms after COVID-19 restrictions. Notably, there is a strong and statistically significant (see Table A2 in Appendix 2) increase in outcomes-related keywords from beneficiaries, suggesting that demand-side actors adjusted their accountability messaging priorities to a greater extent than service providers.

Fourth, we employed a Structural Topic Modeling (STM) to explore the differences in topic prevalence among nursing home providers and

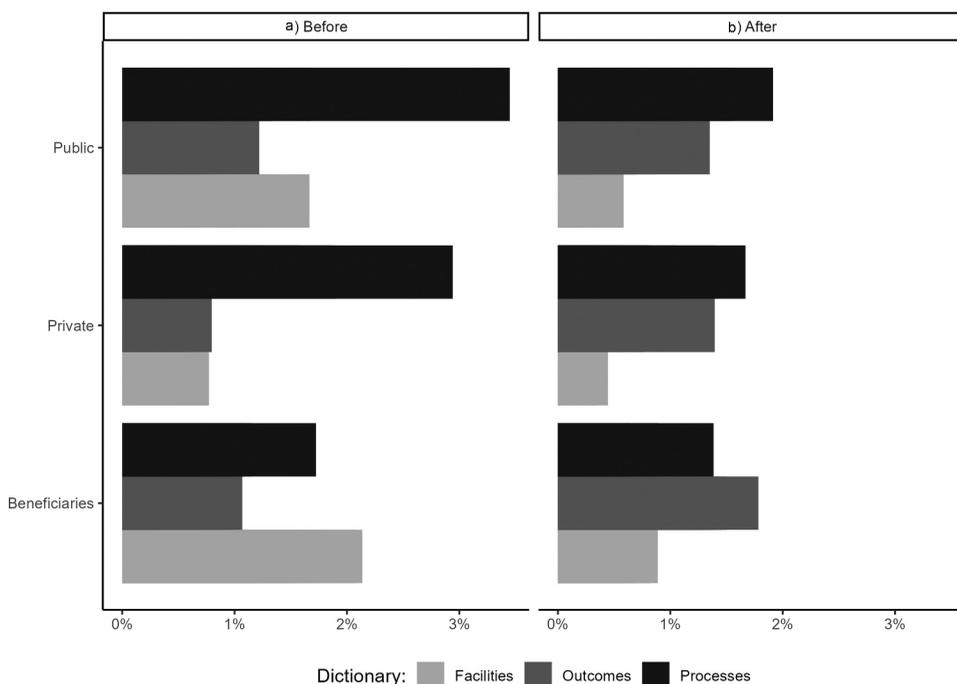


Figure 4. Dimensions of substantive accountability.

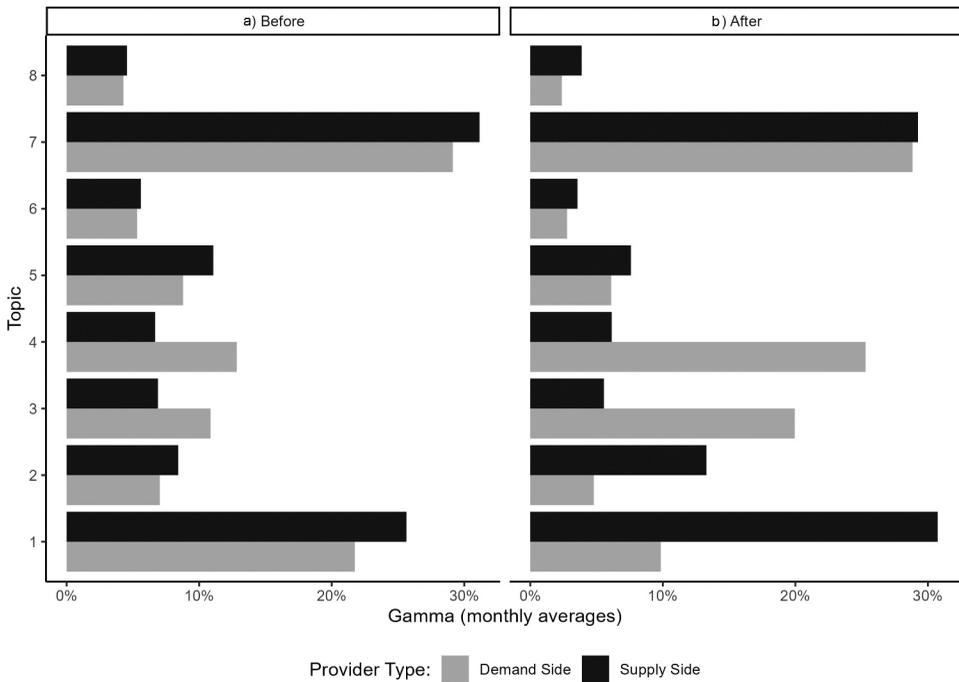


Figure 5. Demand-side and supply-side topic prevalence.

beneficiary associations before and after the implementation of COVID-19 restrictions. STMs are an extension of traditional topic models like Latent Dirichlet Allocation (LDA) but allow for the incorporation of document-level metadata directly into the model (Roberts et al., 2014). We included dates and actor types as prevalence covariates in the model in order to obtain a more nuanced and context-specific understanding of how topics differ across groups before and after COVID-19 restrictions.² Rather than focusing on the content of the topics, we focused on their distribution among supply side (private and public providers) and demand side (beneficiaries associations) actors in the pre and post pandemic period.³

As shown in Figure 5, topic prevalence distributions in the pre-pandemic period are roughly the same between demand and supply side actors. Nevertheless, this thematic structure changes following restrictions, as demand-side actors focus more on topics 3 and 4 and supply-side actors refer more to the word-pair clusters (bigrams) in topic 1. As shown in Figure A2, the before/after shift in the use of topics 1, 3, and 4 is statistically significant for demand-side actors. Though there are changes in the thematic structure of supply-side actors in the post period, these are of lower magnitude and significance. Thus, rather than convergence between the supply and demand side of the accountability relationship, we observe divergence, with demand-side actors shifting their thematic structures to a greater extent than supply-side actors.

Discussion

This study provides evidence of important shortcomings in accountability-related messages observed in all types of organizations involved in service provision. Messages posted by both public and private organizations show little concern in dealing with the general aspects of the transparency, control, and oversight of services, as well as with substantive components of the quality of their structures, processes, and outcomes. Accountability-related terms account for less than 2% of all (processed) terms across the board. Although organizations involved in providing services carry out intensive communication campaigns on social media outlets, our study reveals that they do not discuss general and substantive accountability messages of these services. A possible interpretation is that organizations involved on the supply side adopted a more defensive communication and reputation-oriented strategy during times of crisis, particularly, one that is unrelated to the general or substantive concerns of relatives of residents' relatives.

In addition, the dictionary analysis showed that public organizations are slightly more likely to use general accountability messages than private ones, especially in non-crisis periods. Furthermore, when examining the different dimensions of substantive accountability, we find that supply side actors decreased their use of some substantive accountability keywords (Private/Processes and Public/Facilities), whereas beneficiaries increased their use of outcomes terms and significantly decreased their references to facilities following COVID-19 restrictions. In addition, though the number of messages posted by nonprofit organizations is small, we find a greater increase in the use of outcomes keywords by these organizations when compared to private for-profits (see Table A2 and Figure A1 in Appendix 2).

Furthermore, this study suggests that private organizations (both for-profit and nonprofit) are more likely to use terms related to service processes, but only during the pre-pandemic period. This finding is in line with a previous study by Broms et al. (2020), who found that these actors are more likely to perform better in aspects related to the quality of processes, such as those focused on updating care plans. As expected, we identify that the demand side is more likely to use terms related to the substantive elements of the services. Before the COVID-19 outbreak, their messages concentrated on elements related to the structures of the services (e.g., staff ratios and physical structures). After the onset of the pandemic, the messages were more aware of the outcomes of the services.

Finally, we find that, rather than convergence, there is a divergence in the themes addressed in messages issued by supply and demand side actors during the crisis period. Though the topic prevalence distribution across the actors is relatively similar in the pre-crisis, we observe a shift in the proportion of topics

in messages by beneficiaries, suggesting that demand-side actors changed their messaging strategies in response to the crisis whereas supply-side actors did so to a far lesser extent. The absence of converging messages is in line with Amirkhayan et al. (2019), who argue that blurred communication in the sector, devoid of any substantive content, fails to engage with client preferences and negatively impacts the quality of services.

Limitations

This study has some limitations. In a recent study, Broms et al. (2021) provided evidence of differences in service quality among different types of private providers. Similarly, Meier et al. (2022) identified core differences between nonprofit and for-profit organizations. Particularly, they provide evidence of anti-for-profit sector bias, which suggests that caution should be exercised regarding the “grouping of for-profit and nonprofit providers in assessments of public service delivery” (Meier et al., 2022). However, in this study, we found that nonprofit organizations posted very few messages that refer to accountability aspects. This limited number of observations does not allow us to provide robust results regarding the language used by nonprofit organizations. Further analysis would be beneficial for investigating other sources of information-sharing and the differences between for-profit and nonprofit providers.

Furthermore, the use of dictionary analysis and STMs to assess changes in the accountability discourse of tweets presents several limitations that warrant consideration. Regarding the dictionary analysis, the predefined categories may not capture the nuances specific to the context of nursing homes, particularly during a crisis period such as the COVID-19 pandemic. Furthermore, this approach assesses keywords without accounting for the broader syntactic or semantic context. Nonetheless, given the inherent brevity and focused nature of tweets, the absence of broader semantic context in our analysis is less of a limitation than it might be in longer, more complex texts. Additionally, the dictionaries employed were specifically designed based on a comprehensive review of accountability theories, further mitigating the need for broader contextual interpretation.

Similarly, topics generated by STM are probabilistic groupings based on word co-occurrence, and their interpretation can be subjective and require domain expertise. Furthermore, the quality of STM results is highly dependent on external parameters, such as tokenization and the selection of parameters such as topic number (K), which can introduce biases. To account for these limitations, we focus on the measurable prevalence of topics (i.e. how frequently a specific topic appears across all tweets), rather than attempting to interpret their content, and select parameters based on objective fit tests (i.e. residuals).

While this study offers insights into the previously unexplored accountability language used in social media by actors involved in nursing home services, especially during crises; subsequent studies could benefit from a granular focus on the contributions of individual facilities as providers, as well as exploring alternative channels of communication. Additionally, future research should examine whether greater competition encourages providers to communicate more about the core aspects of accountability.

Conclusion

This study investigated whether the social media messages of actors involved in the provision of nursing home services, both private and public, incorporate general accountability terms such as transparency, oversight, and service control. Additionally, we examined the presence of more substantial accountability-related messages that convey information about the quality of the structures, processes, and outcomes of these services. As the COVID-19 outbreak has primarily affected older adults living in these types of facilities, we examined whether accountability messages changed during various stages of the crisis. Our analysis suggests that the supply side of services placed low emphasis on accountability-related messages (both general and substantive) before and after the outbreak. Moreover, public organizations are slightly more prone to employing general accountability terminology than private organizations, although not as frequently as organizations representing beneficiaries. While further semantic analysis is necessary to delve deeper into message meaning, our findings suggest that public organizations are more prone to employ terms related to general accountability, such as “control,” compared to their private counterparts. Nevertheless, the levels of attention paid to accountability-related messages are low.

Furthermore, we investigated the convergence of messages posted by both the demand side and the supply side of the services. The analysis illustrated a mismatch between the messaging conveyed by the supply and demand sides, indicating a breakdown in communication within accountability associations. While the organizations of residents’ relatives include terms related to general and substantive accountability, the messages provided by the supply side (both public and private) do not align with these concerns. Crisis communication scholars emphasize that government officials are more likely to prioritize communication strategies that allow them to mitigate any potential damage to their reputations. However, the use of this reputation strategy limits its ability to respond effectively to the needs of the public, which may lead to a disconnection between what the government is communicating and what the public expects or requires during a crisis (Zhong et al., 2023). This is not different for private organizations, as some studies argue that they are also more likely to follow reputation-oriented strategies (Olsson, 2014).

Consistent with these prior studies, our findings suggest that the supply side of these services predominantly employed a reputation-based communication strategy before and after the outbreak. This approach may have led to a disconnection between messaging and the concerns of the residents and their relatives, potentially impeding their ability to respond effectively. This communication gap can have significant implications and repercussions on crucial governance aspects of services that are necessary for their sustainability and quality. These aspects include the responsiveness of providers, who may be perceived as distant from the concerns of beneficiaries and the trust placed in services by beneficiaries and various key stakeholders. Failing to engage in meaningful communication concerning substantive matters may cause primary beneficiaries and stakeholders to perceive that service providers are not delivering services with competence, benevolence, and integrity. Hence, to strengthen accountability messages, risk communication should provide value to service beneficiaries by employing transparent and trustworthy messaging (Guidry et al., 2017). This is crucial because effective communication and accountability-related messaging rely on providers' ability to address and engage with beneficiaries' concerns.

Key points

- The accountability-related messages of these services had low priority before and after the COVID-19 outbreak.
- There is a communication breakdown between beneficiaries and providers of the services.
- Accountability mechanisms for nursing home services should be founded on an understanding of the service beneficiaries' needs and expectations.

Notes

1. We also disaggregate the dictionary analysis by distinguishing between private for-profit and nonprofit organizations, however, find a similar trend. This analysis is presented in the Appendix (Figure A1).
2. After testing several model fits, we selected the STM parameter K at 8 topics based on the residuals graph, where the dispersion reached a trough at this point. This suggests that an 8-topic model offers a good balance between complexity and fit to the data (see Figure A3 in Appendix 2).
3. The breakdown of the top 10 terms (in Spanish and Catalan) by topic are available in Figure A3 in Appendix 2.

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