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"Organizational Resilience and Organizational Learning in the Health Sector"

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Firma (signature)

Paola Della Zassa

A mia zia Loredana, che vorrei fosse qui.

To my aunt Loredana, who I wish were here.

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ABSTRACT

The objective of this thesis is to facilitate the understanding of the resilience of healthcare structures after the Covid-19 pandemic crisis by providing a contribution to a national research project on organizational resilience.

The first chapter, after analyzing the notion of "crisis," focuses on identifying and defining the concept of organizational resilience, distinguishing its various key aspects. In particular, the first aspect involves the implications of organizational resilience on leadership. A definition of resilient leadership is then provided, a notion that merges with other leadership theories and styles, which are adequately reported. The second aspect involves the concept of organizational learning, an essential element of organizational resilience. Organizational learning is a complex process (much more complex than individual learning) that is based, among other things, on the knowledge and memory of the organization. The first chapter presents, analyzes, and explains Kahn's theoretical model of organizational resilience, which is the theoretical reference point for this thesis. This model is based on the study of dynamics between organizational groups to determine if and how resilient a company is. These dynamics can be of collaboration or rejection, and the factors influencing these dynamics are rooted in group theory.

The second chapter provides a detailed and in-depth description of the functioning of the Italian healthcare system, which ranges from the national to the local level, through regional and district levels. The right to health is a fundamental right of Italian citizens, taking the form of LEAs (essential levels of assistance), whose distribution across the national territory is ensured by the state, while their management is the responsibility of the regions. The thesis adopts specific geographical horizons corresponding to those of the Veneto region, whose healthcare system is described with a focus on the characteristics of hospital structures. After analyzing the concept of health crisis or emergency, whose definition and classification are ambiguous, a brief analysis of the key characteristics of organizational resilience in the medical field is presented, as its uniqueness and social importance make it significantly different from any other company. In particular, the analysis of the trade-off between resilience and safety is fundamental for understanding the resilient dynamics of the healthcare context. Finally, practical references to the management of the Covid-19 pandemic by the national and regional healthcare systems are included.

The third chapter collects the contribution of this thesis, which is divided into two distinct parts. The first part focuses on the thematic analysis of interviews with hospital staff members. The interviews aim to identify how hospital work changed during and after the pandemic period, what innovative elements were introduced, and if, how, and why they survived or did not survive in the post-pandemic period. The second part of the chapter presents, in light of the theoretical foundations provided by the first two chapters and the information emerging from the interview analysis, a series of measures of the identified fundamental elements. These measures will be part, with the necessary adaptations, of a questionnaire that will be administered to hospital staff, based on a protocol yet to be defined, for the analysis of the resilience of the healthcare structure.

CHAPTER 1

INTRODUCTION

The notion of resilience has been the subject of numerous studies in many fields of knowledge. Furthermore, the concept of organizational resilience has been used in many fields, such as ecology, psychology, and economics (Chen et al., 2021).

An important contribution to the literature is embodied by the study by Kahn "The Geography of Strain: Organizational Resilience as a Function of Intergroup Relations" (Kahn et al., 2018). The article builds on a general definition of organizational resilience as the ability to "bounce back", i.e. the organization's ability to absorb stress and preserve (or even improve) performance and functioning. This definition, as most studies on organizational resilience, looks at the organization "as a whole"; instead, Kahn's paper challenges this assumption and "breaks down" the resilience process into dynamics between parts of the organization. His work is the basis for this thesis. This chapter provides an exhaustive analysis of the concept of organizational resilience, resolved into its main aspects, including the definition of crisis, resilient leadership, and organizational learning, for each of which both the general take from the scholarship and the innovative take from Kahn's paper will be presented. Furthermore, to give a complete overview of the topic of resilience, it briefly discusses the definitions of crisis, organizational learning, and resilient leadership.

1.1 DEFINITION AND CLASSIFICATION OF CRISES

The term "organizational resilience" identifies a specific responsive behavior of an organization during a crisis. Therefore, before diving into the analysis and definition of organizational resilience, it is crucial to define what "crisis" is, specify and categorize all crises, and identify the types related to organizational resilience. Defining "crisis" has been complex, since it is influenced by many factors, such as the time frame, the speed, the ability of the organization to foresee it, and even the perception of the organization (i.e. the expected losses due to the crisis). A thorough study (Milburn et al., 1983) bases the conceptualization of organizational crisis on three major aspects. The first aspect is the analysis of the antecedents of the crisis, including the evaluation of the external and internal environment. The second aspect is the analysis of the responses, which can be individual or organizational. Lastly, it is important to address the

moderation effects of the antecedent-crisis or crisis-response relationships. Based on these elements, the paper identifies eight different types of crises, distinguished by three dimensions. The first dimension is the level of control that the organization holds over the external environment. The second dimension is the positive or negative perception of the crisis from the organization’s point of view. The third dimension is the level of organizational susceptibility (i.e. the likelihood that the organization has a crisis and would not respond efficiently, at least in the beginning).

A general but functional way to categorize crises is to distinguish them into “abrupt” and “cumulative” (Hwang & Lichtenthal, 2000), a lexical distinctiveness that derives from engineering studies about the probability of fracture of materials or components. This categorization is based on different key dimensions of the crisis: build-up speed, predictability, specificity, crisis recognition, trigger point, probability of occurrence, and misalignment with the environment. Abrupt crises are rapid, rather unpredictable, and highly specific. They are easily recognized, are triggered by specific events, and their probability of occurrence is constant in time. They involve only one or a few misalignments with the environment. On the other hand, cumulative crises are rather slow, easily predictable, and not very specific. They are harder to recognize, they are triggered by the reach of threshold limits, and the probability of their occurrence increases in time. They are associated with many misalignments.

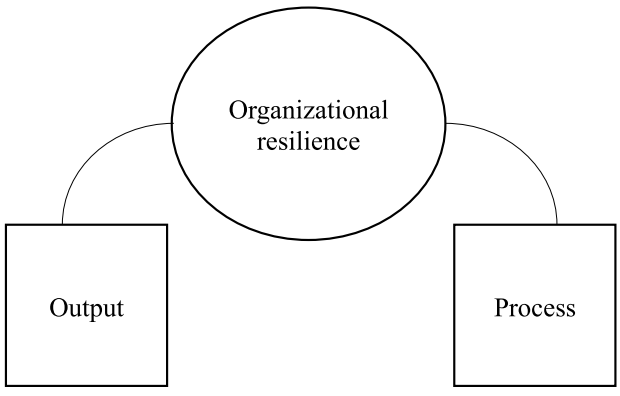
The temporal aspect of the crisis is particularly important for classification. Intuitively, it is logical to separate sudden, brief, and powerful crises from subtle, increasing over time, long-term crises. Keeping these lines in mind, for organizational resilience, crises have been classified as “acute shocks” and “chronic challenges” (Barasa et al., 2018). Acute shocks are sudden and transient, whereas chronic challenges are persistent and recurrent over long periods. It is important to note that most of the scholarship regarding organizational resilience is focused on what we have defined as acute shocks or abrupt crises. Kahn’s paper also mentions the lack of focus on less sudden, more slithering kinds of crises throughout the organizational resilience literature. The paper underlines how critical it is to understand that adversity, and a generally negative operational situation, come not only from catastrophic errors and disasters but comes as well, if not foremost, from “challenging risks, stresses, and disruption of routines” (Kahn et al., 2018, p. 5). Both types of adversity involve strain, the variables are when and where the strain manifests. The reason for analyzing crises is that the organizational response magnitude depends on the crisis itself: during major crises, the organization (as a whole) is likely to

perceive strain throughout its parts and acts consequently, whereas, during minor crises, strain is perceived differently among the organizational parts, leading to a more disjointed response. “Creeping developments” identify that class of adversities that engage specific parts of an organization and are unfolding situations that advance over time leading to an adverse situation. Therefore, “creeping strain” is the gradual development of a negative condition that stretches resources to the point of the inoperability of specific parts of the organization. The result of strain is the formation of lingering fissures within the organizational tissue. The depth of these fissures is determined by the organizational (adjoining and focal) parts' response to the strain. The most likely organizational parts to be subject to this kind of strain are the front lines, between the organization itself and the external environment, because they are more easily faced with overwhelming demand. This differentiation of strain distribution among parts allows us to outline the “geography of strain”: “focal parts” are directly experiencing strain, and “adjoining parts” are the unaffected parts all around the focal parts.

The evaluation of the crisis is therefore fundamental to the understanding of the organizational resilience process, as is the consideration of the effects of minor disruptions on organizational life as well as the impacts of major shocks.

1.2 ORGANIZATIONAL RESILIENCE: DEFINITION AND ANALYSIS

Now that the necessary condition for organizational resilience has been analyzed, it is possible to study the concept of organizational resilience itself, keeping in mind that most scholarship does not include an analysis of crisis as a relevant element in defining organizational resilience.

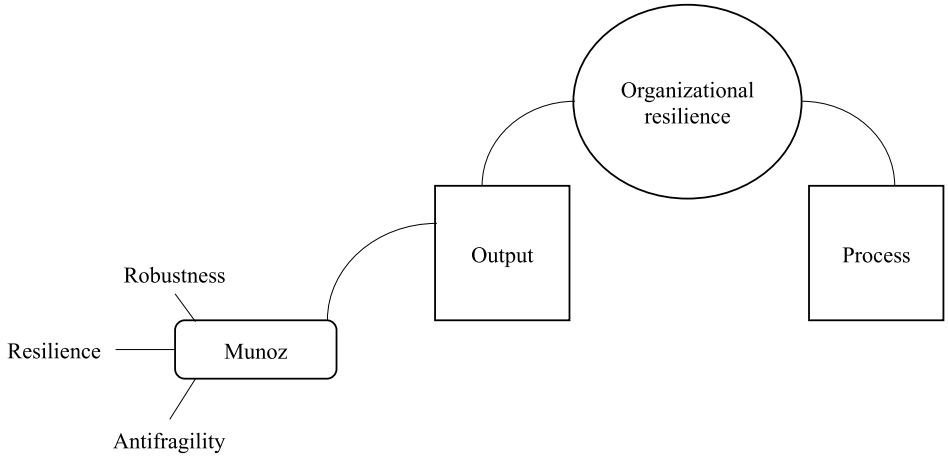


1. Organizational resilience: output or process - personal elaboration

1.2.1 Resilience as an outcome

If organizational resilience is considered an outcome, then the term has been used broadly to describe the positive results of an organization’s activity during and after a crisis. It is an umbrella term, that encompasses different aspects, such as the ability to withstand shocks, the ability to regain previous performance levels, and the ability to have better performance after the shock. Breaking down this broad term into its different aspects is valuable for research purposes. The notion of resilience is a compound and includes distinct, but intertwined, outcomes of resilience, robustness, and antifragility (Munoz et al., 2022). Resilience is defined as the ability to resist the impact of a disruption and bounce back and recover from it. It is clear how this definition can be broken down into elements. Robustness is the ability to maintain, cope, and withstand, whereas actual resilience is the ability to recover. Robustness is tied to the system’s sensitivity to exogenous factors and is exhibited as the system’s sturdiness in front of these factors. Robustness is gained by holding redundancies, reconfiguration options, slacks, and safety stocks. Systems can be robust but not resilient, with the difference that robust organizations can only assimilate disruption up to a point, after which it suffers (irreversible) operational decline, meaning that robustness has a finite capacity. Resilient systems, conversely, can restore normal functionality after a temporary degradation. Another concept associated with resilience is that of growth, an increase in performance relative to the pre-crisis level. This can be ascribed to another resilience-adjacent notion: antifragility. Antifragility is defined as a system’s performance gain when exposed to shock or crisis, it is the ability to prosper in the face of adversity. Antifragility, therefore, is an “added bonus” to resilience: antifragile systems not only “survive” the crisis repristinating their initial situation (an ability completely attributable to resilience), but they can also better themselves. From these definitions of robustness and antifragility, it is possible to obtain, by subtraction, the definition of resilience: it is the restoration of the status quo, the “bouncing back”, without permanent damages or gains.

By these definitions, through the optic of resilience as an outcome, an organization undergoing a crisis can emerge as failed, robust, resilient, or antifragile. These considerations can be applied to the concept of resilience as a process as well, but per the consulted scholarship, the term “resilience” here is used in its wider meaning, including aspects of robustness and antifragility.



2. Organizational resilience as an output - personal elaboration

1.2.2 Resilience as a process

Another way of looking at organizational resilience is to consider it a process. In this perspective, organizational resilience is, once again, the organization's ability to continue meeting its goals even during hard times, by absorbing and adapting to changes. As with any process, resilience can be divided into phases. It is possible to define resilience as a function of different dimensions. The first dimension is called "planned resilience" and the second dimension is called "adaptive resilience" (Barasa et al., 2018). Planned resilience is the organization's activity of employment of pre-existing plans, such as business continuity or risk management plans, that dictate instructions to operations during a period of crisis. Adaptive resilience, instead, involves post-crisis activities, through which the organization can develop new capacities (to be employed during the next crisis). These two aspects are both crucial: planning is very important but not sufficient for the survival of an organization during a crisis. Not every system gets to be resilient: only Complex Adaptive Systems (CAS) present resilience as an emergent property. These systems are characterized by self-organization and emergence (Barasa et al., 2018). Self-organization is the ability of the system's components to mutually adjust their configurations based on environmental signals. Emergence is the surfacing, within the system, of unpredictable outcomes, such as new behavioral patterns and structures (Barasa et al., 2018). Organizational resilience can be influenced by many factors. Material, financial, and human resources account for the first factor: the availability of resources is key to organizational operability. The physical (and financial) capacity is thoroughly mentioned in Kahn's paper as well, as it will be exposed later. Secondly, as already mentioned, adequate planning is crucial for organizations to prepare to face crises, especially if the organization's

members have been trained with scenario exercises. The third factor is information management, which influences the organization's situational awareness, i.e. the organization’s perspective and understanding of its environment. A fourth, very important, factor is the development of collateral pathways and redundancy. Collateral pathways boost resilience by providing an alternative course of action to achieve the same goal. The creation of alternative solutions is a core concept for CASs. Redundancy is the arrangement of extra components. A similar notion is embodied by the concept of slack as mentioned in Kahn’s paper, as it will be later better exposed (Kahn et al., 2018). Certain governance practices are also considered to be influential on an organization’s resilience. Generally, more decentralized organizations, characterized by a more distributed, horizontal form of control, have more flexibility, which facilitates timely responses to big shocks, but, most significantly, to everyday challenges. Usually, this governance configuration also presents some forms of deliberative democracy, based on which decisions are taken through deliberations rather than mere voting, enhancing the organization’s members’ trust, motivation, and commitment. Furthermore, these organizations usually have a higher degree of coordination among different functions, improving effectiveness and efficiency. A further influential factor is organizational culture because it can support creativity, necessary to the organization’s ability to adapt, through providing time and resources for experimentation, tolerance for failure, and, generally, an atmosphere in which employees feel safe to share new ideas. Furthermore, it can shape the organization’s attitude towards crisis (both acute shocks and everyday challenges), making sure that the (resilient) organization’s members perceive crises as opportunities to learn and grow, and it can enhance organizational learning. Organizational learning is a fundamental concept deeply intertwined with organizational resilience and will be fully developed later in the thesis. The same goes for organizational leadership, which also plays a crucial role in outlining an organization’s resilience and will be further investigated later. Lastly, social networks and collaborations are influential, because they facilitate the transfer of knowledge and expand the resource pool. A similar concept, relative to the relationship among parts of an organization, is central to Kahn’s take on organizational resilience.

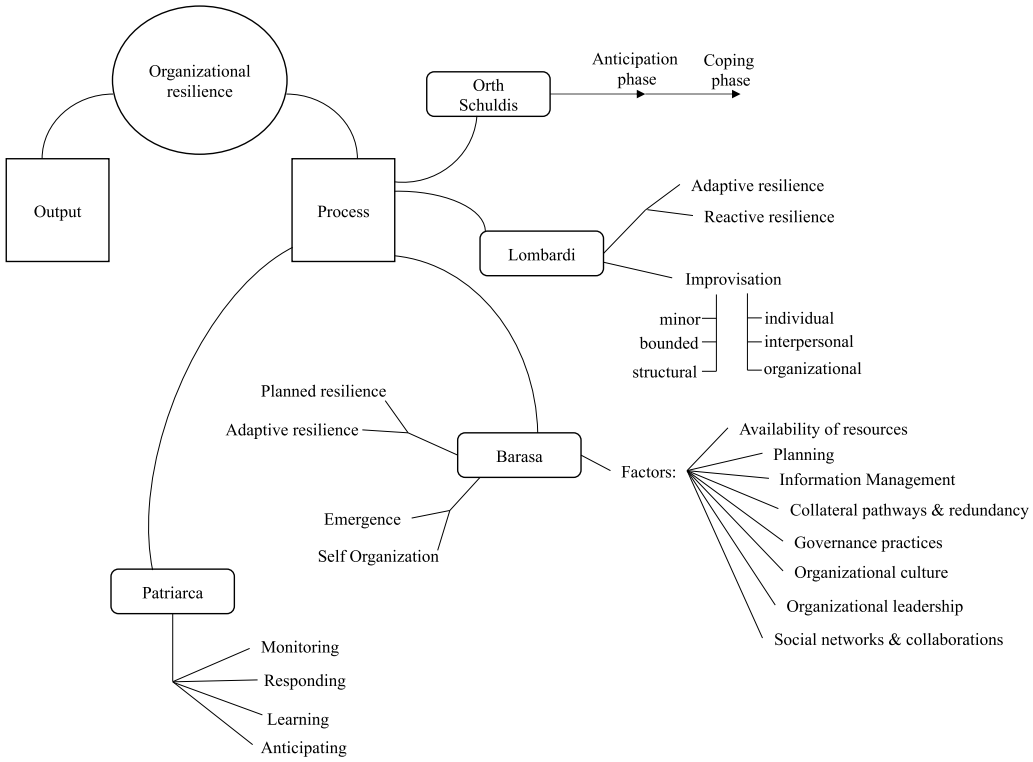
Another important study (Patriarca et al., 2018) on organizational resilience defines it as a process composed of four major cornerstones: monitoring, responding, learning, and anticipating. Monitoring is the activity of gathering information on the system’s performance during normal functioning, by using leading indicators (i.e. anticipations of events yet to

happen) and lagging indicators (i.e. observations of happened events). Responding is the activity of coping with signals and inputs from the environment, filtering them, and providing on-time responses. Learning involves acquiring knowledge from accidents, rare events, minor events, or normal functioning. As already mentioned, organizational learning is going to be further analyzed in due course. Anticipating is the activity of forecasting future events based on historical data. It differs from monitoring in the time frame of observations: anticipating generally extends the focus of leading indicators to deal with long-term changes, threats, opportunities, and other potential states.

A division into subsequent phases of the resilience process is also possible (Orth & Schuldis, 2021). The first phase is called the “anticipation phase”: it involves activities of observing, identifying, and preparing for crises. The second phase is the “coping phase”: it implies the acceptance of the problem and the development of solutions. Finally, the third phase is the “adapting phase”: it covers reflecting upon past experiences and learning for future situations.

At length, another study (Lombardi et al., 2021) defines resilience as a process, a complex network of variables that outline the capacity to assimilate adversity, trauma, external shocks, or any significant source of stress, while learning from it and preparing for future changes. Organizational resilience involves two interrelated dimensions: “adaptive resilience” and “reactive resilience”. Adaptive resilience is the expression of the organization’s absorptive capacity. Reactive resilience manifests itself in the ability to explore shocks and negative changes as sources of new information and learning material, underlining the importance of cultivating preparedness to face changes and the swiftness in adopting new practices when necessary. The latter literature piece mentioned (Lombardi et al., 2021) highlights “improvisation” as the predominant trait of organizational resilience. Improvisation is defined as “the capacity to respond in the absence of planning with the available rather than with the optimal resources” (Lombardi et al., 2021, p. 2). Individuals and organizations are required to show improvisation skills to successfully overcome crises, while they get overwhelmed if they completely rely on ordinary procedures during extraordinary times. Improvisation unfolds only at the right conditions. The first necessary condition is extemporaneity, which is the convergence of design and performance. The second condition is novelty, which is the creation of novel actions, at least to some degree. The third condition is intentionality, which is the deliberateness of the design that is created during its own enactment. Improvisation is manifested at different levels. At the individual level, it is when an individual changes their behavior in response to new information or stretches beyond routines to deliver new solutions.

Improvisation at the interpersonal level occurs in teams where changes in behavior result from multilateral actions and pressures, thanks to the plurality of feedback given. Lastly, at the organizational level improvisation not only denotes the ability of the whole organization to change behavior but also the formalization of structures and practices that enable improvisation in every organizational junction. Furthermore, improvisation differs in degrees, as in how strongly affects the organization and the organization’s members and their behaviors. Minor improvisations happen when existing tasks are performed differently, leading to a reconfiguration of existing processes. Bounded improvisations happen when a new behavior is adopted to pursue an existing goal. Meanwhile, structural improvisations happen when new courses of action are taken to achieve new objectives. Additionally, the paper (Lombardi et al., 2021) highlights the crucial role played by the organizational leader in fostering resilience within the organization. The major impact of leadership on the degree of resilience in an organization has been analyzed in depth, therefore it is appropriate to better explore the topic later in the chapter. What is important to say here is that resilient leadership requires a variety of complex and paradoxical actions involving different time frames, because resilience is a process that implies both the capacity to react to challenges in a manner that is cultivated with long-term orientation and the capacity to respond to challenges that require immediate actions and solutions.



3. Organizational resilience as a process - personal elaboration

1.2.3 Kahn's "Geography of strain": a theoretical milestone

With this overview of the scholarship about organizational resilience in mind, it is time to analyze Kahn's contribution (Kahn et al., 2018), which is the main foundation of this thesis.
The paper "rejects" the concept of resilience as a response of the whole organization to crises, or rather, it accepts this definition only in the case of full-blown crises that involve every part of the organization equally and simultaneously. In the case of minor crises, defined as creeping developments, creeping strain is generated and it affects some parts of the organization (focal parts) more than others (adjoining parts). The modalities in which focal and adjoining parts deal with each other and (do not) share resources to alleviate strain determines the organization's overall resilience.
The definition of creeping strain has previously been given - a type of crisis that presents itself as focalized in certain parts of the organization - is the major focus of the paper (and therefore of this thesis). As already mentioned, it is generally correct to assume that focal parts are located on the front lines, where they are more vulnerable to external stress factors. The paper theorizes three possible pathways (i.e. reactions) that can be adopted by the adjoining parts in response to the focal part's strain. These pathways reflect the possible reactions that groups have to the

strain endured by other groups: turn away, turn toward, or remain still. Before moving on to the description of the three possible pathways that adjoining parts can pace, it is important to go over the intergroup relation theory, to have a theoretical basis for how groups are formed and how they relate to each other.

Group theory: how people interact in the organizational context

People organize themselves into groups based on similarities among people within the group and differences with people outside the group. This theory can be applied to social contexts, in which people agglomerate based on various characteristics, but for organizations such as those studied in this thesis, the division is, quite easily, a carbon copy of the formal hierarchical structure. Nevertheless, groups dynamic holds the same characteristics as any other context, and the predominant trait that determines that dynamic is the nature of the groups' boundaries. Boundaries are the limits that define a group, and the strength of these boundaries determines the relations among groups. The permeability of boundaries is defined as the perceived feasibility of moving in and out of a group, or in and out of other groups (Armenta et al., 2017). Permeability is shaped by two important factors (Kahn et al., 2018): the alignment of the groups’ interests, and the groups’ power distribution. When groups have akin interests, boundaries loosen up and become blurry, whereas when groups have very different interests, boundaries are stiffer. When the power dynamic is lopsided, the more powerful group can deny access to resources to other groups, reinforcing the boundaries, or it can force the other groups to give up resources, forcibly removing the boundaries. The importance members of an organization give to groups and groups’ identification is a strong determinant of how they will act during a crisis. If the members of an organization mind the group identification over the organizational identification, then it is more likely that, during a crisis, they will establish a competition over resources, rather than a collaborative relationship. Therefore, the permeability of boundaries between the focal and adjoining parts, and whether adjoining parts’ members value organizational identification over group identification determines the behavioral pathway of the parts.

Another important agent in the adjoining parts' decision-making procedure is where they allocate the blame for the strain. The creation of accounts is the mechanism by which parts distribute blame. Accounts are “discursive constructions of reality that describe or explain unfolding situations, imbuing them with meaning that shapes subsequent group action” (Kahn

et al., 2018, p. 7). Essentially, through accounts, they state whether focal parts are to be blamed for the strain they are enduring, and, consequently, whether they deserve to be helped.
Since it is established that the main determinants of groups' dynamics are affinity of interests, power imbalance, and allocation of blame, it is time to analyze the three possible pathways.
All three pathways imply three interrelated phases. The first phase is the creation of accounts by adjoining parts that determine their response to the focal part. The second phase is the preservation or modification of the adjoining parts identification. The third phase is the state of organizational resilience as a result of the adjoining parts' reaction: it can be fragmented or synchronized.

Pathways: the possible reactions to strain

Integration is the first pathway; it corresponds with the immediate reaction of turning toward the focal part. It consists of maintaining synchronicity between the parts. Adjoining parts create accounts that assign blame to the situation, to the organization as a whole, or to other adjoining parts. The boundaries between focal and adjoining parts are very permeable, therefore all members join to create a larger whole: adjoining parts' members change the way they identify themselves, creating coherence forces to contrast the destructive pull of strain, and minimizing fissures caused by the strain. This results in a stronger "social fabric" within the organization, leading to a stronger awareness of weak signals from the front lines, and a shared care and focus on the organization. The organization emerges stronger and less vulnerable to crises.
Disavowal is the second possible pathway, and it corresponds with the reactions of turning away or remaining still. Adjoining parts' accounts blame the focal part for its strain. Disavowal could also be partially interpreted as the adjoining parts' defensive response triggered by the focal part's stress. Furthermore, disavowal could be provoked by the focal part as well: the focal part could develop its accounts by which it blames adjoining parts for the strain it is enduring and forms self-victimizing narratives. As a result of these complementary accounts, boundaries remain very solid and impermeable, and adjoining parts' members strongly identify with the group rather than with the organization. Focal and adjoining parts are unable or unwilling to come together and synchronize efforts to address strain. Even when strain declines, adjoining parts could uphold the idea of incompatible interests, consequently reinforcing the same dynamic for future crises, and possibly deepening existing fissures or creating new ones. As a result of the disavowal pathway, the organization is fragmented, and it lacks a unifying identity by which all members identify. This fragmentation hinders the distribution of resources

among the parts and worsens the organization’s brittleness. Brittleness is the inability of the organization’s members to positively adjust in order to reduce strain.

The last pathway is reclamation. It involves an initial distancing (disavowal) of the adjoining parts from the focal part, but then they reconnect. The change in the adjoining parts’ behavior characterizes this pathway, and the timing and nature of reclamation determine the ultimate result. This shift is activated by a mutation in the accounts: the blame that was initially charged to the focal part is now laid on the situation or the entire organization, consequently, the boundaries weaken, and the adjoining parts join the focal part. Sometimes, the temporal disavowal of adjoining parts is necessary: it allows them to gather resources and stabilize themselves before helping the focal part, to prevent being overcome by the strain. The time span before reclamation is referred to as “quarantine”. The duration of the quarantine can either minimize or aggravate existing fissures, or it can create new ones, depending on the timing of reclamation. There exist “quarantine-related tipping points” in time, after which the focal part situation is too severe for the reclamation to be effective. If the reclamation takes place swiftly and fully, members of the adjoining and focal parts are still able to cooperate effectively and reduce the strain; if, instead, the reclamation is too tardy or superficial, members of the parts are unable to connect properly, leaving the organization damaged, fissured, and vulnerable.

Streamlining the adjoining parts course, two main key junctures are identified. The first juncture happens when the focal part is overwhelmed by strain and requires the help of adjoining parts: adjoining parts either move toward integration or choose to disavowal. The second juncture only presents on the disavowal pathway, and it can occur at any time: adjoining parts can stay on the path or can move to reclamation.

Factors influencing the pathways

Other important factors determine the pathway chosen by the adjoining parts, besides those described by the inter-group theory.

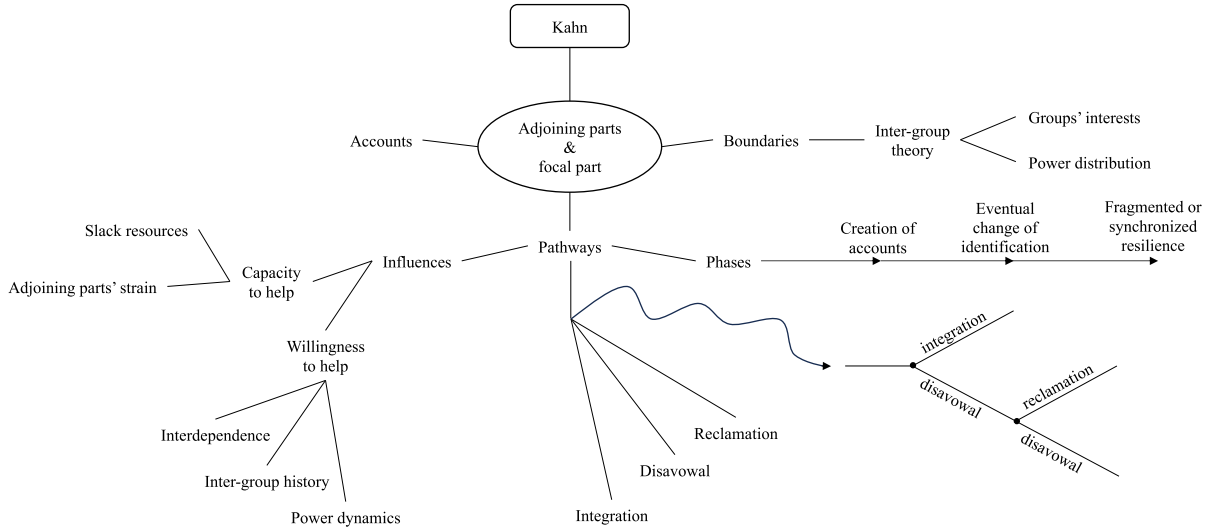
The first is whether adjoining parts have the capacity to provide help to the focal part. This capacity is defined by the presence of slack resources, that exceed those necessary to the adjoining parts to function and operate properly. Slack resources take different forms. They can be available, i.e. not yet employed in any part of the organization. They can be recoverable, i.e. they can be shifted from their current employment. Finally, they can be potential, i.e. newly generated ad hoc by the organization’s members. The adjoining parts’ capacity is also determined by whether they are facing strain as well or not. If they are also involved in a crisis,

they might need their slack resources for themselves, and cannot afford to give them up to the focal part. Furthermore, the fact that they are also stressed could prevent their ability to synchronize with the focal part, as they would also become focal parts.

The second agent in determining the pathway is the adjoining parts' willingness to help. This aspect relates more to the concepts exposed in the inter-group theory. The adjoining parts' disposition to help is influenced by the pre-existing relationship with the focal part and particularly by the eventual interdependence between the parts. Interdependence could aid the identification of the focal part as "in the group", making boundaries permeable, but it could also lead to a lack of defenses towards the strain and an immediate capitulation of the adjoining parts, without them being of any help. The basics of the interdependence theory can be found in Thompson's work (Thompson, 1974). The history of the relationship between adjoining and focal parts is significant as well: the decisions taken in past situations and the results they yielded could influence adjoining parts to retake the same steps (if they showed to be successful) or to change strategy (if the previous one was unsuccessful). Ultimately, the power balance between the parts is also of great influence, as already mentioned.

As other studies do, Khan's paper emphasizes the fundamental role that leaders play within the dynamics that determine an organization's resilience. This aspect will be further analyzed in the following section.

The most important contribution of this study is represented by the innovative point of view on the resilience process. It suggests that resilience is enhanced when the organization acts as a whole, but this organizational unity cannot be a premise, rather it is the goal. It is necessary to look at the dynamics among the organization's parts to understand how resilience is generated as a consequence of the parts' efforts to synchronize and coordinate.



4. Kahn theory: a mental map - personal elaboration

1.3 RESILIENT LEADERSHIP

Resilience is not something that can be imposed from the top, it is a complex process that involves every member of the organization. This does not mean that leaders and role figures do not have a part in the process, on the contrary, they are key actors, enabling figures for organizational resilience. Leaders can powerfully influence their followers’ behavior, guiding them toward the achievement of goals that could enhance overall and personal resilience (Lombardi et al., 2021). Resilience is based not on single individuals, but on collectives. This does not simply imply a group of individually resilient people: “a group of resilient individuals does not guarantee a resilient team […] while entire communities can express resilience, even in the absence of resilient individuals. Resilient leadership can therefore be essential to achieving collective resilience” (Giustiniano et al., 2020, p. 974). Based on the “Law of the Few” (Gladwell, 2000), resilient leaders can form the “tipping point” that alters the behavior of the entire organization. The tipping point is the proportion of an organization’s population that needs to be a resilient leader to make the whole organization resilient. For the change to be successful, individuals who practice resilient leadership need to meet three criteria (Everly et al., 2013). First, they need to have credibility, secondly, they have to be information carriers, lastly, they must be keen on collaboration and teamwork to promote the success of others.

A good portion of the scholarship about organizational resilience focuses on leadership, either defining what resilient leadership is or simply analyzing how different styles of leadership nurture organizational resilience. Furthermore, studies either focus on how leadership can

directly influence employees' behavior, through direct and indirect (power) dynamics, or on how leadership influences the subordinates' well-being and psychological state in such a positive way that it could promote resilience. Both perspectives are important.

1.3.1 Leadership as gardening and leading while learning

The first paper (Lombardi et al., 2021) underlines the complementary and (seemingly) paradoxical aspects of resilient leadership (as in leadership that enhances and supports organizational resilience), and describes two major dimensions of leadership. The first dimension is "leadership as gardening" (Lombardi et al., 2021), a metaphor that describes the leader as a gardener who grows the organization as a garden, nurturing it to grow autonomous capacities and assets. The metaphor is based on specific aspects of the resilience process, like planning and protecting. The leader-gardener invests time and resources into creating an organizational environment where employees "take root" and become autonomous, thus resilience (as in the ability to autonomously face a challenge) is fostered on a daily basis, before the crisis. In this perspective, the emphasis is on the organizational elements of order, stability, planning, and progressive improvement. During the crisis, the leader's approach is to carefully manage incremental changes, maintaining stable conditions within the organization and avoiding radical changes that could harm the organization. The leader needs to be able to step back and have a general overview of the organization. He/she copes with the crisis by maintaining or creating the right contextual conditions to support the autonomy of the organization in overcoming the crisis, since the organization's resilient dynamics are nourished and strengthened before the crisis. The second dimension is "leading while learning" (Lombardi et al., 2021). In this perspective, the leader sees the crisis as an opportunity for learning and growing, relying on the resilience aspects of rethinking, responding, and innovating. In this case, the leader is firsthand involved in the organizational process facing the crisis. He/she closely analyses the situation to come up with innovative solutions, not only to manage the crisis but to generally better the organization. Learning while leading focuses on the ability to overlook the established rules and plans and focus on the ability to come up with innovative solutions on the spot. The fundamental role of learning in the resilient process is further analyzed later.

The descriptions of these two perspectives on leadership could lead to associating each with a specific aspect of the resilience process: "leadership as gardening" would be primarily important in the context of planning and preparing, while "leading while learning" is paired

with adaptive and responding resilience. This would be theoretically incorrect. Gardening and learning are not opposite, they are complementary and seamlessly intertwined, exposing the paradoxical aspects of the resilience process. Having only one of the two would lead the organization to failure rather than to resilience, either focusing too much on planning, rendering the organization too attached to pre-made schemes, or focusing too much on improvisation, making the organization chaotic and aimless. During a crisis, both perspectives are fundamental throughout the whole process to guarantee that the (resilient) organization survives and strives. Leading toward resilience simultaneously implies both the ability to face crises in a planned long-term perspective and the ability to respond to issues that require short-term, ad-hoc, and immediate solutions. This paradoxical view of resilient leadership is found in other literature as well: resilient leadership is best nurtured by developing strategic, long-term foresight, leaving room for improvisation to face unforeseeable events (Giustiniano et al., 2020).

1.3.2 Other leadership styles

Other studies link organizational resilience to specific leadership styles, not defined as resilient leadership, but, in this thesis’ perspective, “resilient-adjacent”.

Servant leadership

One study (Eliot, 2020) analyses the impact of a servant leader on the followers’ resilience. A leader is defined servant when he/she places the most attention on meeting the followers’ needs, to allow them to achieve their highest potential. Servant leadership is characterized by seven pillars: “emotional healing”, “creating value”, “conceptual skills”, "empowering”, “helping subordinates grow and succeed”, “putting subordinates first”, and “behaving ethically” (Eliot, 2020). Through the focus on the needs of the followers, the servant leader can influence followers’ resilience, based on the idea that his/her actions would yield positive emotions, which consequently would nourish the followers’ resilience and well-being. This process is referred to as “emotional contagion”, better defined as “a process in which a person or group influences the emotions or behavior of another person or group through the conscious or unconscious induction of emotion states and behavioral attitudes” (Schonewolf, 1990 cited in Eliot, 2020, pp. 411–412). This gives a good insight into how servant leadership can nurture the followers’ individual resilience, but it is important to keep in mind that a group of resilient people does not necessarily lead to organizational resilience, as accurately exposed in the

previous section. In that gap lies the difference between servant leadership and resilient leadership.

Transformational leadership, authentic leadership, crisis management leadership

Another study acknowledges the need to investigate how a leader can influence organizational resilience, rather than individual. After a literature analysis of different leadership styles that are, by this thesis definition, resilient-adjacent, it defines resilient leadership based on the leaders' most impactful characteristics. The first theory reviewed is "transformational leadership". Transformational leaders are focused on motivating and positively challenging their followers by being energic and passionate, and show four basic characteristics: intellectual stimulation, individualized consideration, inspirational motivation, and idealized influence (Everly et al., 2013). The second theory discussed is about "in extremis leadership" or "authentic leadership". Authentic leaders are optimistic and confident and are able to provide strong direction in difficult ("in extremis") situations. They are willing to take the same, if not more, risks as their followers and they gain the subordinates' trust by being very competent. Lastly, the theory of "crisis management leadership" is reviewed. Crisis management is the process of an organization's response to a situation that could harm it and an effective crime management leader needs to prove himself/herself, before, during, and after the crisis, i.e. throughout the four phases of crisis management: detection, crises, repair, and assessment (Everly et al., 2013). The results of the study show that the most important traits that make leaders resilient (so that they can meet the tipping point and enhance organizational resilience) are performance (i.e. decisiveness and action), vision (i.e. an optimistic point of view), moral authority (i.e. an ethically correct and moral behavior), and public persuasion,
(i.e. effective communications).

Compassionate leadership

Many studies have focused on the concept of compassion in the organizational environment, especially in the healthcare system. Creating and maintaining compassionate cultures is crucial for transforming workplaces to enhance human happiness and well-being. The primary goal of fostering such cultures at work is to establish conditions where everyone is supported to achieve the most satisfying work life possible. Compassion at work involves effectively pursuing a commitment to embodying our values, which necessitates shared direction, alignment, and dedication. It also entails inclusion, meaning working together to embrace all individuals

regardless of professional background, opinions, skin color, sexuality, religion, or gender. Additionally, compassion involves sharing power by promoting collective leadership, where everyone feels they have some influence. Finally, compassion calls for collaboration to foster a climate of shared purpose, prioritizing high-quality outcomes for the organization, those we serve, and the employees, rather than focusing solely on individual responsibilities (Benevene et al., 2022). Compassion is often mistaken for empathy, which itself has two main components: emotional empathy and cognitive empathy. Emotional empathy, or sympathy, involves sharing another person's emotional state. However, empathic distress can cause individuals to focus on alleviating their own discomfort, and if they lack coping resources, they may respond aversively. Cognitive empathy involves perspective-taking and imagining what it is like to be in someone else's situation—essentially, "stepping into someone else's shoes." Compassion, on the other hand, is a broader and more active concept. It combines empathic concern with the motivation to alleviate another's suffering. It includes distress tolerance, which is the resilience to avoid being overwhelmed by negative emotions, thus remaining capable of helping. One’s ability to respond compassionately is partly influenced by their perceived self-efficacy at the time. The confusion between emotional empathy and compassion leads some to view compassion as harmful, unprofessional, and a cause of burnout. However, evidence suggests that cognitive empathy can protect against burnout and promote well-being (De Zulueta, 2015). Compassionate leaders play a vital role in fostering and sustaining compassionate cultures in the workplace. Such leaders typically exhibit four key behaviors. The first is about attending, i.e. being fully present and attentive to their team members. The second is understanding, i.e. engaging in dialogue to gain a deeper understanding of their team members. The third is empathizing, i.e. feeling the distress or frustration of their team members without becoming overwhelmed by these emotions, enabling them to provide effective support. The last is helping, which involves four components: scope (i.e. the range of resources offered), scale (i.e. the amount of resources), speed (i.e. the promptness of the response), and specialization (i.e. the degree to which the response addresses the actual needs of the individual). Compassion is not an inherent personality trait; it can be cultivated and maintained by organizations at both individual and group levels. It can be learned and nurtured as both a personal approach and an organizational culture. Any organization can intentionally choose to transform its culture, processes, and actions to make compassion a core value (Benevene et al., 2022). Leadership for compassion should involve creating systems that provide healthy containment of anxiety,

support for individuals, and the modeling and fostering of positive adaptive responses to challenges. Leaders should also cultivate a culture of learning and openness, where errors, mistakes, and hazards can be shared and discussed, allowing new learning to emerge (De Zulueta, 2015).

1.3.3 Kahn: leaders as agents

Kahn's paper (Kahn et al., 2018) also briefly focuses on the major role played by the leaders of adjoining parts and organizations in influencing the parts' pathway. In particular, intergroup leadership can enhance either coordination or fragmentation, through reinforcement or impairment of intergroup identity. This can be done in different ways. In the structuralist view of leadership, leaders are able to create or modify the interdependence between adjoining and focal parts. This can be achieved by putting up reward or feedback systems that tie the adjoining and focal parts' outcomes together, by making sure that the reporting system forces focal and adjoining parts' leaders to care about each other's performances, or by underlining the importance of teamwork and collaboration since the beginning (in the job description). In the social construction view of leadership, leaders, as "makers of meaning" (Kahn et al., 2018), influence the way subordinates think and feel about each other. They can create intergroup relational identities through a narration that highlights both the parts' distinct merits and contributions and the integration of the entire organization.

1.4 ORGANIZATIONAL LEARNING

Whether defining resilience as a process or as an outcome, learning is a fundamental aspect of it. The ability of the organization to acquire new knowledge that can be exploited, either to survive or to be better, is a core aspect of organizational resilience. Learning itself has two dimensions within the resilience context: as an input and as an output (Orth & Schuldis, 2021). Learning as an input is represented by all the past experiences in coping with past crises that are employed to face the current challenge. As an outcome, the results and feedback of the actions and decisions taken during the current crisis are analyzed and stored for future use.

More generally, organizational learning has been the object of decades of debates, most of which are still ongoing (Easterby-Smith et al., 2000), therefore, to better grasp the meaning of "organizational learning" employed in this thesis, it is necessary to have an overview of the debates. The first topic of discussion has been about the levels of analysis. Scholarship has been

arguing whether organizational learning is merely the cumulative sum of what the organization's members individually learned, or it is something more. In the first case, it has been pleaded that the attribution of human connotation (such as the ability to learn) to objects such as organizations should be avoided, or that the way an organization "thinks" is the reflection of the thoughts and decisions of those few top-level managers whose actions are strategically relevant, rather than of all organization's members. On the other hand, numerous studies defend the opposite point: there is more to organizational learning than the sum of the "cognitive luggage" of the members, and the proof lies in the fact that members can change drastically over time, but the organization preserves norms, values, and culture. It has been suggested that learning takes place through the interaction among people, rather than being a process that happens within people. Learners are not individuals who independently process information and modify their mental structures accordingly, but they are "social creatures" whose understanding and learning activities are carried out in social interaction within specific contexts. This thesis is based on a social perspective of learning.

1.4.1 Single-loop and double-loop learning

One of the most influential theories about organizational learning is that of single- and double-loop learning by Chris Argyris. Using the author's metaphor (Argyris, 1977) single-loop learning corresponds to a thermostat that perceives the temperature, detects when it is too cold or too hot (as in different from the target temperature), and consequently turns the heat on or off to meet the target temperature. Double-loop learning, on the other hand, would correspond to a thermostat that not only detects the difference between the actual temperature and the target one but also questions itself on the reasons and mechanisms behind the target temperature. Single-loop learning is all about taking corrective actions, it involves changing methods to meet set goals; double-loop learning is about questioning assumptions behind the set goals and changing the goals themselves (Cartwright, 2002). The theory about single- and double-loop learning is connected with the concept of "error" (Argyris, 1977): learning is single-loop when an error is spotted and corrected without reviewing the underlying reasons of the system, while learning is double-loop if errors are fixed by changing the system's values. First-loop learning leads to first-order changes, while double-loop learning leads to second-order changes. There are specific occasions in which double-loop learning could occur (Argyris, 1977): either an event happening in the environment caused a crisis (e.g. economic recession), or a revolution

from within (e.g. new CEO) or from outside (e.g. takeover) took place, or the existing management provoked a crisis to stimulate the organization. Resilience is characterized by both types of learning (Lombardi et al., 2021). Adaptive resilience deploys single-loop learning when absorbing the initial impact, quickly and systematically solving urgent issues. Reactive resilience, which is characterized by a more positive view of the crisis (as an opportunity rather than a threat), leaves room for double-loop learning, that allows for a rethinking of the organizational way of doing things.

1.4.2 Knowledge, memory, and learning

The concepts of knowledge, memory, and learning are adjacent but distinct. To grasp the salient differences, it is suitable to identify four organizational learning processes (Antunes & Pinheiro, 2020): acquisition of knowledge, distribution of information, information interpretation, and organizational memory. By this statement, it is clear that knowledge and memory are either inputs or outputs of the organizational learning process. Organizational learning is a dynamic process based on the knowledge that is transferred throughout the whole organization, starting from the individual level. Based on how well the organization's members perform in knowledge sharing, the organization will either acquire and distribute as much knowledge as possible, or it will lose some piece of information, trapped inside someone's mind and inaccessible. Organizational memory is, on the other hand, the outcome of organizational learning, and identifies the way organizations store knowledge for future employment. Organizational memory is a complex concept that goes further than simply the total amount of individual stored notions. It represents a core part of the organization's identity and is preserved even when personnel changes.

1.4.3 The role of the leader

As already mentioned, the ability to learn is essential for resilient leadership, as the leader should be the first to embrace the crisis as an opportunity to learn more about the organization's hidden weaknesses and potential strengths. Higher learning capacities help the leader and the organization to better cope with difficulties and to have faster reaction times. As already mentioned, information is stored within the individuals, and learning is a social process, therefore the creation of a collaborative environment where information is shared easily and proactively must be a priority for management. Members of the organization must be nourished

as knowledge enhancers (Antunes & Pinheiro, 2020). Leaders are also responsible for deciding which pieces of information need to be employed, and whether the organization needs to obey predetermined protocols, or it needs to improvise (and, eventually, to which degree). It is, again, the equilibrium between gardening and learning (Lombardi et al., 2021). It is the responsibility of the leader to understand, during a crisis, whether each issue calls for a first- or second-order change, and therefore to trigger single- or double-loop learning, accordingly (Bakacsi, 2010). Leaders need to stay flexible. Managers who are employed for a long time in the same organization have likely adapted to a linear, formal, and somewhat “non-learning” mindset. This would allow them to be able to bring new solutions within the consolidated management practices (single-loop learning) but would probably make them unable to question the assumptions that lie behind the current practices (double-loop learning) (Cartwright, 2002).

1.4.4 Unlearning, not the opposite of learning

Another important element of the organizational learning literature is the notion of “unlearning”. Unlearning “is not forgetting but rather the ability to switch to an alternative mental model” (Giustiniano et al., 2020). Unlearning is a core aspect of the learning process that needs to find a learning-unlearning balance. Even though there is a conception of unlearning as a (negative) dimension of performance, characterized by unwanted outcomes, it is better defined, for the purposes of this thesis, to describe the casting-off process of no longer useful information (Easterby-Smith et al., 2000). It is possible to distinguish two types of unlearning (Orth & Schuldis, 2021). “Open-ended unlearning” implies the removal of organizational knowledge without a clear outcome in mind. “Goal-directed unlearning” implies the replacement of existing (obsolete) knowledge with new information. But “unlearning” is, in any case, a blurry concept that could be easily wrapped up by a broader and more complex definition of learning. While it has been shown that learning is a core aspect of organizational resilience, it has not been possible to prove the positive effect of unlearning on it. This could be linked to the vagueness of the concept of unlearning. Furthermore, unlearning is hard to detect: organizational learning and unlearning can happen together (goal-directed unlearning), but it is not mandatory. Unlearning processes may occur elsewhere than the new learning processes.

CONCLUSIONS

Organizational resilience is generally defined as a system's ability to "bounce back" from a crisis. This is a correct but oversimplifying definition of a phenomenon that is, instead, much more complex. To achieve a good comprehension of organizational resilience it is first necessary to identify the concept of crisis, which can be measured along many parameters: foreseeability, length in time, and scope. Resilience is manifested differently, depending on the kind of crisis the organization is facing. It is a process that involves both monitoring and planning activities and activities of improvisation and innovation. It is important to distinguish resilience from other similar concepts, such as robustness and antifragility. Robustness is the ability to absorb the initial hurt coming from the crisis, therefore it represents the premise of resilience. Antifragility is the ability to "jump forward", and achieve better performance than before the crisis, therefore it is a corollary to resilience. Organizational resilience cannot be achieved without organizational learning, which is the organization's ability to acquire and exploit new knowledge efficiently and effectively. Both single- and double-loop learning are implemented in the resilience process, the former during the initial absorption of the impact, and the latter during the successive response and reaction activities. The leader plays a fundamental role in enhancing the organization's resilience, not only because it determines the modalities in which the organization's members must act, but also because it implicitly and explicitly influences the general organizational culture and the way members think. A fundamental contribution to the literature about resilience is represented by Kahn's work. It analyses resilience as a result of the relationship between different groups within the same organization, and particularly the dynamic existing between organizational parts that firsthand experience strain, called focal parts, and the adjacent parts, called adjoining parts. Whether adjoining parts decide to help or neglect the focal part eventually results in organizational resilience or organizational brittleness.

CHAPTER 2

INTRODUCTION

Healthcare systems represent an exemplary setting for analyzing the practical implications of organizational resilience, considering that they regularly operate in uncertain and fast-evolving environments and that they are easily affected by non-health crises as well. A comprehensive analysis of the Italian Health System's functioning and organization is necessary, as well as an investigation of the definition and classification of health-related crises, to have a full understanding of how the healthcare system's resilience is acquired. Furthermore, the relationship between resilience and safety, one of the core principles of any health system, needs to be deeply analyzed: these two concepts are not necessarily opposites, but still present some trade-offs, in terms of performance, time management, and probability of being error-prone. The resilience of the Italian Health System, particularly in the Veneto Region, has emerged during the Covid-19 pandemic, as illustrated by this chapter.

2.1 – ITALIAN HEALTH SECTOR

2.1.1 Right to Healthcare

Article 32 of the Italian Constitution reads:

> "The Republic shall safeguard health as a fundamental right of the individual and as a collective interest, and shall ensure free medical care to the indigent. No one may be obliged to undergo any health treatment except under the provisions of the law. The law may not under any circumstances violate the limits imposed by respect for the human person."

The national health system (Servizio Sanitario Nazionale, SSN) is the establishment that ensures that all Italian citizens enjoy this right, under conditions of equity and unity. The right is practically embodied by the supply of LEA (Livelli Essenziali di Assistenza), the essential levels of care.

Fundamental and organizational principles

The SSN is founded on three cardinal principles (legge 23 dicembre 1978, n. 833):

1. Universality: health services are provided to the entire population because health is considered to be a common weal rather than individual. This is done by promoting, preserving, and recovering the physical and mental health of the people through the capillary distribution of structures that provide all services required by the LEA. These structures can be ASL (Aziende Sanitarie Locali, local health centers), AO (Aziende Ospedaliere, hospital enterprises), or private structures affiliated with the SSN.
2. Equality: all citizens must be able to have access to healthcare provided by the SSN, without distinction of individual, social, or economic conditions.
3. Fairness: all citizens are granted equal access to healthcare, according to their health needs. This principle aims to overcome disparities in access to health services, therefore the SSN is committed to guaranteeing the quality, efficiency, aptness, and transparency of healthcare services, and to providing complete and correct information about the necessary healthcare services to the citizens, in a suitable and comprehensible way, from doctors, nurses, and health workers.

These fundamental principles are combined with organizational principles, which are essential for healthcare planning. The most important organizational principles are:

1. Centrality of the individual: citizens can exercise a series of rights that represent duties for all healthcare workers, from doctors to those who plan territorial assistance. The most important rights (and duties) are:
    a. Freedom to choose the place of care
    b. Right to be informed about the illness
    c. Right to be informed about the therapy and to refuse or give informed consent
    d. Right of the patient to be cared for by the doctor or healthcare team throughout the therapeutic process; this means that healthcare providers have the duty of “presa in carico” (“care or management”)
    e. Right to privacy
    f. Duty of healthcare planning to prioritize the protection of citizens’ health in all decisions, within the limits of available economic resources
2. Public responsibility for the protection of the right to health: The Constitution provides for legislative powers of the State and Regions for the protection of health. The State determines the LEA that must be guaranteed throughout the national territory, while the Regions autonomously plan and manage healthcare within their respective territories.

3. Collaboration between the levels of government of the SSN: The State, Regions, Health Authorities, and Municipalities, within their respective areas of competence, must collaborate to ensure uniform health conditions and guarantees throughout the national territory and acceptable and appropriate levels of healthcare services for all citizens.
4. Enhancement of the professionalism of healthcare workers: The professionalism of doctors and nurses, not only in technical terms but also in their ability to interact with patients and collaborate with colleagues as part of a team, is crucial for the quality and appropriateness of healthcare services.
5. Social-health integration: duty to integrate healthcare and social assistance when citizens require healthcare services and, at the same time, social protection that must ensure continuity between care and rehabilitation, even for long periods.

Essential levels of care (LEA)

The LEA are the services and treatments that the SSN is required to provide to all citizens, either free of charge or with the payment of a co-payment fee (ticket), using public resources collected through general taxation (taxes). The latest version of the LEA is established in the Decree of the President of the Council of Ministers, January 12, 2017, which defines the activities, services, and benefits guaranteed to citizens with public resources made available to the SSN; provides a more detailed and precise description of services and activities already included in the LEA; redefines and updates the lists of rare diseases and chronic and disabling conditions that entitle individuals to exemption from co-payment fees; innovates the nomenclatures of outpatient specialist care and prosthetic care, introducing technologically advanced services and excluding obsolete services. The essential levels of care identified by the DPCM are three:

1. Collective prevention and public health, which includes all prevention activities aimed at communities and individuals
2. District assistance, meaning healthcare and social-health services provided throughout the territory
3. Hospital care, divided into the following activities

Furthermore, the DPCM includes chapters specifically dedicated to social-healthcare assistance and specific assistance for particular categories. Regions can provide additional services and benefits beyond those included in the LEA, using their own resources.

To ensure the continuous, systematic updating of the LEA based on clear rules and scientifically valid criteria, the National Commission for the Updating of LEA and the Promotion of Appropriateness in the SSN has been established. Additionally, the Permanent Committee for the Verification of the Provision of LEA (LEA Committee) has been established within the Ministry of Health. This committee is tasked with verifying the provision of LEA under conditions of appropriateness and efficiency in the use of resources, as well as ensuring the congruity between the services to be provided and the resources made available by the SSN.

2.1.2 LEA in depth

Collective prevention and public health

This level includes activities and services aimed at protecting the health and safety of the community from infectious, environmental, and work-related risks, as well as those associated with lifestyles. It is divided into seven areas of intervention, which include programs and activities aimed at achieving specific health objectives, guaranteed by the SSN through its own services or by utilizing contracted doctors and pediatricians. The seven areas are:

1. Surveillance, prevention, and control of infectious and parasitic diseases, including vaccination programs
2. Protection of health and safety in open and confined environments
3. Surveillance, prevention, and protection of health and safety in the workplace
4. Animal health and urban veterinary hygiene
5. Food safety – protection of consumer health
6. Surveillance and prevention of chronic diseases, including the promotion of healthy lifestyles and organized screening programs, nutritional surveillance, and prevention
7. Medico-legal activities for public purposes

Individual prevention interventions are excluded from this level, except for vaccinations organized in programs aimed at increasing the population's immune defenses and cancer screenings when organized in population programs, as well as the promotion of healthy lifestyles by SSN doctors. Also excluded, and provided for a fee by the requester, are services that, although they constitute an institutional duty of healthcare facilities, serve the private

interest of the recipient (e.g. medical-legal certificates required for issuing driving licenses, gun permits, employment suitability, hygiene-sanity verifications; checks conducted upon the citizen’s request on installations, water, homes, etc.). Services partially charged to the requester based on national or community regulations and the related regional implementing rules are included. These are services for which lump-sum contributions may be requested, which partially cover the cost of the service.

District assistance

This level of assistance is characterized by being carried out in the territory (and not in a hospital setting) within and under the responsibility of districts. Districts are entities established within the local health authority to manage numerous services in geographically limited areas. Generally, the district has autonomy in managing the resources assigned and is led by a district director. District assistance has a significantly heterogeneous content, and it includes:

1. Basic healthcare, provided by general practitioners and pediatricians of free choice
2. Continuity of care, meaning basic care during nighttime, weekends, and holidays, as well as assistance for tourists
3. Territorial health emergency stabilization and transportation to hospital facilities, coordinated by the 118 Emergency Service, and healthcare provision during major emergencies, events, or demonstrations
4. Pharmaceutical care, which involves dispensing medications through accredited pharmacies and pharmacies directly managed by ASL and hospitals.
5. Integrated care, including the provision of medical devices and special foods to specific categories of patients
6. Outpatient specialist care, including diagnostic and therapeutic services provided by outpatient specialist physicians in accredited public or private outpatient clinics and laboratories, whether territorial or hospital-based
7. Prosthetic care, involving the provision of prostheses, orthoses, technological aids, and medical devices to individuals with permanent disabilities
8. Thermal care, consisting of cycles of therapeutic treatments in a thermal environment for specific types of patients who can derive effective benefits
9. Home care for non-self-sufficient individuals with chronic illnesses

10. Support for women, couples, families, and minors, including pregnancy and maternity protection, responsible procreation, support for foster care and adoption, prevention of abuse and violence within the family, etc.
11. Home-based and residential palliative care for individuals in the final stages of life
12. Diagnostic, therapeutic, and rehabilitative care at home, outpatient, semi-residential, and residential levels for minors for the prevention and treatment of neuropsychiatric and neurodevelopmental disorders
13. Diagnostic, therapeutic, and rehabilitative care at home, outpatient, semi-residential, and residential levels for individuals with mental disorders
14. Diagnostic, therapeutic, and rehabilitative care at home, outpatient, semi-residential, and residential levels for individuals with disabilities
15. Diagnostic, therapeutic, and rehabilitative care at home, outpatient, semi-residential, and residential levels for individuals with pathological addictions

Hospital care

This level is divided into eight areas of activity. To access hospital care services, hospital admission is required, the admission proposal can be submitted by the general practitioner, the chosen pediatrician, the medical guard, or the emergency room physician. The eight areas are:

1. Emergency department
2. Ordinary acute care admission
3. Day surgery
4. Day hospital
5. Rehabilitation and post-acute long-stay care
6. Transfusion activities
7. Cell, organ, and tissue transplant activities
8. Poison control centers (Centri Anti Veleno, CAV)

Regions have the competence to organize the hospital care network, which is carried out based on SSN's qualitative, structural, technological, and quantitative standards. The regional hospital network must ensure a certain number of hospital beds per 1000 inhabitants, as provided for by regulations. The number of beds is determined by considering the need to transfer all interventions that can be performed safely for the patient without overnight hospitalization to daycare. Regarding cosmetic surgery, only interventions necessary as results of accidents,

outcomes of medical-surgical, or congenital or acquired malformations are included in the LEA and can therefore be provided by the SSN.

Social-healthcare assistance

Social-healthcare includes services necessary to meet the health needs of citizens, even in the long term, to stabilize clinical conditions, ensure continuity between care and rehabilitation activities, limit functional decline, and improve the person's quality of life. This involves combining healthcare services with actions of support and social protection. To achieve these goals, specific care pathways are defined, which include healthcare services provided by healthcare and social healthcare operators for the treatment and rehabilitation of pathological conditions, as well as socio-assistance services to assist individuals with disabilities, economic hardship, or marginalization affecting their health. Among the latter are assistance with personal hygiene and environmental cleanliness, household management, meal preparation, etc. The DPCM indicates not only the categories of citizens guaranteed social-healthcare assistance but also the areas of activity and the assistance regimes (homecare, residential care, day centers) in which healthcare services (medical, nursing, psychological, rehabilitative, etc.) are provided, integrated with social services. The categories of citizens are:

1. Chronically ill individuals who are not self-sufficient
2. End-of-life patients
3. Individuals with mental disorders
4. Minors with psychiatric and neurodevelopmental disorders
5. Individuals with pathological addictions
6. Individuals with disabilities

Depending on the specific conditions of the individual, the severity and modifiability of their conditions, the severity of symptoms, etc., services may be provided intensively or extensively, or they may simply aim to maintain the person's health status and functional capabilities. It is important to emphasize that all citizens are guaranteed an integrated care pathway that includes, if necessary, both healthcare and social services. To offer greater quality and efficiency in the service, unified desks are active in almost all ASL or Municipalities where citizens can turn for multidimensional assessment of their clinical, functional, and social needs, assuming responsibility for the individual and defining an individualized care plan. The healthcare and social protection needs of the patient are assessed using standardized and uniform multidimensional assessment tools across the regional territory. The multidimensional

assessment identifies the healthcare and assistance needs of the patient, regardless of the pathology they are affected by, and guides the operators to organize the socio-health intervention in a specific care assistance regime (at home, in a residential facility, or in a day center). The SSN must ensure continuity of patient care between hospital care and territorial (community-based) care phases.

Specific assistance for particular categories

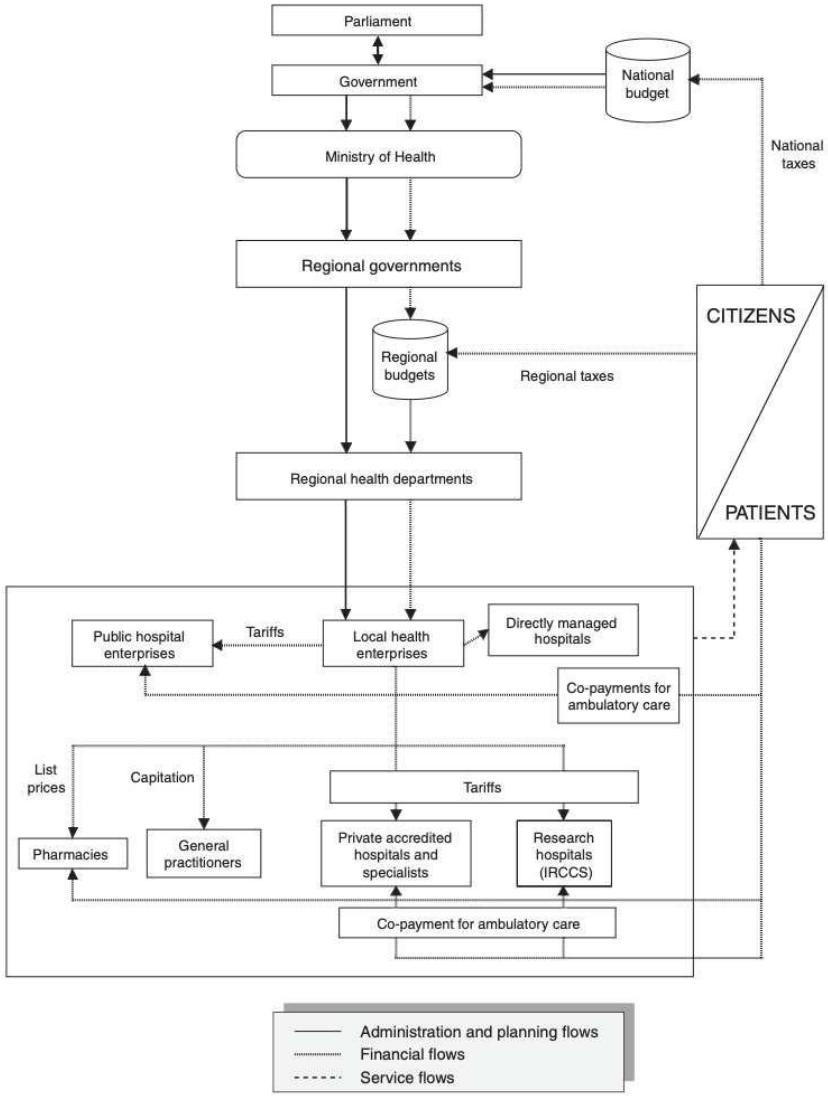
The DPCM lists the specific protections that our SSN guarantees to certain categories of citizens. The categories are:

1. Disabled individuals
2. Individuals afflicted by rare diseases
3. Individuals afflicted by chronic and disabling diseases
4. Individuals afflicted by cystic fibrosis
5. Chronic kidney disease patients on dialysis
6. Individuals afflicted by Hansen's disease
7. Individuals with HIV/AIDS infections
8. Detained individuals and inmates in penitentiary institutions and minors subject to criminal proceedings
9. Pregnant women
10. Individuals with autism spectrum disorders
11. Italian citizens residing in Italy authorized for treatment abroad
12. Foreign citizens enrolled in the SSN
13. Foreign citizens not enrolled in the SSN and not in compliance with their residency permit

2.1.3 From national to regional: the Veneto Region's healthcare system

The Italian Constitution (Title V, art. 117, paragraph 2, letter m), stipulates that the responsibility for health protection is divided between the State and the Regions. The state is responsible for determining the LEA that must be guaranteed throughout the national territory and for overseeing the effective delivery. The Regions plan and manage healthcare autonomously within their territorial jurisdiction, by means of the ASLs (Aziende Sanitarie Locali, local health authorities), and AOs (Aziende Ospedaliere, hospital enterprises). ASLs are autonomous entities led by a general director, a health director, and an administrative director,

who are directly responsible for the proper functioning of the services. All Regions must guarantee their residents the services and benefits included in the LEA. Additionally, each Region, provided it is in a state of financial and economic balance, can decide to expand the assistance guaranteed to its residents by allocating additional resources to the so-called "additional levels," which are in addition to the essential levels. These may include services or benefits intended for specific categories of patients or disabled individuals or aimed at the general population of residents. Regions experiencing structural deficits and that have signed a Deficit Recovery Plan cannot provide "additional levels."



5. The Italian Health System – Source: Health Systems in Transition Vol. 11 No. 6 2009

The Veneto region SSR (Sistema Socio Sanitario Regionale) counts nine ASLs, called ULSS (Unità Locale Socio Sanitaria, local socio-health unit):

1. ULLS 1 “Dolomiti”
2. ULLS 2 “Marca Trevigiana”
3. ULLS 3 “Serenissima”
4. ULLS 4 “Veneto Orientale”
5. ULLS 5 “Polesana”
6. ULLS 6 “Euganea”
7. ULLS 7 “Pedemontana”
8. ULLS 8 “Berica”
9. ULLS 9 “Scaligera”

Furthermore, it includes two AOs, the Azienda Ospedale-Università di Padova and the Azienda Ospedaliera Universitaria Integrata di Verona, and the IRCCS (Institute of Scientific Hospitalization and Care) Instituto Oncologico Veneto. The regional health system is coordinated and administrated through the Azienda Zero. The Veneto Region has established an organizational structure that emphasizes increasing responsibility at every level of the SSR. Within this framework, following their historical development, the ULLSs play a proactive and driving role for the entire SSR, while the Region fulfills functions of guidance, planning, programming, and control. Additionally, accredited private entities provide services on behalf of the SSR.

Structure of the ULSS

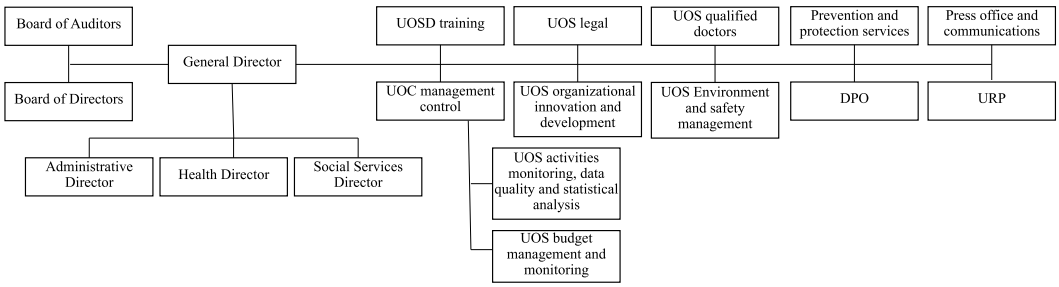
The ULLS are territorially organized to cover all the provinces of Veneto, each serving a specific geographical area. Each ULSS comprises one or more socio-health districts. Each ULSS has specific organizational characteristics, based on the specificities of the territory. It is still possible to give a general description of the ULSS’s common organizational structure. The main organs of each ULSS are the General Director (Direttore Generale), the Board of Directors (Collegio di Direzione), and the Board of Auditors (Collegio Sindacale). The General Director of each ULSS is the head of the ULSS and has overall responsibility for its management. His/her main functions include strategic and operational planning, the management of economic, financial, and human resources, the supervision and coordination of health and social-health activities, and the implementation of regional health policies. Below the General Director, there are three main operational directors: the Health Director (Direttore Sanitario), the Administrative Director (Direttore Amministrativo), and the Social Services Director (Direttore dei Servizi Socio-Sanitari). The Health Director is responsible for managing health

services, including hospitals and territorial services; he/she directly manages the Prevention Department, which handles disease prevention and health promotion, and the Hospital Assistance Department, which manages hospital activities and healthcare facilities. The Administrative Director is responsible for the administrative, economic, and financial management of the ULSS, as well as for the management of human resources. The Social Services Director coordinates social-health and assistance services, including services to support the elderly, disabled, and families in difficulty, and mental health structures and programs. Furthermore, each ULSS is divided into Districts, which represent an intermediate organizational level responsible for coordinating health and social services at the local level, promoting the integration of health and social care, managing primary and territorial care services, and facilitating access to services for the local population. Each Department, regardless of its function, is divided into UOC, that carry out healthcare or technical-administrative activities.

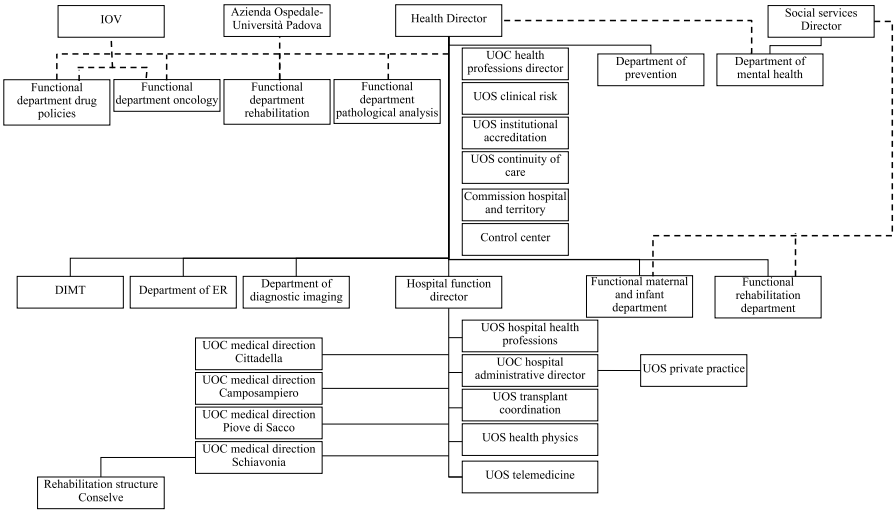
Hospitals in the ULSS

Health services are therefore distributed through two main channels: the first is represented by the Hospital structures, and the other is represented by all other healthcare facilities and services. The Health Director is responsible for the proper function of hospitals, through the Hospital Director (Direttore Medico di Ospedale). The hospital is organized into Departments, which are further divided into UOC (Unità Operative Complesse, complex operational units), UOS (Unità Operative Semplici), or UOSD (Unità Operative Semplici di Dipartimento). The number and variety of Departments and Units may vary among hospitals. UOC are complex structures that ensure the direction and organization of homogeneous healthcare or technical-administrative activities. UOS and UOSD are structures that include activities with high professional and organizational specificity. UOSD are identified by regional programming or corporate choices as internal organizational components of the Department, with budgetary responsibility, and are responsible for the management of human, technical, and financial resources to fulfill their assigned functions. UOS, on the other hand, are internal organizational components without budgetary responsibility but are entrusted with the management of human and technical resources to fulfill their functions and achieve their objectives.
As already mentioned, besides the nine ULSS, the Veneto Region Health System includes two AO, the Azienda Ospedale-Università di Padova and the Azienda Ospedaliera Universitaria Integrata di Verona.

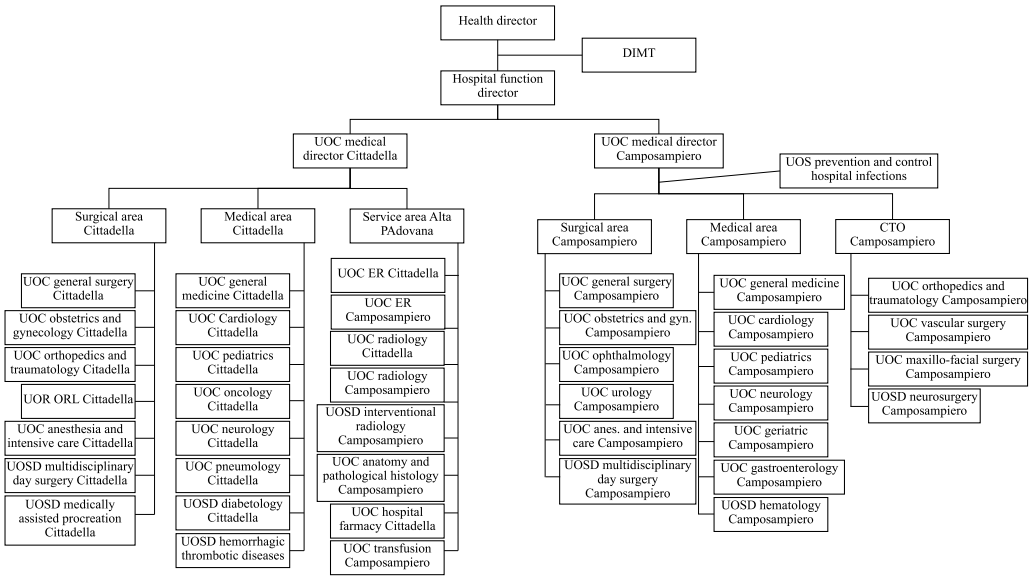
Some portions of the organizational chart of ULSS 6, comprehensive of five districts (Distretto Padova Bacchiglione, Distretto Padova Terme Colli, Distretto Padova Piovese, Distretto Alta Padovana, Distretto Padova Sud), and of that of the AO Azienda Ospedale-Università di Padova are presented as examples (the other ULSS are organized similarly).



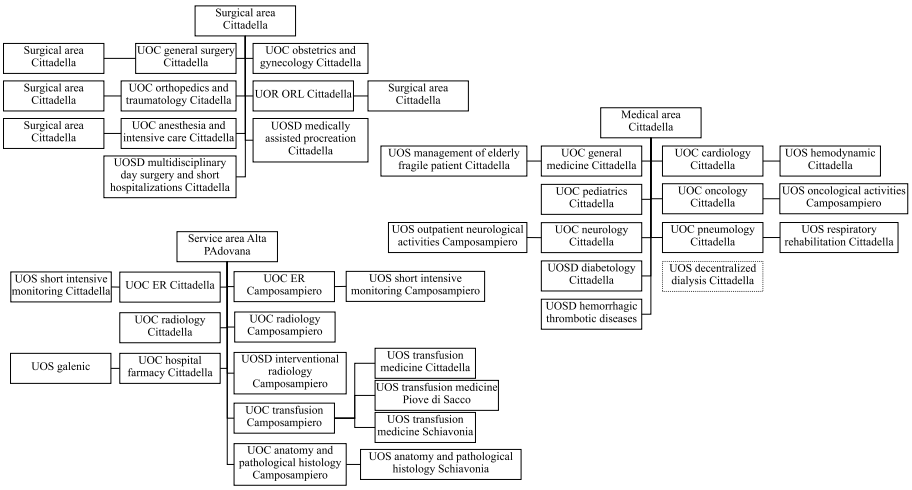
6. General Director – personal elaboration from Corporate Act ULSS 6



7. Healthcare area – personal elaboration from Corporate Act ULSS 6



8. Cittadella and Camposampiero hospitals - personal elaboration from Corporate Act ULSS 6



9. Departments detail Cittadella hospital – personal elaboration from Corporate Act ULSS 6

The complete organizational chart of the AO Azienda Ospedale-Università di Padova can be found in the appendix A.

2.2 – ORGANIZATIONAL RESILIENCE IN HEALTH SECTOR

Keeping in mind what has been broadly established about organizational resilience in the first chapter of this thesis, it is particularly interesting to analyze how these notions specifically adapt to the healthcare sector.

2.2.1 Health Crisis: a complex definition

As it has been done with the general definition of "organizational resilience", it is important to define the concept of "crisis" in the context of the healthcare system, in order to assess its resilience. In the relevant literature, a crisis is often bounded by the definition of health emergencies, particularly in the context of ERs. This focus works particularly well with Kahn's work (Kahn et al., 2018) that underlines how peripherical parts of the organization are more likely to undergo strain and become focal parts. Not only ERs are always situated in the most marginal layer of the health facilities (from both an organizational and physical point of view) but they are also more subject to uncertainty and unforeseen events than any other department. A significant part of the reasons that bring citizens to ERs is random and hardly predictable. ERs' personnel therefore need clear guidelines and instructions to allocate patients into suitable clinical urgency categories.

Triage in the ER's context

The practice called "triage" dictates the assessment and allocation of not only patients but of resources as well (Morgans & Burgess, 2011). The Triage systems implemented in Italian contexts are inspired by a model of a holistic approach to the person and their family, through a nursing assessment based on the collection of subjective and objective data, significant situational elements, and available resources. The foundations of the Triage model can be identified in the following activities:

- Ensuring the effective care of the person and their companions from the moment they approach the ER
- Ensuring a professional evaluation by a specifically trained nurse
- Guaranteeing the assignment of a priority code by considering the health needs of the patient, their care requirements, and the potential evolutionary risk
- Using a structured evaluation process capable of guaranteeing a comprehensive approach to the person and their health problems
- Using a codified system of priority levels for access to care
- Having an adequate and computerized documentation system

From a methodological point of view, the Triage process is divided into four phases:

1. Immediate Evaluation phase: the rapid observation of the person's general appearance to identify individuals with care needs requiring immediate intervention

2. Subjective and Objective Evaluation phase: a subjective evaluation conducted through an interview targeting medical history, and an objective evaluation conducted by measuring clinical signs and vital parameters and analyzing available clinical documentation
3. Triage Decision phase: assignment of the priority code, implementation of the necessary care measures, and possibly the initiation of the diagnostic-therapeutic pathways
4. Re-evaluation phase: confirmation or modification of the priority code assigned to waiting patients

The assignment of the priority code is the outcome of the nursing decision made within the Triage activity and is based on the elements identified during the evaluation phases. This determines the priority of access to care to be assigned to the patient based on their clinical condition, evolutionary risk, and the availability of resources. The priority code assigned during Triage does not necessarily correspond to the severity of the patient's condition; only the subsequent evaluation phase, conducted during the medical examination, will provide the necessary elements for the correct formulation of the clinical severity judgment of the case. In the Triage decision, in addition to the symptoms and potential evolutionary risk, other factors influencing the priority level and the quality of care to be provided for proper management must also be considered, such as pain, age, disability, frailty, and specific organizational and contextual factors. For these reasons, it is necessary that the management of the waiting list be carried out by the Triage nurse. In the proposed model, a system with five priority code categories is adopted, with values from 1 to 5, where 1 indicates the highest level of severity. The Regions may also associate a color code with the numerical code.

code		denomination	definition	maximum waiting time for access to treatments areas
number	color			
1	red	emergency	interruption or compromise of one or more vital functions	immediate access
2	organge	urgency	risk of compromise of vital functions; condition with evolutionary risk or severe pain	within 15 minutes
3	blue	deferrable urgency	stable condition without evolutionary risk with suffering and impact on general condition that usually requires complex care	within 60 minutes
4	green	minor urgency	stable condition without evolutionary risk that usually requires simple monospecialistic diagnostic-therapeutic services	within 120 minutes
5	white	not-urgency	non-urgent issue or of minimal clinical relvevance	within 240 minutes

10. Triage codes – personal elaboration from salute.gov.it

The beginning of the Triage (Immediate Evaluation phase) must be guaranteed within 5 minutes to all those accessing the ER. The re-evaluation represents an essential phase of the Triage process and is defined as the professional activity aimed at enabling clinical monitoring of patients waiting, through periodic recording of subjective and/or objective parameters that will allow for timely detection of any changes in the health status. The re-evaluation procedures are based on the code initially assigned. A modification of the code as a consequence of re-evaluation will lead to a change in the waiting times, accordingly.

code		denomination	maximum waiting time for access to treatmentsareas	re-evaluation procedure
number	color			
1	red	emergency	immediate access: no re-evaluation	
2	organge	urgency	within 15 minutes	direct observation or video-mediated observation with constant monitoring of conditions
3	blue	deferrable urgency	within 60 minutes	repeating part or all of the evaluation phases: - at the discretion of the triage nurse - at the request of the patient - once the recommended maximum waiting time has passed
4	green	minor urgency	within 120 minutes	
5	white	not-urgency	within 240 minutes	

11. Triage codes – personal elaboration from salute.gov.it

Subsequently to Triage is the proper Emergency Room activity, which consists of all clinical activities following the patient's admission, including the medical examination and the diagnostic tests that lead to the medical outcome, which may consist of:

- Admission to OBI (Osservazione Breve Intensiva, short intensive observation)
- Hospitalization in a ward of the hospital through activation of the respective procedure by opening the admission form
- Transfer to another acute or post-acute facility with the activation of the respective procedure

- Discharge to home with referral to territorial facilities, providing, if necessary, follow-ups at outpatient facilities

<table>
<tr><th colspan="5">Emergency Room process</th></tr>
<tr><th>function</th><th>activity</th><th colspan="2">outcome</th><th colspan="2">maximum time</th></tr>
<tr><td>triage</td><td>1. priority assignment
2. assignment to a specific pathway
3. re-evaluation while waiting</td><td colspan="2">1. direct admission to ER
2. assignment to an outpatient clinic
3. initiation of a Fast Track
4. direct provision (see and treat)</td><td rowspan="4">Maximum time from triage assessment to completion of emergency care: 8 hours</td><td></td></tr>
<tr><td rowspan="3">ER</td><td rowspan="3">1. medical examination
2. diagnostic tests
3. consults
4. therapies
5. referral to a pre-ordered outpatient pathway</td><td>discharge</td><td>1. handover to MMG (Medici di Medicina Generale, general practitioners)/PLS (Pediatri di Libera Scelta)
2. territorial assistance
3. residential facility
4. specialist outpatient follow-up</td><td></td></tr>
<tr><td>hospitalization</td><td>1. inpatient unit
2. transfer to another acute care facility</td><td></td></tr>
<tr><td>redirection to OBI</td><td></td><td rowspan="3">Minimum 6 hours from admission to Short Intensive Observation Unit (OBI). Maximum 44 hours from triage assessment.</td></tr>
<tr><td>OBI</td><td>1. medical examination
2. diagnostic tests
3. consults
4. clinical and instrumental monitoring
6. therapies</td><td>discharge</td><td>1. handover to MMG (Medici di Medicina Generale, general practitioners)/PLS (Pediatri di Libera Scelta)
2. territorial assistance
3. residential facility
4. specialist outpatient follow-up</td><td colspan="2"></td></tr>
<tr><td></td><td></td><td>discharge</td><td>1. inpatient unit
2. transfer to another acute care facility</td><td colspan="2"></td></tr>
</table>

12. ER's process – personal elaboration from salute.gov.it

It is clear that the well-functioning of the ER largely depends on the Triage process and the correct and fast categorization of the patients. Only by proper identification of the emergency (emergency code), the personnel is able to perform efficiently, not overburdening the system and minimizing errors. This interpretation of emergency particularly suits this thesis also because it focuses on minor crises, that can occur any day, any moment. It exemplarily represents the concept of "strain", as opposed to that of a major crisis. Strain, as already clarified in the previous chapter, is a creeping stress, that accumulates and derives from a variety of small

issues and challenges rather than from one big event. These minor stresses, in this case, are not only represented by every patient but also (if not foremost) by the eventuality that medical staff is not able to perform according to the instructions or makes (even small) mistakes.

More general crisis definition

In addition to the focus on ERs that is especially well-suited, it is important to acknowledge other types of crises that can affect the health system. Given that protecting and ensuring public and individual health is one of the fundamental principles of society, then health systems are the means by which this principle is acted on. It is reasonable then to establish that many crises that can affect society at large will reflect on the health system, either directly (a pandemic event), or indirectly (an earthquake that causes many injuries). it is possible to assume that whenever a public institution (at any level of organization) calls for a “state of emergency”, then the health system is likely to be affected as well. “Emergency” is the term more widely used in institutional settings to define an extraordinary situation that requires extraordinary management (Mlađan e Cvetković, 2013). Still, the definition of emergency situations in order to categorize is not clear but necessary. A study titled “Classification of emergency situations” (Mlađan e Cvetković, 2013) gives an in-depth analysis of the concept and modalities of emergency classification, providing a digest of the most relevant criteria that are commonly implemented in the evaluation of an emergency. One fundamental criterion for categorizing emergencies is intensity. Intensity can be measured with different indicators, such as geographical penetration, number of causalities, or number of people suffering from disrupted living or working conditions. However, intensity is usually implicitly expressed in more common groups of criteria implemented in emergency classification, such as time criterion (as a function of predictability and speed of emergency development), socio-environmental criterion, economic criterion, and organizational-managerial criterion. Another classification system commonly used categorize emergencies into natural (natural phenomena beneath the earth surface, natural phenomena at the earth surface, meteorological or hydrological phenomena, or biological phenomena), man-made emergency situations (technological, explosions, pollutions, transport-related, located in public places, production-related, wars), or hybrid (combinations of natural forces and human errors). These criteria are not necessarily health-related but are means of categorization of emergencies that could either be directly or indirectly health-related, but also of emergencies that have no impact on the health system.

A closer focus on health systems is provided by the WHO (World Health Organization) grading grid that triggers different levels of WHO emergency procedures. The grading system is activated either by the outbreak of a risky or highly risky public health event, the occurrence of a public health event for which the RRA (Rapid Risk Assessment) suggests a probable need for operational responses by WHO, or a request for assistance from a member state. The grading system classifies the events into four grades:

1. Grade zero: the event does not require more attention and resources than what is already provided by the normal country-level system and procedures, therefore WHO limits itself to monitoring the event
2. Grade one: the event requires a limited response by WHO, exceeding the normal country-level response, the support provided is minimal
3. Grade two: the event requires a moderate response by WHO, exceeding the normal country-level response, the support provided is moderate
4. Grade three: the event requires a major or maximal response by WHO, exceeding the normal country-level response, the support provided is fundamental

This grading system is also based on the definition of an emergency as an extraordinary event that requires extraordinary attention, responses, and resources, but, given the scale of the WHO, it only applies to events that have an international magnitude (as the WHO would not get involved with crises only affecting local health systems). Therefore, even if it provides a focus on health-related events, it does not cover all health events relevant to this thesis.

The perspective of this thesis

The literature about the classification of emergencies is vast and faceted and could lead to confusion, especially with the lack of a clear definition between “general” emergencies and health systems emergencies. To prioritize clarity, I personally consider the following to be the most indicative criteria for classifying extraordinary situations, in the context of this thesis (therefore only considering emergencies that affect the health system):

- Frequency rate: most often, often, rarest
- Duration: brief, extended
- Encompassed territory: local, regional, national, international, global
- Predictability: predictable, unpredictable
- Possibility of influence: manageable, non-manageable

These are the parameters along which I think it is more suitable to evaluate the severity of a crisis in the health system. On the other hand, to have a general framework of which areas of the health system can experience stress, I think it is useful to consider the work by Roncarolo et al. (Roncarolo et al., 2017) that provides a compendium of the most common types of health systems’ emergencies. These are:

- Human resources: challenges and stress connected with the number of staff available, its competency, and its distribution, but also with the communication stream between health workers and patients, the workforce retention, the workload, and staff safety.
- Finances: challenges and stress connected with rising costs of HSs, struggle with securing financial resources for health, allocation of financial resources, and lack of financial autonomy.
- Infrastructure and supplies: challenges and stress connected with inadequate infrastructure, problems in logistics, lack of adequate equipment, issues with procurement, distribution and storage of supplies, rising demand and costs of both technologies and drugs, and efficacy and quality of supplies.
- Knowledge and information: challenges and stress connected with the production of information, the availability of data, the increasing need for data, issues with knowledge sharing and translation, obstacles to the implementation of health information systems, and the need to build capacity in information analysis.
- Leadership and governance: challenges and stress connected with strategic policies, horizontal cooperation, accountability, and patient and community engagement.
- Service delivery: challenges and stress connected with access (a function of affordability, acceptability, and geographical features), the need to improve vertical integration and referral systems, the provision of information on services, the overuse and waste of resources, cultural and linguistic barriers, prevention and health promotion, issues with extended waiting times, continuity of care, and safety.
- Context and population: challenges and stress connected with stigma (associated with lack of knowledge and awareness, among both health workers and patients, about health services in particular contexts, such as sexually transmitted diseases, mental health, physical handicaps, or women’s health), the necessity of dealing with an aging population, the growing occurrence of chronic diseases, as well as external political and

environmental factors, population growth (only for some countries, as opposed to an aging population), migration, and economic dynamics.

- Principles and values: challenges and stress connected with inequalities and specific ethical issues (such as end-of-life care policies and voluntary termination of pregnancy).

2.2.2 Health system resilience

Now that it has been clarified how a health system can find itself in a critical situation, it is time to assess how it can "bounce back", i.e. be resilient. This section focuses on how the theoretical framework provided in the previous chapter is practically carried out in a health system context. The study by Hanefeld et al. (Hanefeld et al., 2018) aptly provides a compendium of case studies about resilient healthcare that confirm Kahn's theoretical frame (Kahn et al., 2018), as well as the one in this thesis. The focus of the analysis is on the shock's impact on three core dimensions and two cross-cutting features of health systems. The first core dimension concerns health management information systems. Evidence shows that an extensive and proper-functioning monitoring infrastructure is key to enhancing the health organization's resilience. Furthermore, since the information required during a crisis is not necessarily the same as that needed in normal functioning and management, the ability to effectively and conveniently gather information from different sources as well as the ability to integrate new information within the system smoothly is crucial to the organization resilience, both short- and long- term. This includes the system's ability to forecast events as well. The second core dimension relates to the level of funding and financing mechanisms, which heavily facilitate or hamper the health system's resilience. Gaps in the amount and consistency of financing exacerbate the negative impacts of crises, reflecting on chronic shortages of medical supplies. This leads the health system to rely on out-of-pocket payments as a short-term solution, that, being based on individuals' and households' capacities, worsens the general public health status, especially considering the logical inequal and unfair consequences. Evidence also shows that previous proper levels of funding and pre-established accumulation mechanisms can provide a temporary but highly effective buffer of financial resources. Therefore, the health system's financing and financial resources management should be a priority for governmental institutions, especially concerning public health systems. The third core dimension concerns the health workforce, including staff at all organizational levels, from the ER's staff to the policymakers. Organizational resilience is enhanced when the members respond to shocks in a collaborative and coordinated way. Furthermore, resilience is also enhanced if, during a crisis,

role boundaries are softened, and health workers are able to shift between roles and departments to better respond to the rapidly changing context. Similarly, ad-hoc redistribution of staff members is also beneficial, provided that members have the skills and knowledge to be moved flexibly throughout the organization.

The first cross-cutting feature of a resilient health system relates to governance, as it is a function that influences the operation of all departments. During a crisis, governance traditionally tends to stiffen into a top-down hierarchy system, as an “automatic” short-term response that provides focus and successfully directly coordinates the organization. but it also limits the extensive diffusion of knowledge, experiences, and ideas. Therefore, to enhance resilience, governance needs to implement horizontal practices of coordination and collaboration, as well as a bottom-up approach, to be better perceptive of the information coming from the operational levels (which are directly facing the crisis’ effects). The second cross-cutting feature is linked to the organization’s values that emerge during the response to the crisis. Values include a variety of dimensions, including the political priority assigned to public health during an external general crisis as well as individual, professional, and societal moral principles. Therefore values, and the general interest in public health, are not only important at a societal level but also among the medical staff and the patients. Fundamental values that help the health system’s resilience are equity, compassion, dignity, respect, and trust. The latter particularly affects the relationship between the health system and the people, both medical staff and patients, in terms of the willingness of patients to share information with the system or comply with health measures (e.g. be vaccinated) and of the attentiveness of health workers to the system’s needs.

Another study (Fridell et al., 2019) yields the same results, identifying, more or less, the same core dimensions that reinforce the health system’s resilience. As related to financing, it underlines the impact that effective financial resources allocation and protection have on promoting resilience, therefore concluding that a health system is more likely to be resilient if nationally funded, minimizing the number of out-of-pocket payments. The study confirms the importance of workforce skills and competence, as well as the availability of additional human resources during a crisis. Continuous and effective collection of data also is confirmed to enhance resilience, as well as the ability of the system to absorb the new information and adapt accordingly. The system’s members’ and departments’ willingness to share information improves the overall system’s learning capabilities and cooperativeness, both vital to a resilient

organization. Finally, the importance of good leadership and forms of governance based on accountability, transparency, and equity, as well as the implementation of a horizontal managerial perspective, are underlined. In addition, the study shows evidence that accessibility to medical products is critical for health systems' resilience, therefore incentives for the production of medical supplies (which are not attractive products to produce) should be increased. Lastly, it also highlights the importance, during a crisis, of providing additional services to the population while keeping up with normal activities, and the significance of preventing efforts during normal times in order to be better prepared for crises (even if many crises are hardly predictable).

Some studies underline the importance of compassion in the workplace and compassionate leadership in making the health system better and more resilient. Given the general definitions of compassion and compassionate leadership provided in the previous chapter, in a compassionate healthcare system patients and staff would feel heard, supported, and cared for. Staff would be empowered to show attentive kindness, be attuned to their own needs and those of their patients, and freely take appropriate actions to alleviate suffering. Patients' physical, psychological, and spiritual needs would be addressed. Care would embody not only compassion but also competence and timeliness. There would be time to provide care and space to reflect and recharge. Compassionate leadership would, in turn, catalyze, nurture, and sustain compassionate healthcare. The prevalence of suffering and anxiety in healthcare makes compassionate leadership essential, yet paradoxically, it also creates conditions that make such leadership challenging to maintain. Four distinct possible factors hinder medical staff's compassionate practice. The first is burnout or overload, primarily due to time pressures. The other three are connected to external distractions: bureaucratic requirements, "difficult" patients and relatives, and complex clinical situations, including uncertainty and treatment failure (De Zulueta, 2015). Compassionate in the workplace is also about sharing power and responsibilities and encouraging horizontal and collective leadership (Benevene et al., 2022), which is a vital aspect of resilience. In the health system, this means that leaders need to be able to demonstrate their humanity, occasional vulnerability, and understanding of emotions, rather than being "heroic" stand-alone figures who have all the answers. They need to recognize the complexity of healthcare and understand that no single individual can solve problems in complex systems (Bailey & Burhouse, 2019).

Resilience and Safety

Safety is a concept deeply intertwined with resilience in the healthcare sector. Ensuring the patient’s safety is one of the goals of a health system, as well as protecting the health workforce’s safety. Safety and resilience are not necessarily opposite concepts, but it requires a delicate equilibrium to make sure that a health system is both resilient and safe. This is because pursuing resilience presents some trade-offs with pursuing safety, especially considering that (good) performance is also a fundamental goal (and a must) of health systems. For instance, safety is best fostered in highly standardized and supervised systems, while resilience requires a culture of innovation, autonomy, and improvisation (Hollnagel & Braithwaite, 2019). The same book provides a clear example of this trade-off between resilience, safety, and performance, using parallelism between a rock climber and a patient and identifying four possible courses of events.

	theoretical course of event	rock climber example	patient example
case A	The procedure follows the recommended protocols, no unexpected events, perfect outcome	The climber successfully climbs the rock face, in perfect conditions (good weather, good rock conditions, good physical form)	The ideal care is perfectly delivered and the healing was total and within the time frame provided by the protocol
case B	Minor adverse events leads to deviations from protocol, perfect outcome is still achieved	The climber successfully climbs the rock face, overcoming a series of minor adversities (bad weather, bad rock conditions, poor physical form) adapting to a new plan (spending ad additional night on the rock face)	The perfect care is delivered despite difficult working conditions (staff shortages, incompetent staff) that leads to minor adverse events (minor mistakes by unexpert staff members)
case C	Due to adverse events, the strategy chosen is to wait for better conditions, the outcome is perfect but delayed	The climber waits for better conditions (better weather, better personal shape) and successfully climbs the rock face some time later	Given suboptimal conditions (staff shortage), the care delivery is postponed to better times to minimize the risk of adverse events, succesfully curing the patient
case D	Major adverse events lead to grave harm, the outcome is not achieved	The climber suffers from a serious accident (a fall) that harms his general health, and is unsuccessful in climbing the rock face	Poor conditions lead to a major adverse event (a serious medical mistake) that threatens the patient life, leading to further health complication and the missed delivery of care for the first condition that brought the patient to the hospital

13. Safety, Resilience, and Performance - personal adaptation from Hollangel and Braithwaite

Apart from case D, which is always undesirable, cases A, B, and C are all acceptable, case A being the most desirable. In the healthcare context:

- if the priority is effectiveness and good performance (also in terms of time frame), then cases A and B will be preferred over case C, despite case B being less safe
- if the priority is safety, then cases A and C will be preferred over case B, despite case C being affected by delays (therefore being less performing)
- if the priority is resilience (in which case A is not available), then case B is preferred over case C

Obviously, case A remains the optimal solution, but it is far more likely that, due to suboptimal conditions, a health system or health staff find themselves choosing between B or C, based on which goal they want to prioritize. This is a basic simplification of the vastly more complex healthcare reality, but it is apt to clarify the relationship between performance, safety, and

resilience, and allows for the formulation of a possible solution. There is no reason to ignore recommended protocols when they are relevant, unless the alternative solution results in worse medical outcomes. However, countless situations lack recommended protocols, either because they do not exist or because they were developed without considering the co-morbidities and working conditions of the current patient setting. This discrepancy requires us to redefine our expectations for resilience in healthcare. The top priority should be to maintain natural resilience for difficult situations, while sometimes setting it aside for standard procedures. The best approach should involve applying increased resilience to the numerous complex and varied cases within the health system, while reducing resilience for standard cases. Adopting a system-wide perspective and a global vision can help balance these aspects, with the ultimate goal of providing more citizens with longer, healthier lives (Hollnagel & Braithwaite, 2019).

Healthcare resilience during Covid-19

The Covid-19 pandemic is probably the most striking health-related event of current times, as it has put strain not only on our health system but on the entire socio-economical and political structure, as well as those of the majority of nations worldwide, to different degrees. Not all countries experienced the pandemic in the same way, nor at the same time. Some countries were hit suddenly and heavily, while others had more time to prepare or were very slightly affected. The Covid-19 pandemic has been an exemplary test bench to assess organizations’ resilience. While acknowledging that this is true for all kinds and levels of organizations, including industrial and manufacturing companies, the educational system (from primary school to university level), the prison system, the judicial system, and generally the socio-political system, this thesis focuses on the health system. The pandemic forced health systems to confront new challenges. Beyond general medical management, a significant aspect was reorganizing hospitals and adjusting personnel shifts. Healthcare systems had to establish new intensive care units (ICUs) to accommodate the rising number of Covid-19 patients. This virus often requires prolonged ventilatory support and a slow, difficult weaning process. Consequently, after setting up new ICUs for the most critical patients, it was essential to create sub-intensive and respiratory intensive care units. Here, intensivists, pulmonologists, and respiratory therapists could collaborate on the weaning process. This organization allowed for earlier discharge of patients from the ICU once weaning began. Tracheostomy also played a crucial role, as Covid-19 pneumonia often necessitates extended mechanical ventilation and difficult weaning, both key indications for tracheostomy. The procedure became very common

and had to be performed under specific conditions, such as in a negative pressure room within the ICU to minimize transportation and contamination risks. Finally, establishing a dedicated airway team was essential. This team ensured effective communication and coordinated efforts among intensivists, surgeons, and nurses (Russo et al., 2020). In general, evidence shows that health systems displayed resilient abilities (to different degrees) through the measures theorized in the previous section. The Veneto Region, including its health system, has been particularly successful, in comparison to other Regions, in tackling the crisis, becoming a model for the whole country (Menegus, 2020). Given this information, rather than focusing on what has been done during the crisis (which is deductible from the literature summarized in these two chapters), this thesis focuses on how the Veneto health system works today, four years later.

CONCLUSION

Health systems are complex organizations whose goals are to protect, preserve, and improve public health. In Italy, the right to healthcare is stated in the constitution, and the health sector is public and presents itself with a complex governance structure that includes the Ministry of Health, the Regional Councils, and the ASLs and AOs. The essential levels of care (LEAs) are determined at the state level and comprise all services that ASLs must provide to the community, and they are collective prevention and public care, district assistance, and hospital care. Regions can offer additional services if autonomously financed. Health systems, given their breadth and scope, are easily susceptible to crisis because they often operate in fast-changing and unpredictable conditions. “Emergency” is the term commonly used to identify crises affecting the health system, either directly (health-related crises) or indirectly (other types of crises). Health crises can be categorized based on parameters such as frequency rate, duration, encompassed territory, predictability, and the possibility of influence; and they can be of different types, based on whether they affect human resources, finances, infrastructure and supplies, knowledge and information, leadership and governance, service delivery, context and population, and principles and values. This high probability of undergoing stress and difficult times is precisely the reason why health systems need to be resilient, and evidence shows that healthcare resilience fulfills the theoretical basis given in the previous chapter. The need for resilience is counterbalanced by the duty of safety. Safety and resilience lead to a trade-off, and the need to balance the compliance of protocols (pursuing safety) and autonomy to innovate (pursuing resilience), to maximize performance and minimize errors. The Covid-19 pandemic is the most recent major crisis that hit the Italian Health System, causing both immediate shocks

and longer-term strains. Italian Regions responded differently to the crisis, and the Veneto Health System has proved itself to be particularly resilient and more successful than others in handling the crisis.

CHAPTER 3

INTRODUCTION

This thesis is part of a larger national research project titled “When Struggles Develop Strengths: Transforming Learning in Innovation. An Analysis of Individuals, Teams, and Organizations”. The overall objective of the research is to improve the current understanding of how innovative routines, practices, and behaviors introduced by organizations while coping with systemic shocks can be maintained and capitalized in the post-shock period. The research engages three different universities in three different regions: the University of Bologna, the University of Padova, and the Cattolica del Sacro Cuore University.

This chapter is composed of two pain parts. The first is an analysis of six interviews with seven members of the administrative and medical staff of the Sant’Orsola hospital, in Bologna, aim to gather an understanding of the changes in healthcare organizations after the Covid-19 pandemic. The second part includes the design of a qualitative survey to be administered to the hospital medical staff, in order to assess its organizational resilience. The survey is based on the literature outlined in Chapter 1 and on the insights given by the interviews.

3.1 THEMATICAL ANALYSIS OF INTERVIEWS

3.1.1 The case study

The IRCCS Azienda Ospedaliero-Universitaria di Bologna Policlinico di Sant'Orsola is a very old hospital, home to the Faculty of Medicine and Surgery of Alma Mater Studiorum University of Bologna, for which it serves as the reference company for essential care activities necessary for carrying out the institutional functions of teaching and research. The internal organization is structured into Departments of Integrated Activities (hospital and university), a type of organization that ensures the execution of care, teaching, and research activities, to which the 87 Operating Units report. As of today, it has 1,515 beds with a staff of 6,807 employees, including researchers and university doctors; it conducts approximately 49,000 hospitalizations per year and over 3,300,000 specialist outpatient services.

Seven members of the hospital staff were interviewed regarding their work experience during and after the COVID-19 pandemic crisis. The interviewees are part of the hospital's administrative, medical, nursing, and laboratory staff, in order to obtain as comprehensive a view as possible.

3.1.2 Research and Procedures

Objective

The objective of the thematic analysis of the interviews is to understand how the reality of hospital work has changed during the pandemic period and especially in the post-pandemic period. It aims to comprehend if and how an organizational learning process has occurred, which elements were introduced during the pandemic, which have "survived" into the post-pandemic period, and what factors have influenced the persistence or disappearance of these elements. Ultimately, this will help better understand if and how a healthcare organization has developed resilience.

Type of interview and people interviewed

A semi-structured interview methodology was used. The objective stated above can be pursued using this technique, which is a guided conversation and an inquiry tool typical of qualitative research. It is a methodology that leaves room for personal narrativity, aiding in the understanding of complex real phenomena, while adhering to the framework based on the theory. Seven members of the hospital staff were interviewed regarding their work experience during and after the COVID-19 pandemic crisis. The interviewees are part of the hospital's administrative (subject A), medical (subjects C and F), nursing (subjects B, D, and G), and laboratory staff (subject E), in order to obtain as comprehensive a view as possible.

Research protocol

The interviews are loosely structured to better adapt to the work profile of each interviewee. Fundamental questions are followed by more specific questions related to the actual role performed within the hospital. The main questions are:

- How has hospital work changed after the pandemic?
- What major innovations were implemented during the pandemic? What type are they?
- Which of these innovations have remained in the post-pandemic period?
- Which ones have been lost? And why?

Additional questions concern technological innovations, patient management, the organization of multidisciplinary teams, the creation of protocols for codifying new knowledge, and the decision-making capacity (i.e. leadership).

3.1.3 Analysis and Results

The interviews have been transcribed to be analyzed. Each interview lasted about 1 hour. The main themes emerged from the thematic analysis were the following:

First topic: pushes toward innovation

Innovation has developed in various areas. Firstly, there has been a development in technology and its use. In the strictly administrative field, this has resulted in the new possibility of working "from home" via telematics, while in the medical and laboratory fields, it has led to the use of new devices and technologies. There has also been the development of digitizing medical records, impacting both the administrative and medical sides (and, obviously, the patient side). The second area of innovation has been the introduction of multidisciplinary teams. This occurs both in the administrative field, where multidisciplinary task forces with "bottom-up" information flows are created, and in the medical field, where teams of various specialists take care of the same patient. Finally, there is structural innovation, characterized by two seemingly opposing forces: the growing importance of hierarchy and the streamlining of decision-making processes. Several factors have greatly incentivized the mentioned innovations. Firstly, particularly regarding technological and digital innovation, these are changes that were already partially underway even before the pandemic (and are therefore considered less predominant in the context of this thesis). Organizational innovation concerning multidisciplinary collaboration is fueled by the strong motivation of the hospital staff (especially among medical and nursing staff), also linked to the media attention received during COVID-19. Finally, this innovation acceleration, both in terms of acquiring new technologies and streamlining bureaucratic processes, was possible due to the substantial funds received during the crisis period. Thus, if certain aspects of innovation have been lost in the post-pandemic period (such as reduced multidisciplinarity and slower decision-making), this can be attributed to various factors: a decline in motivation (also linked to the decrease in fear), a reduction in funds leading to tighter budget constraints, and the need to refocus on less acute but more enduring issues.

Second topic: cooperation

As mentioned earlier, collaboration, especially interdisciplinary collaboration, was a novelty during the pandemic period. In the administrative field, this took the form of task forces, where brainstorming processes facilitated the collection of ideas and feedback from organizational members at any level, creating a "bottom-up" information flow. In the medical and nursing fields, the coordination and collaboration of members from different departments or OCs were fundamental for the effective management of the pandemic crisis, with a focus on patient care. This spirit of collaboration also emerged in situations where doctors from less affected departments were temporarily reassigned to more strained departments, thus having to adapt to new medical needs, or in situations where spaces and tools from less affected departments were "redesigned" to serve different functions. Finally, collaboration was evident in the large number of new doctors and residents who started working during the pandemic. Collaboration, along with the emotional factors that are certainly linked to a hospital context during the pandemic, gave rise to very strong interpersonal bonds (which the interviewees describe as "fraternal" or are compared to those formed between soldiers in war). These relationships, in turn, incentivize and strengthen cooperation in a virtuous circle. In the post-pandemic period, this great spirit of collaboration has partially diminished. The reasons are varied: there has been a return to addressing multiple issues that are more "sectoral" rather than "global," the necessity to work closely together has decreased with the end of the crisis, and there is simply a need for "normality." Additionally, there was a lack of institutional effort to ensure that collaborative processes were codified and became the norm. During the pandemic, most staff recognized the need to adopt collaborative mechanisms, but in the post-pandemic period, only a portion of the staff has "embraced" this concept, while others no longer see the necessity. Despite this, it emerges that the bonds underpinning collaboration have remained and have a very deep and now ingrained nature within the organization. Therefore, it is plausible to think that, in the event of future crises, these bonds will facilitate and even make an immediate return to collaboration.

Third topic: action-oriented behavior

The magnitude and scope of the pandemic emergency necessitated faster and more streamlined decision-making models to respond effectively and promptly to the crisis, which was developing very rapidly. The hospital staff had to adopt more action-oriented approaches, moving from problem identification to solution implementation as quickly as possible. Processes, especially decision-making ones, were thus accelerated by drastically reducing

bureaucracy. This was fundamentally made possible by the funds received to address the emergency. The financial and material resources accessed allowed for the immediate implementation of solutions. In the post-pandemic period, the available resources were, of course, drastically reduced. This led to the return of more rigid bureaucracy and the need to contend with budget constraints.

Fourth topic: crisis as an opportunity

Despite the pandemic being a difficult and fearful period, the staff, thanks in part to the sense of cohesion and the new decision-making abilities acquired, often experienced it as a time of learning and remember it, in the post-pandemic period, as a moment of great professional and personal satisfaction. For many, the pandemic was an opportunity to learn new skills, not only technical-operational (such as using new diagnostic tools, new medical devices, or new digital tools for administration), but also organizational, due to the sense of responsibility stemming from the new decision-making abilities. For this reason, several interviewees recall the pandemic period as a happy time, characterized by hope, solidarity, and satisfaction. In the post-pandemic period, the learning and engagement of the staff members have slowed down, returning to "normal" levels.

Fifth topic: leadership and hierarchy

I decided to analyze these two aspects together, despite being distinct from each other, to highlight an apparent contradiction that links them. During the pandemic period, the decision-making capacity (i.e., leadership) of each hospital staff member increased exponentially. This is due to two main factors. The first is the organizational innovation of task forces, particularly in the administrative area. Task forces are characterized by the heterogeneity of their members, in terms of their levels of belonging, and by processes of feedback acquisition from the bottom up. This mechanism ensures that many more members feel involved in decision-making processes. The second factor is the action-oriented approach (already mentioned). Since the bureaucratic process is reduced, each individual member can make practical decisions much more easily than before. This represents a distributed leadership, by virtue of which all (or almost all) members of the organization are able to make decisions (if not strategic, at least operational). Accompanying this trend of distributed/horizontal leadership is an "opposite" trend, namely the growing relevance of hierarchy. While one might think that the horizontalization of leadership is linked to the dismantling of the hierarchical model, this case

serves as an exception. During the pandemic, organizational hierarchy took on a new fundamental meaning, beyond mere formality. It allowed everyone to understand their role, even when being "redistributed" from one department to another, and to always know who the individuals closest to them were. Therefore, hierarchy should not be understood as a "top-down" decision-making system, but rather as a framework or skeleton within which hospital members can work, constantly aware of their place within the organization. This ensures that, despite the generally greater decision-making freedom, which allows members to implement creative and innovative solutions, a certain organizational order and coherence are still maintained.

3.1.4 Considerations

The knowledge obtained from the thematic analysis of the interviews consolidates, for the most part, what was derived from the literature review. I also consider it appropriate for the structure of this thesis to highlight the elements that most align with Kahn's theory. First and foremost, the importance of interpersonal and interdisciplinary (or interdepartmental, hence inter-group) relationships is evident. The pandemic crisis has led hospital staff members to "form a group" and feel united in adversity. The sense of brotherhood mentioned by one of the interviewees is the foundation of a new vision of groups. Staff members no longer identify solely with their department or operational unit, but with the entire organization. The link to Kahn's theory is evident in the attitude that certain departments less affected by the pandemic (adjoining parts) have towards more stressed departments (focal part). There is a redistribution of resources, primarily human resources, indicating that members of the adjoining part have participated in the stress and identified with it to the point of temporarily changing roles within the organization. Moreover, resources play a crucial role. The interviews reveal that the substantial resources provided to the healthcare system, and therefore to hospitals, during the pandemic were absolutely essential for enabling an adequate response to the crisis. The availability of resources is, in Kahn's theory, one of the factors that influence the willingness to help of organizational groups. However, the role of the leader during the crisis, which is a key part of Kahn's theory, did not emerge from the literature analysis. According to Kahn, the leader acts as an "agent," a figure who can motivate their followers and influence their resilience. No such figures are mentioned in any of the interviews.

Beyond Kahn's theory, other elements that emerged from the interviews align with what is more generally stated in the literature review. Firstly, viewing the COVID period as an opportunity,

as well as a threat, closely relates to the concept of resilience as the ability to see crises in an alternative light. Members acknowledge that the pandemic period was a significant learning moment, not only operationally but especially organizationally. This confirms, or at least suggests, that learning is a fundamental part of an organization that knows how to respond effectively to a crisis (i.e., is resilient). The testimony of a general sense of hope and trust experienced by staff members during the pandemic shows, in my opinion, that this attitude towards learning is not only operational but is also embedded in the organizational culture, which thus has deeper emotional roots. Although it was not possible to relate the interviews to the conception of leadership presented by Kahn, it is still relevant to highlight that another interpretation is possible. The concept of leadership that emerges from the interviews is one of widespread decision-making ability. The literature analyzed in the first chapter of this thesis also emphasizes the ability of all members of an organization to make decisions as a key aspect of the organization's stress-handling capacity and proactivity. An organization whose members are free to independently improvise solutions to problems is theoretically a (more) resilient organization, and the testimonies seem to confirm this. However, in the literature, this concept, which is distributed among definitions of shared leadership, horizontal leadership, and compassionate leadership, is usually accompanied by the idea of surpassing more traditional organizational structures, such as a strictly defined hierarchy. The interviews, however, strongly indicate that hierarchy, during the pandemic, gained importance and assumed an increasingly significant role, far from being "dismissable." My personal explanation is that it is primarily a slightly different definition of the term hierarchy. If the literature views hierarchical structure as inherently characterized by a "top-down" distribution of organizational power, the interviews suggest a more "flexible" and "functional" definition. The hospital hierarchy does not serve to indicate who has power over whom but rather to constantly remind everyone of their role and position within the organization, so they know exactly who is most affected by their decisions. Regardless of the definition, it is important to understand that a hospital organization, already complicated in itself, which is part of a regional system (see chapter 2 for a detailed description), and which belongs to the public sector and performs one of the fundamental activities of our society, requires a more organic structure than any private organization. This remains an interesting aspect to explore further.

3.2 SCALE IDENTIFICATION

Following the analysis of the literature and the interviews, the aim of this thesis is to propose some suitable measures for a questionnaire that will be submitted in the near future within the context of the national research project. The measures will be redefined based on the participants in the survey, who will alternatively be members of two healthcare organizations under comparison, or members of the high or intermediate managerial levels of multiple healthcare organizations, divided by department or operational unit. The measures are divided based on general topics that are derived from the literature (particularly from Kahn’s paper), and from what emerged from the interviews.

3.2.1 Individual resilience

These scales aim to measure and assess individual resilience. Even if it has been argued that a number of individually resilient persons does not necessarily imply the existence of a resilient group or organization, the idea that individual resilience can foster organizational resilience cannot be completely dismissed. Particularly, the individual resilience of the leader figure can be reflected in the resilience of the people she/he manages, as a team (Lombardi et al., 2021).

1. **CONNOR-DAVIDSON RESILIENCE SCALE**

(Connor & Davidson, 2003)

The Connor-Davidson Resilience Scale (CD-RISC) was developed in the early 2000 by Kathryn M. Connor and Jonathan R.T. Davidson, and published in 2003. The CD-RISC was created to provide a reliable and valid measure of resilience that could be used across various populations, including clinical and general community samples. Connor and Davidson aimed to fill a gap in the available assessment tools by developing a scale that was grounded in empirical research and that could be applied in both research and clinical settings. The development of the CD-RISC was influenced by existing literature on stress, coping, and resilience. It drew upon work by psychologists and psychiatrists who had identified key components of resilience, such as hardiness, persistence, and optimism. Notably, the work of George Vaillant on adult development and resilience, Aaron Antonovsky's concept of sense of coherence, and the foundational research of Emmy Werner on resilient children were significant in shaping the theoretical underpinnings of the CD-RISC. The original CD-RISC consists of 25 items, each rated on a 5-point Likert scale ranging from 0 (not true at all) to 4 (true nearly all

the time). The total score ranges from 0 to 100, with higher scores indicating greater resilience. The CD-RISC was validated through several studies involving diverse populations, including general community samples, primary care patients, psychiatric outpatients, and clinical trial participants. It demonstrated good internal consistency, test-retest reliability, and construct validity. Since its development, the CD-RISC has been widely used in both research and clinical practice to measure resilience in various contexts, such as assessing the impact of interventions aimed at increasing resilience, understanding the role of resilience in mental health disorders, and exploring the relationship between resilience and outcomes in different populations.

Items:

1. Able to adapt to change
2. Close and secure relationships
3. Sometimes fate or God can help
4. Can deal with whatever comes
5. Past success gives confidence for new challenges
6. See the humorous side of things
7. Coping with stress strengthens
8. Tend to bounce back after illness or hardship
9. Things happen for a reason
10. Best effort no matter what
11. You can achieve your goals
12. When things look hopeless, I don’t give up
13. Know where to turn for help
14. Under pressure, focus and think clearly
15. Prefer to take the lead in problem-solving
16. Not easily discouraged by failure
17. Think of self as strong person
18. Make unpopular or difficult decisions
19. Can handle unpleasant feelings
20. Have to act on a hunch
21. Strong sense of purpose
22. In control of your life
23. I like challenges

24. You work to attain your goals
25. Pride in your achievements

2. CONNOR-DAVIDSON SCALE – SHORT VERSION

(Campbell-Sills & Stein, 2007)

Recognizing the need for shorter and more context-specific versions, Connor and Davidson, along with other researchers, have developed adaptations of the original scale. These include the CD-RISC 10, a 10-item version that retains the core elements of the original scale and is suitable for quick assessments.

Items:

1. Able to adapt to change
2. Can deal with whatever comes
3. Tries to see humorous side of problems
4. Coping with stress can strengthen me
5. Tend to bounce back after illness or hardship
6. Can achieve goals despite obstacles
7. Can stay focused under pressure
8. Not easily discouraged by failure
9. Thinks of self as a strong person
10. Can handle unpleasant feelings

3. RESILIENCE FOR ADULTS

(Friborg et al., 2003)

The Resilience Scale for Adults (RSA) was developed by Oddgeir Friborg, Øyvind Hjemdal, Jon H. Rosenvinge, and Monica Martinussen in 2003. The RSA was created to address the need for a comprehensive measure of resilience in adults, focusing on identifying key protective factors that support healthy adjustment. Prior scales predominantly targeted children and adolescents, leaving a gap in tools designed specifically for adult populations. The developers aimed to create a scale that captured a broad range of resilience components, providing insights into the resources individuals draw upon to maintain mental health and well-being. The RSA

consists of 37 items divided into six subscales, each assessing different dimensions of individual resilience:

1. Personal competence: self-efficacy, self-esteem, and the ability to plan and organize
2. Social competence: the ability to establish and maintain social relationships and networks
3. Structured style: an individual's preference for order and planning
4. Family cohesion: the support and stability provided by the family unit
5. Social resources: the availability and quality of external social support
6. Personal structure: individual traits such as perseverance and patience

Each item is rated on a 7-point Likert scale, with higher scores indicating greater resilience. The RSA was validated through a series of studies involving various adult populations, demonstrating good psychometric properties, including internal consistency and construct validity. The scale has been used in both research and clinical settings to assess resilience and its relationship with mental health outcomes. The RSA has been utilized in numerous studies to explore the protective factors associated with resilience in adults. It has been particularly valuable in research on mental health, providing a nuanced understanding of how different resilience factors contribute to psychological well-being. The scale has also been used to evaluate the effectiveness of interventions designed to enhance resilience

Items:

<u>Personal competence</u>

1. I believe in my own abilities
2. Believing in myself helps me to overcome difficult times
3. I know that I succeed if I carry on
4. I know how to reach my goals
5. No matter what happens I always find a solution
6. My future feels promising
7. I know that I can solve my personal problems
8. I am pleased with myself
9. I have realistic plans for the future
10. I completely trust my judgments and decisions

<u>Social competence</u>

11. I am good at getting in touch with new people

12. I easily establish new friendships
13. It is easy for me to think of good conversational topics
14. It is easy for me to make other people laugh
15. I enjoy being with other people
16. I easily laugh
17. It is important for me to be flexible in social circumstances

Family coherence

18. There are strong bonds in my family
19. I enjoy being with my family
20. In our family we are loyal towards each other
21. In my family we enjoy finding common activities
22. Even at difficult times my family keeps a positive outlook on the future
23. In my family we have a common understanding of what's important in life
24. There are few conflicts in my family

Social support

25. I have some close friends/family members who really care about me
26. I have some friends/family members who back me up
27. I always have someone who can help me when needed
28. I have some close friends/family members who are good at encouraging me
29. I am quickly notified if some family members get into a crisis
30. I can discuss personal matters with friends/family members
31. I have some close friends/family members who value my abilities
32. There are strong bonds between my friends

Personal structure

33. Rules and regular routines make my daily life easier
34. I keep up my daily routines even at difficult times
35. I prefer to plan my actions
36. I work best when I reach for a goal
37. I am good at organizing my time

4. MEDICAL PROFESSIONALS' RESILIENCE SCALE

(Rahman et al., 2021)

The Medical Professionals' Resilience Scale (MPRS) was developed by Md. Aminur Rahman, Mohd Saidin Yusoff, Nur Syarifah Roslan, Jamalludin Ab Rahman, and Azman Ahmad, with its findings published in 2021. The MPRS was specifically designed to assess resilience among medical professionals, recognizing that existing resilience scales might not adequately capture the unique challenges and stressors faced by this group. The developers aimed to create a scale that could be used to identify resilience levels among medical professionals, thereby aiding in the design of targeted interventions to bolster resilience and support mental health in the healthcare sector. The MPRS consists of 37 items that are designed to measure various dimensions of resilience specifically relevant to medical professionals, each item on the scale is typically rated on a Likert scale, with higher scores indicating greater resilience. The development of the MPRS involved several phases, including item generation, pilot testing, and large-scale validation studies. These studies included diverse samples of medical professionals to ensure the scale's applicability across different contexts within the healthcare sector. The MPRS demonstrated strong psychometric properties, including internal consistency, test-retest reliability, and construct validity. The MPRS has been used in both research and practical settings to assess resilience among medical professionals. It serves as a valuable tool for identifying individuals who may benefit from resilience-building interventions and for evaluating the effectiveness of such interventions. The scale is also used in research studies exploring the factors that contribute to resilience in medical professionals and how resilience impacts job performance and mental health.

Items:

1. I can succeed if I keep trying
2. I believe everything happens for a reason
3. When I face a situation, I will learn from it
4. I believe there is a wisdom behind everything in life
5. I believe every problem comes with a solution
6. I seek help to achieve my goals if necessary
7. I believe by helping others, I am helping myself too
8. I have goals to achieve
9. I believe good planning is a key to success
10. I believe self-motivation will change the final outcome
11. I believe hard work really pays off in the end

12. I am aware of my strengths and abilities
13. I am positive I will be successful in the future
14. When my work is criticized, I cope positively by trying harder the next time
15. Believing in myself helps me to face any difficulties
16. I am firm with my stand
17. I can adapt to change at work situations
18. People always believe in me to make difficult decisions
19. I am comfortable working in new environments
20. I spend my life doing something great
21. I have good coping skills when dealing with stress
22. I am proud of my own accomplishments
23. I become a stronger person when facing difficulties at work
24. I always give my best at work
25. I feel energic doing my work even in difficult situations
26. I can maintain interest in my work
27. My colleagues can always rely on me
28. I can stay calm in hard situations
29. I can handle unpleasant feelings
30. I always try to stay calm in any situation
31. I can control my anger
32. I am in control of my surroundings
33. I am good at adapting myself to different situations
34. I know who to talk to and when I have a problem
35. I know where to go if I need help
36. I always have someone by my side when I have problems
37. I figure out ways to solve my problems by talking about them

3.2.2 Organizational and team resilience

These scales aim to measure the resilience of an organization or a team. This differs from individual resilience as it is the result of the dynamics enacted among members of the organization or team. These scales cover pretty much all the aspects of organizational resilience that have been encountered in the dedicated literature. It is important to notice that, in the

implementation phase, these scales will be readapted to better fit the health system context. In particular, the second scale, which has been built specifically for SMEs, will be adjusted in order to better fit a public organization context (e.g. all references to competitors will be changed).

5. ORGANIZATIONAL RESILIENCE SCALE

(Kantur, 2015)

The Organizational Resilience Scale (ORS) was developed by Deniz Kantur and Ahmet Isik Say, with their findings published in 2015. The ORS was designed to provide a reliable and valid measure of organizational resilience, capturing the key factors that enable organizations to withstand and recover from adverse situations. The developers aimed to create a comprehensive tool that could be used to assess resilience across different types of organizations, facilitating both academic research and practical applications in organizational development and risk management. The ORS consists of 9 items that measure various dimensions of organizational resilience, each item on the scale is typically rated on a Likert scale, with higher scores indicating greater resilience. The ORS was validated through empirical studies involving various organizations to ensure its reliability and validity. This process included pilot testing, factor analysis, and correlation studies with related constructs. The ORS demonstrated good psychometric properties, including internal consistency and construct validity.

Items:

My organization…

1. Stands straight and preserves its position
2. Is successful in generating diverse solutions
3. Rapidly takes action
4. Develops alternatives in order to benefit from negative circumstances
5. Is agile in taking required action when needed
6. Is a place where all the employees engaged to do what is required from them
7. Is successful in acting as a whole with all of its employees
8. Shows resistance to the end in order not to lose
9. Does not give up and continues its path

6. ORGANIZATIONAL RESILIENCE OF SMEs

(Verreynne et al., 2023)

The Organizational Resilience Scale developed by Martie-Louise Verreynne, Joanne Ford, and John Steen in 2023 emerged in response to the growing need to understand how small and medium-sized enterprises (SMEs) can withstand and thrive during economic crises. The scale was created during a period marked by global economic instability, including the aftermath of the COVID-19 pandemic, which severely impacted SMEs worldwide. This context highlighted the critical need for tools to measure and enhance resilience in smaller businesses. he scale developed by Verreynne, Ford, and Steen comprises 39 items designed to measure different dimensions of organizational resilience in SMEs, each item is typically rated on a Likert scale, with higher scores indicating greater resilience in the respective dimension. The scale was validated through empirical studies involving various SMEs to ensure its reliability and validity. This process included factor analysis and correlation studies with related constructs, demonstrating strong psychometric properties such as internal consistency and construct validity.

Items:

1. Our partnership arrangements allow us easily to adjust our product and/or service offerings
2. There is freedom to experiment with new ways of doing things in our organization
3. Our business has a reasonable amount of resources in reserve
4. We actively plan with our customers how to manage disruptions
5. In dealing with competitors, our business is very often the first one to introduce new products/services, administrative techniques, operating technologies, etc.
6. We maintain and encourage training that goes beyond what the job requires
7. Staff are rewarded for “thinking outside the box”
8. People in our firm are cross-disciplinary
9. We are able to accommodate disruptions while maintaining our current role in the industry
10. We maintain spare equipment, facilities or production capacity that we can use in times of need
11. We accomplish new challenges with resources that were not originally intended to be used this way

12. We are able to shift things around in the face of adversity and still deliver value to our customers
13. We have ample discretionary financial resources
14. Our employees can switch to new jobs with similar responsibilities to their current job within a short time
15. Aspects of our business are reorganized to capture new opportunities that arise
16. Our organization has a history of turning threats into new opportunities
17. We develop responses to specific threats we face as an organization
18. When we face new challenges, we put together workable solutions from our existing resources
19. We actively plan with our suppliers how to manage disruptions
20. Our business regularly recognizes new business opportunities resulting from changes in the marketplace
21. We adapt quickly to accommodate changes in our environment or market
22. The job requires staff to come up with new ways of doing things
23. Staff are encouraged to take risks when trying new ideas
24. We view changes in our circumstances as opportunities to increase, improve or change our capabilities
25. Our organization adjusts and communicates its priorities as our circumstances change
26. We understand how we are connected to other organizations and actively manage those links
27. In dealing with competitors, my firm typically initiates actions, which competitors then respond to
28. We conduct scenario planning exercises to test our assumptions about our current plans
29. We take on a broader range of challenges than our competitors that have similar resources
30. We invest in building new capabilities when we face unique business challenges
31. The job requires staff to deal with ambiguous assignments, for which no previously established procedures exist
32. We are confident of our ability to find workable solutions to new challenges by using our existing resources

33. Our organization is able to easily quickly address new vulnerabilities when they are recognized
34. Not all of available resources are locked up in current business activities
35. We deal with new challenges by applying a combination of our existing resources and other resources inexpensively available to us
36. We work closely with our collaborators or network partners to spread our risks
37. We can always find the "manpower" to work on special projects
38. By combining our existing resources, we take on a variety of new challenges
39. Our organization quickly restores business performance after a disruption

7. TEAM RESILIENCE SCALE

(Sharma & Sharma, 2016)

The Team Resilience Scale was developed by Subhash Sharma and Sanjeev K. Sharma, with their work published in 2016. This development occurred in the context of increasing recognition of the importance of resilience at the team level within organizations. As work environments became more dynamic and complex, particularly with the rise of collaborative and project-based work structures, understanding how teams withstand and thrive amidst challenges became crucial. The purpose of this scale was to create a reliable and valid measure of resilience specifically at the team level. Unlike individual resilience, which focuses on personal traits and coping mechanisms, team resilience encompasses the collective capacity of a group to manage stress, recover from setbacks, and sustain performance under pressure. The Team Resilience Scale consists of 50 items designed to measure various dimensions of resilience within a team context, divided into 10 subscales:

1. Team learning orientation
2. Team flexibility
3. Network ties
4. Shared language
5. Trust
6. Team composition
7. Task design
8. Group norms
9. Perceived efficacy of team members
10. Perceived efficacy of collective team actions

Each item on the scale is typically rated on a Likert scale, with higher scores indicating greater resilience in the respective dimension. The scale was validated through empirical studies involving various teams across different organizational settings. This process included factor analysis and reliability testing to ensure the scale's psychometric properties. The Team Resilience Scale demonstrated good internal consistency and construct validity, making it a robust tool for assessing team resilience.

Items:

Team learning orientation

1. Mistakes are openly discussed in the team in order to learn from them
2. Differences between real and expected performance are critically and constructively analyzed in my team
3. The lessons learned are made available to all the team members
4. Actions are taken in the team to continuously improve the performance
5. Even when an error is caught in time, team members are still told about it, so it does not happen again
6. The same mistakes are made over and over again in the team
7. Team members are encouraged to ask “why”, regardless of their rank
8. We question each other when we think the work can be done better
9. We learn from each other in my team
10. Knowledge is shared among the different team members
11. Teamwork is encouraged as a way of learning from others
12. In team discussions, everyone’s opinion is taken into consideration
13. Our boss continuously looks for learning opportunities for him/herself or any team member
14. Our boss uses different strategies to encourage team members to acquire new knowledge

Team flexibility

15. Team members adjust their approaches to overcome obstacles
16. Team members easily handle a variety of tasks
17. The team frequently experiments with alternative ways we might accomplish our work

18. The team is highly imaginative in thinking about new or better ways to complete our tasks

Network ties

19. Teammates maintain close social relationships with each other
20. Team members effectively communicate with one another
21. Team members share necessary information with one another

Shared language

22. Team members try to use common terms for work
23. Team members use understandable communication patterns during discussions/meetings
24. Team members try to understand each other during work cooperation

Trust

25. I believe my team members trust each other
26. I have little faith that my teammates will consider my needs when making a decision
27. I believe my teammates are truthful and honest

Team composition

28. My team is larger than it needs to be
29. My team is just the right size to accomplish its purpose
30. Members of my team are too dissimilar to work together well
31. My team has a nearly ideal "mix" of members – a diverse set of people who bring different perspectives and experiences to the work
32. Everyone in my team has the special skills that are needed for teamwork
33. Some members of my team lack the knowledge and skills that they need to do their parts of the team's work

Task design

34. We do a whole, identifiable piece of work
35. My team does such a small part of the overall task that it is hard to point specifically to our special contribution
36. My team's work is inherently meaningful
37. The work we do requires the team to make many "judgment calls" as we carry it out

38. Carrying out my team's task automatically generates trustworthy indicators of how well we are
39. The only way we can figure out how well we are performing is for other people in the organization to tell us

Group norms

40. Standards for members' behavior in my team are vague and unclear
41. It is clear what is and what is not acceptable member behavior in my team
42. Members of my team agree about how members are expected to behave

Perceived efficacy of team members

43. I have confidence that my team members can perform tasks that are assigned to them
44. The members of my team are capable of doing their share of work whenever asked
45. Most of my team members are capable of handling responsibility

Perceived efficacy for collective team actions

46. My team is capable of helping a team member solve his/her problem
47. My team can work together in order to accomplish a goal
48. I believe in my team's ability to do things together
49. My team can handle the most difficult situations
50. Together our team is able to solve problems

3.2.3 Developing resilient leadership: styles and approaches

As thoroughly demonstrated by the literature review of Chapter 1, leaders play a fundamental role in shaping organizational resilience. As stated in Kahn's work (Kahn et al., 2018), leaders are agents, they can either foster or hamper teams' collaboration efforts, ultimately defining whether the organization is resilient or not. Resilient leadership is a broad concept that often overlaps with other theoretical concepts regarding various leadership styles, such as servant leadership, transformational leadership, authentic leadership, and compassionate leadership. The latter, particularly, is arguably the most important in the healthcare sector. It is generally been suggested that a more horizontal, shared type of leadership is an incentive for organizational resilience. The following scales aim to measure not only resilient leadership but also these other types of leadership styles that are "resilient-adjacent". As for the other scales presented in this thesis, they will be adapted to better fit the sectorial and geographical context of the research.

8. RESILIENT LEADERSHIP SCALE

(Zhang et al., 2024)

The Resilient Leadership Scale was developed by Jian Zhang, Chang Xie, and Shiyuan Huang, with their work published in 2024. The development of this scale took place during a period marked by significant challenges in the hospitality and tourism sectors, including the COVID-19 pandemic, economic uncertainties, and rapid technological changes. These industries faced unique pressures that required effective and resilient leadership to navigate and sustain operations through crises. The Resilient Leadership Scale consists of 29 items designed to measure various dimensions of resilient leadership within the hospitality and tourism context, divided into 7 subscales:

1. Contingency planning
2. Improvisation
3. Adaptive coaching
4. Contingency control
5. Emergency care
6. Adjustment recovery
7. Mutual growth

Each item on the scale is typically rated on a Likert scale, with higher scores indicating stronger resilience in the respective dimension. The scale was validated through empirical studies involving leaders in various hospitality and tourism enterprises. This process included pilot testing, factor analysis, and reliability testing to ensure the scale's psychometric properties. The Resilient Leadership Scale demonstrated good internal consistency and construct validity, confirming its reliability as a measure of resilient leadership. The use of a scale created for the hospitality sector is somehow coherent with the literature review previously presented since one of the most valuable contributions to resilient leadership (Lombardi et al., 2021) is also based on the analysis of the hospitality sector.

Items:

<u>Contingency planning</u>

1. Leaders develop contingency plans for emergencies
2. Leaders develop work plans for major crises
3. Leaders establish emergency response, leading team

4. Leaders have the ability to cope with crises or environmental changes in advance
5. Leaders reserved emergency resources for crisis

Improvisation

6. When a crisis occurs, leaders pay close attention to external risk situations
7. When a crisis occurs, leaders stay optimistic about change
8. When a crisis occurs, leaders cope with difficulties with ease
9. When a crisis occurs, leaders constantly come up with solutions to problems
10. When a crisis occurs, leaders adapt coping strategies to changes

Adaptive coaching

11. During a crisis, leaders share knowledge about the crisis with employees
12. During a crisis, leaders set an example for employees to cope
13. During a crisis, leaders instruct employees to cope with difficulties
14. During a crisis, leaders facilitate information sharing within the organization

Contingency control

15. During a crisis, leaders reward employees who actively engage in coping
16. During a crisis, leaders praise employees who perform well
17. During a crisis, leaders establish crisis response management systems and regulations

Emergency care

18. During a crisis, leaders care about employees' work and families
19. During a crisis, leaders help employees solve difficulties
20. During a crisis, leaders care about customers and support the community
21. During a crisis, leaders maintain good interpersonal relationships with employees

Adjustment recovery

22. Leaders find ways to restore the survival and development of enterprises after the crisis
23. Leaders adjust development strategies and work plans after the crisis
24. Leaders explore post-crisis market direction for turnaround
25. Leaders develop post-crisis market recovery plan

Mutual growth

26. Leaders encourage employees to view the crisis as an opportunity for learning and growth
27. Leaders encourage employees to solve problems on their own

28. Leaders constantly learn expertise and skills in crisis response
29. Leaders facilitate post-crisis business transformation and upgrade

9. COMPASSIONATE LEADERSHIP SELF-REPORTED SCALE

(Sansó et al., 2022)

The Compassionate Leadership Self-Reported Scale was developed by Núria Sansó, José Pablo Leiva, Guillermo Vidal-Blanco, Laura Galiana, and Michael West, with their work published in 2022. The purpose of the Compassionate Leadership Self-Reported Scale was to create a reliable and valid measure of compassionate leadership behaviors. Recognizing that existing leadership scales did not fully capture the essence of compassion within leadership, the researchers aimed to develop a tool that could assess leaders’ self-reported compassionate behaviors. The Compassionate Leadership Self-Reported Scale consists of 16 items designed to measure various dimensions of compassionate leadership, each item on the scale is typically rated on a Likert scale, with higher scores indicating stronger compassionate leadership behaviors. The scale was validated through empirical studies involving leaders in various organizational settings. The validation process included translation and cultural adaptation to ensure relevance for Spanish-speaking populations, as well as factor analysis and reliability testing to ensure the scale's psychometric properties. The Compassionate Leadership Self-Reported Scale demonstrated good internal consistency and construct validity, confirming its reliability as a measure of compassionate leadership.

Items:

1. I listen carefully when exploring problems
2. I pay close attention when listening
3. I am very attentive when a member of the team tells me about difficulties
4. I give full attention when members of the team describe the challenges they face
5. I am helpful in understanding the causes of difficulties the team faces
6. I do not impose my understanding of the causes of difficulties the team faces
7. I take time to understand carefully the causes of the problems
8. I work together with the team to come to an understanding of the problems
9. I am genuinely warm and empathic
10. I am emotionally in touch with others’ feelings when they are upset
11. I am sensitive to what others are feeling

12. I genuinely care about others' difficulties
13. I help people practically with problems they face
14. I take effective action to help others with the problems they face
15. I deal effectively with problems in order to help others
16. I am genuinely committed to making a difference by serving other

10. VERTICAL AND HORIZONTAL LEADERSHIP FOR CROSS-PROFESSIONAL HEALTHCARE TEAMS

(Emma Christine Thylefors & Persson, 2014)

The Horizontal Leadership Scale was developed by Emma Christine Thylefors and Olle Persson, with their work published in 2014. The purpose of the Horizontal Leadership Scale was to create a reliable and valid measure of horizontal leadership behaviors in cross-professional healthcare teams. Recognizing that traditional leadership scales did not adequately capture the dynamics of shared leadership, especially in the context of healthcare, Thylefors and Persson aimed to develop a tool that could assess the unique aspects of horizontal leadership. The goal was to provide a scale that could be used to evaluate and enhance the functioning of cross-professional teams in healthcare settings. The Horizontal Leadership Scale consists of 39 items designed to measure various dimensions of horizontal leadership within cross-professional healthcare teams, divided into 8 subscales:

1. Directive leadership
2. Participative leadership
3. Functional influence
4. Self-regulation
5. Team climate
6. Teamwork organization
7. Self-assessed effectiveness
8. Manager rated effectiveness

Each item on the scale is typically rated on a Likert scale, with higher scores indicating stronger horizontal leadership behaviors, or is represented by an "open question", to gather a piece of more qualitative information. The scale was validated through empirical studies involving various cross-professional healthcare teams. This process included factor analysis and reliability testing to ensure the scale's psychometric properties. The Horizontal Leadership

Scale demonstrated good internal consistency and construct validity, confirming its reliability as a measure of horizontal leadership.

Items:

Directive leadership

1. Our manager/team leader or equivalent controls actively the work within the team
2. The coordination of our efforts is done by our manager/team leader or by standardized routines
3. Our work is coordinated mainly by a manager, team leader or equivalent

Participative leadership

4. Our team leader coordinates work in cooperation with us, the team members
5. The work in our team is coordinated by us together with our team leader
6. Our manager/team leader shares the leadership with the team

Functional influence

7. The dominance of a profession depends entirely on the situation
8. Depending on the character of the issue/task the amount of influence varies among the members
9. The most suitable person at the time takes on leadership

Self-regulation

10. Everyone takes responsibility for coordinating their activities with others
11. In practice, we share the management responsibilities in the team
12. We govern ourselves in our teamwork, that is, the team is self-regulated

Team climate

13. Our meetings are characterized by the fact that all have their say
14. Our meetings have a positive "keynote"
15. We pay interest and attention to each other
16. Our work is focused, and everybody knows what has to be done, by whom and when
17. We are good at expressing ourselves clearly
18. We deal with controversies that occur in our team in a constructive way
19. We are good at listening to each other
20. Our meetings are characterized by a free exchange of views
21. We get along very well in the team
22. We strive for decisions in consensus

23. Now and then the team takes a break to evaluate the work process
24. We all take an active part in our team discussions
25. Our differing opinions are respected
26. We share opinions, knowledge, and experiences within the team
27. Individual contributions are encouraged in the team
28. We are open to new ideas in our team
29. Suggestions on how we can make things in a different way are welcomed
30. We help each other to achieve great results
31. We will not give up until an issue is resolved
32. Criticism within the team is given in a constructive and positive manner

Teamwork organization

33. To what degree is the teamwork efficiently organized?

Self-assessed effectiveness

34. To what degree do you consider all team members working towards the same goal?
35. To what degree do the efforts within the team reach a high quality?
36. To what degree does the work of the team meet the users/clients/patients/pupils' needs?
37. To what degree does your team fulfill its goals?
38. To what degree do you have a high level of expertise within the team?

Manager-rated effectiveness

Same as above with minor adjustments +

39. Taking all your information about the team into account, where on the effectiveness scale would you place the team?

11. SHARED LEADERSHIP IN FINNISH SOCIAL AND HEALTHCARE

(Konu & Viitanen, 2008)

The Shared Leadership Scale was developed by Anne Konu and Elina Viitanen, with their work published in 2008. The purpose of the Shared Leadership Scale was to create a reliable and valid measure of shared leadership behaviors specifically within the Finnish social and healthcare context. Recognizing that leadership in these sectors often requires collaborative decision-making and shared responsibilities among professionals, Konu and Viitanen aimed to develop a tool that could assess the extent to which leadership functions were distributed among team members. The goal was to provide insights into how shared leadership could enhance

team effectiveness and improve service delivery. The Shared Leadership Scale consists of 12 items designed to measure various dimensions of shared leadership within social and healthcare teams, each item on the scale is typically rated on a Likert scale, with higher scores indicating stronger shared leadership behaviors. The scale was validated through empirical studies involving various social and healthcare teams in Finland. This process included factor analysis and reliability testing to ensure the scale's psychometric properties. The Shared Leadership Scale demonstrated good internal consistency and construct validity, confirming its reliability as a measure of shared leadership.

Items:

1. I make an effort to understand my own behavior/action and that of others
2. I start workgroups and promote teamwork
3. I look for new ways of action together with my subordinates
4. I transfer to my subordinates the latest knowledge and skills concerning their work
5. I restore work peace and mediate disputes between subordinates
6. I conduct performance discussions and ensure that goals are met within my management area and by my subordinates
7. I support and encourage participative decision-making in the different units of my organization
8. I can pay attention to my subordinates’ opinions, ideas, and initiatives regarding their work community
9. Flow of information from first-line managers to higher levels is smooth
10. Receives feedback from subordinate first-line managers
11. Receive support from superior
12. Receives support from another unit’s manager

3.2.4 Organizational learning

Organizational learning is a fundamental aspect of organizational resilience. The concept of organizational learning includes both the idea of exploiting past experiences as “lessons to be learned” and the activity of gathering and analyzing information while dealing with a crisis. The apparent conflict between valuing the past and the “way things are currently done” (i.e. established and validated procedures, methods, routines, etc.) and the ability to “think outside the box” and find new solutions that go beyond past practices is a core element of organizational

learning, whose successful implementation involves finding an equilibrium between these two tendencies. Another fundamental aspect of organizational learning is building systems, practices, and organizational relationships that allow easy and fast knowledge sharing(inside and outside the organization's boundaries). This involves both human resources and administrative aspects of an organization. The following scale aims to measure the majority of these aspects.

12. ORGANIZATIONAL LEARNING SCALE

(Lloria & Moreno-Luzon, 2014)

The Organizational Learning Scale was developed by María Begoña Lloria and María del Mar Moreno-Luzon, with their work published in 2014. The purpose of the Organizational Learning Scale was to create a comprehensive and integrative measure of organizational learning processes. Lloria and Moreno-Luzon aimed to address the fragmented nature of existing scales by proposing a unified instrument that could capture the multidimensional aspects of organizational learning. The goal was to provide a tool that researchers and practitioners could use to assess and enhance the learning capabilities of organizations, thereby fostering continuous improvement and innovation. The Organizational Learning Scale consists of 18 items designed to measure various dimensions of organizational learning, each item on the scale is typically rated on a Likert scale, with higher scores indicating stronger organizational learning behaviors. The scale was validated through empirical studies involving various organizations across different industries. This process included factor analysis and reliability testing to ensure the scale's psychometric properties. The Organizational Learning Scale demonstrated good internal consistency and construct validity, confirming its reliability as a measure of organizational learning.

Items:

1. The people in our company are capable of making a break with traditional perceptions in order to see things in a new, different light
2. The people in our company try to understand the way their colleagues and workmates think and act
3. The company's files and databases provide its employees with the necessary information to do their job effectively

4. Thanks to problem-solving, groups come together to create radically different solutions
5. Groups of people share a common understanding of subjects pertinent to the areas they work in
6. In meetings, everyone's point of view is given due consideration
7. Information systems allow individuals to share information
8. The company has formal mechanisms which allow good practice to be shared by different departments
9. Groups share knowledge and experience via dialogue
10. There exist procedures in the company for receiving proposals from its employees, collecting them and internally distributing them
11. Meetings are periodically held where all employees are informed about any new developments in the company
12. The company periodically produces a report in which all staff are informed about the company's progress
13. The organization's procedures and processes are laid down in a manual, standards booklet, or similar
14. The company has databases, which allow experiences and knowledge to be stored and used at a later date
15. Suggestions from the company's own employees are frequently incorporated into its processes, products, or services
16. The system for the management of human resources motivates its staff to share knowledge through its policy of rewards
17. Alliances and networks are established with other companies to encourage learning
18. Agreements are made with universities or other technological and research centers to encourage learning

3.2.5 Interdependence within teams

Referring to Thompson's theory (Thompson, 1974) for the definition of interdependence, Kahn's theory (Kahn et al., 2018)establishes interdependence as one of the main factors that determines the groups' willingness to help. Adjoining parts' willingness to help, together with their ability to help, determines whether the adjoining parts will assist the focal part (i.e. the

organizational group that is most affected by strain) or will “turn their back” on it. The following scales’ primary goal is to measure the level of interdependence existing inside a team, rather than between teams. The choice of using them anyway is justified by Kahn’s theory. The process by which adjoining parts come to the rescue of the focal part involves the modification of the groups’ boundaries and a shift in the groups’ members’ identification. This means that when a group decides to help another group it has already collectively changed its own concept of group, extending it to the members of the focal group. People need to perceive others as members of the same group in order to be willing to help them.

13. TEAM INTERDEPENDENCE SCALE

(Rossi, 2008)

The Team Interdependence Scale was developed by Michael E. Rossi, with his work published in 2008. The purpose of the Team Interdependence Scale was to create a comprehensive and valid measure of team interdependence that could be applied across different team settings. Rossi aimed to address the limitations of existing measures by developing an instrument that captured the complex and varied aspects of interdependence within teams. The goal was to provide a tool that researchers and practitioners could use to assess and improve the interdependent functioning of teams, ultimately enhancing team performance and effectiveness. The Team Interdependence Scale consists of 24 items designed to measure various dimensions of interdependence within teams, divided into 4 subscales:

1. Task items
2. Resource items
3. Reward items
4. Goal items

Each item on the scale is typically rated on a Likert scale, with higher scores indicating stronger interdependence in the respective dimension. The scale was validated through empirical studies involving various types of teams across different organizational settings. This process included factor analysis and reliability testing to ensure the scale's psychometric properties. The Team Interdependence Scale demonstrated good internal consistency and construct validity, confirming its reliability as a measure of team interdependence.

Items:

Task items

1. My job is designed in such a way that I must interact with my coworkers in order to perform effectively
2. The nature of my job requires me to work together with my coworkers to complete specific tasks
3. I often need to work directly with my coworkers in order to effectively perform my job
4. If I do not engage in job-related interactions with my coworkers, it is difficult to adequately perform my job
5. My job requires me to coordinate my actions with those of my coworkers
6. I am unable to perform my job effectively if certain coworkers are unavailable
7. My coworkers and I depend on each other's actions in order to complete our own assignments

Resource items

8. My coworkers cannot successfully complete their jobs unless they receive information from me
9. My job requires that I use resources provided by coworkers in order to complete assignments
10. I rely on my coworkers for information in order to achieve a desired level of job performance
11. I rely on my coworkers for materials in order to achieve a desired level of job performance
12. I depend on my coworkers for inputs required to complete my work

Reward items

13. I could receive a high pay increase if my performance was average but my coworkers performed exceptionally
14. I am rewarded based on the performance of my coworkers, not my individual performance
15. My organization focuses on the performance of teams or work units when allocating rewards
16. My salary increases and/or bonuses I receive for performance depend on the performance of my coworkers
17. It would be difficult for me to receive a high pay increase if my coworkers do not perform well in their jobs

18. In my organization, pay raises or bonuses are often similar in amount for individuals within the same team or workgroup

Goal items

19. .My organization/supervisor encourages its employees to focus on goals set at the team level rather than at the individual level
20. My supervisor sets goals that are contingent on the performance of multiple workers
21. It is important for my work group to set achievement goals for itself
22. My coworkers and I have the same or similar work goals
23. My coworkers and I are all working toward a common shared goal
24. When I set goals at work, they are often dependent on the progress of my coworkers

14. WORKGROUP INTERDEPENDENCE SCALE

(Alves & Lourenco, 2017)

The Workgroup Interdependence Scale was developed by Mário Pina Alves and Paulo Renato Lourenço, with their work published in 2017. The purpose of the Workgroup Interdependence Scale was to create a reliable and valid measure of interdependence within workgroups. Alves and Lourenço aimed to address the limitations of existing scales by incorporating both group-referent scales and social network analysis. This dual approach was intended to provide a more comprehensive understanding of how interdependence operates within workgroups, encompassing both the perceptions of group members and the actual patterns of interaction and dependency. The Workgroup Interdependence Scale consists of 14 items designed to measure various dimensions of interdependence within workgroups, divided into 3 subscales:

1. Functional interdependence
2. Outcome interdependence
3. Task interdependence

Each item on the scale is typically rated on a Likert scale, with higher scores indicating stronger interdependence in the respective dimension. The scale was validated through empirical studies involving various types of workgroups across different organizational settings. This process included factor analysis and reliability testing to ensure the scale's psychometric properties. The Workgroup Interdependence Scale demonstrated good internal consistency and construct validity, confirming its reliability as a measure of workgroup interdependence.

Items:

Functional interdependence

In my team:

1. We have technical expertise for role and job rotation as members of the same team
2. We are able to replace each other in our tasks within the team
3. We are able to assume the duties and responsibilities of our teammates
4. When one member has work overload, his work can be well done by colleagues
5. When someone is missing at work, the other group members have the knowledge to perform their tasks
6. We know the work of other group members

Outcome interdependence

In my team:

7. Our individual goals come directly from the team's objectives
8. The tasks we perform are determined by the objectives of the team
9. The information about how well we are doing our job comes mainly from information about how well the work of the whole team is doing
10. Our activities of a normal working day are determined by the team's goals for that day
11. The evaluation of our individual performance is strongly influenced by the quality of the whole team's performance
12. The rewards received by the individual work (as salary or promotions) are determined in large part by contributions of each team member

Task interdependence

In my team:

13. We are not able to accomplish our tasks without information from other team members
14. Team members depend on each other for information or materials needed to perform their tasks

3.2.6 Group identification

Since the proposed scales in section 3.2.5 are justified by Khan's theory, according to which members of a group modify their identification to extend it to members of other groups, essentially redefining the organization's geography, I consider it important to propose a scale aimed at measuring organizational identification.

15. MODEL FOR TEAM IDENTIFICATION, TRUST, AND CONFLICT

(Han & Harms, 2010)

The study by Han and Harms (2010) focuses on the relationships between team identification, trust, and conflict within teams, proposing a mediation model. This model explores how identification with a team influences trust among team members, which in turn affects the level and type of conflict experienced within the team. Therefore, the model comprises three different scales. I chose to report all three scales, rather than just one, because I think they help gather a better understanding of team identification dynamics.

Items:

Team identification (Allen & Meyer, 1990)

1. Feel emotionally attached to their team
2. Feel a strong sense of belonging to their team
3. Feel as if the teams' problems are their own
4. Feel like part of the family in their team

Trust in peers (Jarvenpaa & Leidner, 1999)

5. I could rely on those with who I worked on the team
6. Overall, team members are very trustworthy

Task conflict and relationship conflict (Jehn, 1995)

7. How much friction is there among members in your work unit?
8. How much are personality conflicts evident in your work unit?
9. How much tension is there among members in your work unit?
10. How much emotional conflict in there among members in your work unit?
11. How often do people in your work unit disagree about opinions regarding the work being done?
12. How frequently are there conflicts about ideas in your work unit?
13. How much conflict about the work you do is there in your work unit?
14. To what extent are there differences of opinion in your work unit?

3.2.7 Hierarchy

The relevance of the hospital's organizational hierarchy has emerged from the interviews' analysis. It is therefore appropriate, in my opinion, to propose a measure of the organizational hierarchy. Ideally, the analysis of the results of both the leadership measures and the hierarchy

measures will help shed light on the particular equilibrium that seems characteristic of healthcare organizations.

16. BIPARTITE MEASURE OF SOCIAL HIERARCHY

(Yu et al., 2018)

The Bipartite Measure of Social Hierarchy, developed by Yu, Hays, and Zhao (2019), represents a significant advancement in understanding and measuring social hierarchy within organizations. This measure distinguishes between two distinct but related dimensions of social hierarchy: perceived power and perceived status. For each dimension, a scale of 6 items is presented, each item is typically rated on a Likert scale, with higher scores indicating stronger hierarchical tendency. The authors conducted a series of studies to develop and validate the scales, ensuring they accurately capture perceived power and perceived status, the measure was tested across diverse samples and organizational contexts to ensure its robustness and generalizability.

Items:

Perceived workplace power

1. I supervise a large number of subordinates
2. I formally manage many other people
3. I can provide rewards to others at my own discretion
4. I have a great deal of power at work
5. I have the authority to discipline others when needed
6. My designed role allows me to control a lot of resources

Perceived workplace status

7. Others often seek my opinion because they respect me
8. I have a good reputation among those I work with
9. I am highly respected by others at work
10. People look up to me because I am good at my job
11. I am admired by others at work because I am seen as competent in my work
12. Coworkers come to me because they trust my judgment

THEMES FROM LITERATURE AND CORREPONDING SCALES	
theme	**scale**
Organizational and team resilience	scale 5. Organizational resilience scale
	scale 6. Organizational resilience of SMEs
	scale 7. Team resilience scale
Resilient leadership: styles and approaches	scale 8. Resilient leadership scale
	scale 9. Compassionate leadership self-reported scale
	scale 10. Vertical and Horizontal leadership for cross-professional healthcare teams
	scale 11. Shared leadership in Finnish social and healthcare
Organizational learning	scale 12. Organizational learning scale
Interdependence within teams	scale 13. Team interdependence scale
	scale 14. Workgroup interdependence scale
Group identification	scale 15. Model for team identification, trust, and conflict
THEMES FROM LITERATURE LACKING A SCALE	
A proper measure for healthcare crises	
A good measure of power dynamics between groups belonging to the same organization	
A scale regarding inter-group history	
A scale regarding safety in the healthcare context	
THEMES FROM THEMATIC ANALYSIS OF INTERVIEWS AND CORRESPONDING SCALES	
theme	**scale**
Hierarchy	scale 16. Bipartite emasure of social hierarchy
THEMES FROM THEMATIC ANALYSIS OF INTERVIEW LACKING A SCALE	
A measuring scale for action- and goal-oriented behaviour	
A measuring scale for employees' commitment	
A scale for organizational snese of hope	
ADDITIONAL SCALES	
theme	**scale**
Individual resilience	scale 1. Connor-Davidson resilience scale
	scale 2. Connor-Davidson scale (short version)
	scale 3. Resilience for adults
	scale 4. Medical professionals' resilience scale

14. General overview - personal elaboration

CONCLUSIONS

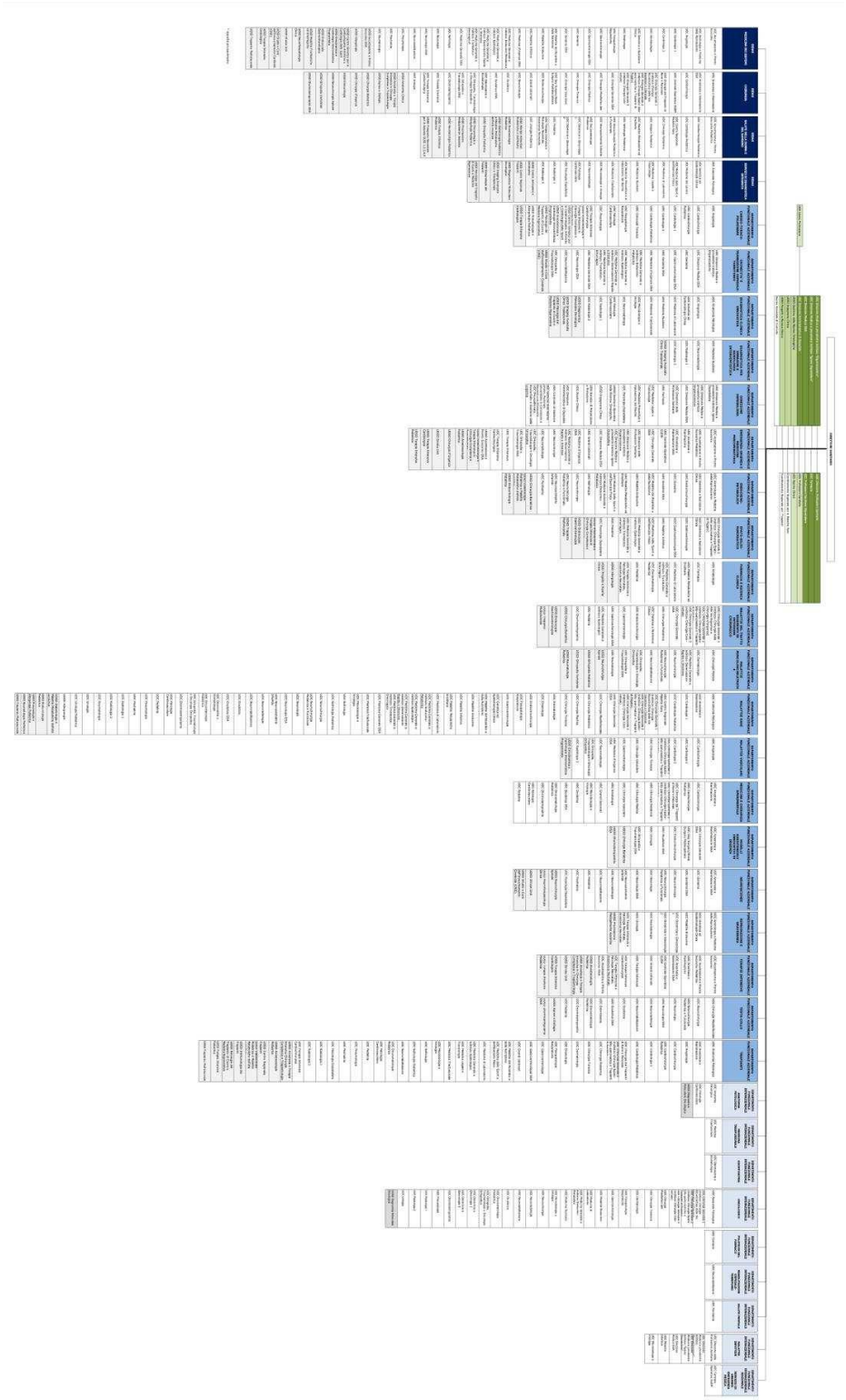
The aim of this thesis is to define the characteristics of a resilient organization and to identify them, if possible, in the real context of the healthcare system. The thematic analysis of the interviews confirms, at least partially, what is theoretically suggested in chapters one and two. In particular, the thesis seem to confirm the theoretical validity of Kahn's theory. The notable relevance of elements such as organizational learning, distributed/shared leadership, group dynamics, and group theory can, in my opinion, be effectively measured by the scales presented. To achieve this, it will be important to adapt them to a healthcare context, characterized by a very complex organizational chart and being a public entity.

The contribution of this thesis should be viewed in the context of the national research project to which it belongs. In addition to a thorough analysis of the theory on organizational resilience, the measures presented will be used to create a questionnaire that will be administered to the

hospital population in the near future. Moreover, the thesis highlights some themes that need further exploration. In particular, I find very interesting the balance and tension between distributed leadership and hierarchy, which seems characteristic of the healthcare sector and which can determine a substantial difference between the ways in which a healthcare organization is resilient and those in which any other organization, generally private, is.

In conclusion, this thesis effectively plays an "exploratory" role, correctly and precisely identifying the relevant elements of organizational resilience and proposing measures based not only on theory but also on the thematic analysis of some pertinent interviews. These measures, after being appropriately adapted to the context, can constitute valid elements for statistical research.

APPENDIX A



Azienda Ospedale-Università di Padova organizational chart. https://www.aopd.veneto.it/all/ORGANIGRAMMA_AREA_OSPEDALIERA_DDG_2126_2023.pdf

REFERENCES

Allen, N. J., & Meyer, J. P. (1990). The measurement and antecedents of affective, continuance and normative commitment to the organization. *Journal of Occupational Psychology*, *63*(1), 1–18. https://doi.org/10.1111/j.2044-8325.1990.tb00506.x

Alves, M. P., & Lourenco, P. R. (2017). Workgroup interdependence assessment: Group-referent scales and social network analysis. *TPM - Testing, Psychometrics, Methodology in Applied Psychology*, *1*, 23–44. https://doi.org/10.4473/TPM24.1.2

Antunes, H. de J. G., & Pinheiro, P. G. (2020). Linking knowledge management, organizational learning and memory. *Journal of Innovation & Knowledge*, *5*(2), 140–149.

Argyris, C. (1977). Double loop learning in organizations. *Harvard business review*, *55*(5), 115–125.

Armenta, B. M., Stroebe, K., Scheibe, S., Van Yperen, N. W., Stegeman, A., & Postmes, T. (2017). Permeability of Group Boundaries: Development of the Concept and a Scale. *Personality and Social Psychology Bulletin*, *43*(3), 418–433. https://doi.org/10.1177/0146167216688202

Bailey, S., & Burhouse, A. (2019). From super-hero to super-connector, changing the -leadership culture in the NHS. *Future Healthcare Journal*, *6*(2), 106–109. https://doi.org/10.7861/futurehosp.6-2-106

Bakacsi, G. (2010). Managing crisis: Single-loop or double-loop learning. *Strategic Management*, *15*(3), 3–9.

Barasa, E., Mbau, R., & Gilson, L. (2018). What Is Resilience and How Can It Be Nurtured? A Systematic Review of Empirical Literature on Organizational Resilience. *International Journal of Health Policy and Management*, *7*(6), 491–503. https://doi.org/10.15171/ijhpm.2018.06

Benevene, P., Buonomo, I., & West, M. (2022). Editorial: Compassion and compassionate leadership in the workplace. *Frontiers in Psychology*, *13*, 1074068. https://doi.org/10.3389/fpsyg.2022.1074068

Campbell-Sills, L., & Stein, M. B. (2007). Psychometric analysis and refinement of the connor–davidson resilience scale (CD-RISC): Validation of a 10-item measure of resilience. *Journal of Traumatic Stress*, *20*(6), 1019–1028. https://doi.org/10.1002/jts.20271

Cartwright, S. (2002). Double-loop learning: A concept and process for leadership educators. *Journal of leadership education*, *1*(1), 68–71.

Chen, R., Xie, Y., & Liu, Y. (2021). Defining, Conceptualizing, and Measuring Organizational Resilience: A Multiple Case Study. *Sustainability*, *13*(5), Articolo 5. https://doi.org/10.3390/su13052517

Connor, K. M., & Davidson, J. R. T. (2003). Development of a new resilience scale: The Connor-Davidson Resilience Scale (CD-RISC). *Depression and Anxiety*, *18*(2), 76–82. https://doi.org/10.1002/da.10113

De Zulueta, P. (2015). Developing compassionate leadership in health care: An integrative review. *Journal of Healthcare Leadership*, 1. https://doi.org/10.2147/JHL.S93724

Easterby-Smith, M., Crossan, M., & Nicolini, D. (2000). Organizational learning: Debates past, present and future. *Journal of management studies*, *37*(6), 783–796.

Eliot, J. L. (2020). Resilient leadership: The impact of a servant leader on the resilience of their followers. *Advances in Developing Human Resources*, *22*(4), 404–418.

Emma Christine Thylefors, I., & Persson, O. (2014). The more, the better?: Exploring vertical and horizontal leadership in cross-professional health care teams. *Leadership in Health Services*, *27*(2), 135–149. https://doi.org/10.1108/LHS-09-2012-0031

Everly, G. S., Smith, K. J., & Lobo, R. (2013). Resilient leadership and the organizational culture of resilience: Construct validation. *International Journal of Emergency Mental Health and Human Resilience*, *15*(2), 123–128.

Friborg, O., Hjemdal, O., Rosenvinge, J. H., & Martinussen, M. (2003). A new rating scale for adult resilience: What are the central protective resources behind healthy adjustment? *International Journal of Methods in Psychiatric Research*, *12*(2), 65–76. https://doi.org/10.1002/mpr.143

Fridell, M., Edwin, S., Von Schreeb, J., & Saulnier, D. D. (2019). Health System Resilience: What Are We Talking About? A Scoping Review Mapping Characteristics and Keywords. *International Journal of Health Policy and Management*, *9*(1), 6–16. https://doi.org/10.15171/ijhpm.2019.71

Giustiniano, L., Cunha, M. P. E., Simpson, A. V., Rego, A., & Clegg, S. (2020). Resilient Leadership as Paradox Work: Notes from COVID-19. *Management and Organization Review*, *16*(5), 971–975. https://doi.org/10.1017/mor.2020.57

Gladwell, M. (2000). *The Law of the Few. The Tipping Point*. Little Brown.

Han, G. (Helen), & Harms, P. D. (2010). Team identification, trust and conflict: A mediation model. *International Journal of Conflict Management*, *21*(1), 20–43. https://doi.org/10.1108/10444061011016614

Hanefeld, J., Mayhew, S., Legido-Quigley, H., Martineau, F., Karanikolos, M., Blanchet, K., Liverani, M., Yei Mokuwa, E., McKay, G., & Balabanova, D. (2018). Towards an understanding of resilience: Responding to health systems shocks. *Health Policy and Planning*, *33*(3), 355–367. https://doi.org/10.1093/heapol/czx183

Hollnagel, E., & Braithwaite, J. (2019). *Resilient Health Care* (0 ed.). CRC Press. https://doi.org/10.1201/9781315605722

Hwang, P., & Lichtenthal, J. D. (2000). Anatomy of Organizational Crises. *Journal of Contingencies and Crisis Management*, *8*(3), 129–140. https://doi.org/10.1111/1468-5973.00132

Jarvenpaa, S. L., & Leidner, D. E. (1999). Communication and Trust in Global Virtual Teams. *Organization Science*, *10*(6), 791–815. https://doi.org/10.1287/orsc.10.6.791

Jehn, K. A. (1995). A Multimethod Examination of the Benefits and Detriments of Intragroup Conflict. *Administrative Science Quarterly*, *40*(2), 256. https://doi.org/10.2307/2393638

Kahn, W. A., Barton, M. A., Fisher, C. M., Heaphy, E. D., Reid, E. M., & Rouse, E. D. (2018). The Geography of Strain: Organizational Resilience as a Function of Intergroup Relations. *Academy of Management Review*, *43*(3), 509–529. https://doi.org/10.5465/amr.2016.0004

Kantur, D. (2015). Measuring Organizational Resilience: A Scale Development. *Pressacademia*, *4*(3), 456–456. https://doi.org/10.17261/Pressacademia.2015313066

Konu, A., & Viitanen, E. (2008). Shared leadership in Finnish social and health care. *Leadership in Health Services*, *21*(1), 28–40. https://doi.org/10.1108/17511870810845888

Lloria, M. B., & Moreno-Luzon, M. D. (2014). Organizational learning: Proposal of an integrative scale and research instrument. *Journal of Business Research*, *67*(5), 692–697. https://doi.org/10.1016/j.jbusres.2013.11.029

Lombardi, S., Pina E Cunha, M., & Giustiniano, L. (2021). Improvising resilience: The unfolding of resilient leadership in COVID-19 times. *International Journal of Hospitality Management*, *95*, 102904. https://doi.org/10.1016/j.ijhm.2021.102904

Menegus, G. (2020). La regione Veneto nell'emergenza Covid-19. *Osservatorio sulle fonti*, *2/2020*, 1–15.

Milburn, T. W., Schuler, R. S., & Watman, K. H. (1983). Organizational Crisis. Part I: Definition and Conceptualization. *Human Relations*, *36*(12), 1141–1160. https://doi.org/10.1177/001872678303601205

Mlađan e Cvetković. (2013). Classification of emergency situations. In *Thematic Proceedings of International Scientific Conference "Archibald Reiss Days* (pp. 275–291).

Morgans, A., & Burgess, S. J. (2011). What is a health emergency? The difference in definition and understanding between patients and health professionals. *Australian Health Review*, *35*(3), 284. https://doi.org/10.1071/AH10922

Munoz, A., Billsberry, J., & Ambrosini, V. (2022). Resilience, robustness, and antifragility: Towards an appreciation of distinct organizational responses to adversity. *International Journal of Management Reviews*, *24*(2), 181–187. https://doi.org/10.1111/ijmr.12289

Orth, D., & Schuldis, P. (2021). Organizational learning and unlearning capabilities for resilience during COVID-19. *The Learning Organization*, *ahead-of-print*. https://doi.org/10.1108/TLO-07-2020-0130

Patriarca, R., Di Gravio, G., Costantino, F., Falegnami, A., & Bilotta, F. (2018). An Analytic Framework to Assess Organizational Resilience. *Safety and Health at Work*, *9*(3), 265–276. https://doi.org/10.1016/j.shaw.2017.10.005

Rahman, M. A., Yusoff, M. S. B., Roslan, N. S., Mohammad, J. A.-M., & Ahmad, A. (2021). Development and validation of the medical professionals resilience scale. *BMC Health Services Research*, *21*(1), 482. https://doi.org/10.1186/s12913-021-06542-w

Roncarolo, F., Boivin, A., Denis, J.-L., Hébert, R., & Lehoux, P. (2017). What do we know about the needs and challenges of health systems? A scoping review of the international literature. *BMC Health Services Research*, *17*(1), 636. https://doi.org/10.1186/s12913-017-2585-5

Rossi, M. E. (2008). *The development and Validation of the Comprehensive Team Interdependence Scale*. University of South Florida.

Russo, E., Brogi, E., Gamberini, E., & Agnoletti, V. (2020). COVID-19: A clinical and organizational crisis. *Internal and Emergency Medicine*, *15*(5), 897–899. https://doi.org/10.1007/s11739-020-02410-3

Sansó, N., Leiva, J. P., Vidal-Blanco, G., Galiana, L., & West, M. (2022). The measurement of compassionate leadership: Adaptation and Spanish validation of the compassionate leadership self-reported scale. *Scandinavian Journal of Caring Sciences*, *36*(4), 1165–1179. https://doi.org/10.1111/scs.13079

Sharma, S., & Sharma, S. K. (2016). Team Resilience: Scale Development and Validation. *Vision: The Journal of Business Perspective*, *20*(1), 37–53. https://doi.org/10.1177/0972262916628952

Thompson, J. D. (1974). Social Interdependence, the Polity, and Public Administration. *Administration & Society*, *6*(1), 3–20. https://doi.org/10.1177/009539977400600101

Verreynne, M.-L., Ford, J., & Steen, J. (2023). Strategic factors conferring organizational resilience in SMEs during economic crises: A measurement scale. *International Journal of Entrepreneurial Behavior & Research*, *29*(6), 1338–1375. https://doi.org/10.1108/IJEBR-07-2022-0681

Yu, M., Vaagaasar, A. L., Müller, R., Wang, L., & Zhu, F. (2018). Empowerment: The key to horizontal leadership in projects. *International Journal of Project Management*, *36*(7), 992–1006. https://doi.org/10.1016/j.ijproman.2018.04.003

Zhang, J., Xie, C., & Huang, S. (Sam). (2024). Resilient leadership in hospitality and tourism enterprises: Conceptualization and scale development. *International Journal of Contemporary Hospitality Management*, *36*(4), 1299–1326. https://doi.org/10.1108/IJCHM-10-2022-1274

SITOGRAPHY

https://www.governo.it/it/costituzione-italiana/parte-prima-diritti-e-doveri-dei-cittadini/titolo-ii-rapporti-etico-sociali#:~:text=a%20tale%20scopo.-,Art.,non%20per%20disposizione%20di%20legge

https://www.salute.gov.it/portale/ministro/p4_5_2_6_1.jsp?lingua=italiano&label=cenniStorici&menu=cenniStorici&id=546

https://www.salute.gov.it/portale/lea/dettaglioContenutiLea.jsp?id=5073&area=Lea&menu=vuoto

https://www.salute.gov.it/portale/lea/menuContenutoLea.jsp?lingua=italiano&area=Lea&menu=ospedaliera

https://www.salute.gov.it/portale/lea/menuContenutoLea.jsp?lingua=italiano&area=Lea&menu=socioSanitaria

https://www.salute.gov.it/portale/lea/menuContenutoLea.jsp?lingua=italiano&area=Lea&menu=distrettuale

https://www.salute.gov.it/portale/prontoSoccorso/dettaglioContenutiProntoSoccorso.jsp?lingua=italiano&id=1190&area=118%20Pronto%20Soccorso&menu=vuoto&tab=1

https://www.regione.veneto.it/web/sanita

https://www.salute.gov.it/portale/lea/dettaglioContenutiLea.jsp?lingua=italiano&id=4694&area=Lea&menu=leaEssn

https://salute.regione.veneto.it/home

https://www.regione.veneto.it/web/guest/aziende-ulss-e-ospedaliere

https://www.aulss1.veneto.it

https://www.aulss2.veneto.it

https://www.aulss3.veneto.it/home

https://www.aulss4.veneto.it

https://www.aulss5.veneto.it

http://www.aulss6.veneto.it

https://www.aulss7.veneto.it

http://www.aulss8.veneto.it

http://www.aulss9.veneto.it

https://www.aopd.veneto.it

https://www.aovr.veneto.it/ecm/home

https://www.ioveneto.it

https://salute.regione.veneto.it/aziendazero

https://temi.camera.it/leg19/temi/19_tl18_organizzazione_ssn.html

https://www.who.int/our-work/health-emergencies

https://www.who.int/emergencies/grading

https://www.aosp.bo.it/it/content/chi-siamo

https://www.aopd.veneto.it/all/ORGANIGRAMMA_AREA_OSPEDALIERA_DDG_2126_2023.pdf

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