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Course in Global Organization and Hrm

Organizational Resilience and Corporate Improvisation

as a consequence of a railway accident

A research thesis about railway disruption

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Chapter 1

Abstract

Purpose:

Railways have been an essential part of modern society, serving as a critical means of transportation for both people and goods. However, railways also face many challenges, including natural disasters, human errors, and technological failures. As a result, railway organizations must be prepared to face such challenges and respond effectively to them. This requires the development of organizational resilience and corporate improvisation capabilities. The purpose of this paper is to deepen the relationship that is created between organizational resilience and corporate improvisation when a train wreck occurs, therefore, when the company is in a phase of uncertainty and total unpredictability. This paper demonstrates how the strategy of organizational resilience can bring the company back to its initial phase of equilibrium and stability, and which behavioral aspects of business improvisation should be used. I relied on the literature on organizational resilience and improvisation for the benefit of my research. This work has a certain contribution to related research in the field of organizational resilience and corporate improvisation.

Finding: This report contains information on company organization, divisional cooperation, and customer communication. Concerning the management of the unexpected, the following aspects were noted: the perception of customers that the company handles the unexpected in the best possible way, the perception of employees with colleagues regarding resolution activities, and the possibility of improvement for the company in the field of technology. The most prevalent contingencies observed were: derailment, accidents, collisions, or maintenance failures. Furthermore, the following features of the passenger relationship were observed: effective, fast, and timely communication about the unexpected incident, a shared commitment of staff to attempt to be more available, and the implementation of security protocols to avoid unpleasant situations. The following aspects were uncovered regarding the company's organization and communication: the impact of the unexpected on the organizational chart, employee autonomy, and the company's digitalization.

Research Limitations:

Due to its qualitative research trait, it cannot be taken as reliable data. Given that I only had the opportunity to contact a small number of dependents, this information may be viewed as relative research rather than an absolute statement. Although it cannot be taken as an absolute fact, it may be used as a starting point and a guide for future research.

Originality/value: The importance of my research is that it can assist organizations working in the railway industry in developing and implementing feasible solutions in order to handle disruptions in the best possible way while maintaining company prestige. Organizations can more easily integrate economic and social goals in this manner.

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1.1 Introduction

'Resiliere of human system [is] the capacity of a system to absorb human/natural shocks or disturbances or reorganize while undergoing change that either retains, or develops further, essentials functions, structures, identities, and feedback that characterize the system.'[1]

Improvisation is a natural human activity, the result of intellect in unexpected situations, and a means of coping with resource limitations. It is driven by the urge to get beyond a block, problem, inconvenience, or constraint. Although improvisational innovations might benefit society, they can also have unintended consequences. This is especially true when improvised settings are present, such as risky or uncharted territory at work. To fulfill their missions and deploy their core functions, organizations must find and implement organizational macro and microstructures quickly and timely, in a way that enables them to transform jolts and shocks into new solutions and possibilities. Organizations that survive and thrive in the context of a risky society develop this ability.

The word "resilience" is derived from the Latin word "resilire," which means to rebound. According to Dictionary, "resilience" is the capacity of an individual or entity to bounce back swiftly after adversity (such as a hit, injury, etc.), or the capacity of a thing to bounce back after being bent, stretched, or pressed.[2]Improvising is having to deal with something that hasn't been planned, and when it's done by the business, it's referred to as business improvisation. Contrarily, when it comes to the individual level, improvisation occurs when each person works to adopt solutions that are appropriate for the current challenge, changing the routine in the process.[3] Resilience, in a nutshell, denotes the capacity for constructive adaptation, awareness of one's limitations and flaws, process reorganization to avoid cognitive pitfalls and skewed team dynamics, and departure from established patterns in a dynamic manifestation of adaptability to adversity. Positive adaptation results cannot be predicted or planned but instead must show. [4] Following these indications, new skills are developed both in the face of change management and in the face of stress and risk management. Risk is the possibility, seen from both sides, which can be either negative or positive, that some unforeseen event may occur that may impact positively and therefore a gain or negatively and therefore a loss. The adaptive organizational system alternates between using shocks, as chances for alleviation, and using reactions as opportunities to understand shocks. Activity without thought is only a reflex, which may be useful in the here and now but is meaningless for future consideration; thought without action is contemplation. Organizational resilience is defined by the dynamic conflict between taking practical action in the face of urgency and encouraging learning without a pressing necessity. The fundamental ability of a resilient

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[1] Wilson,G.A.(2018)'Constructive tensions'in resilience research:Critical reflections from a human geography perspective.Geographical Journal

[2] Venkatraman, N., & Ramanujam, V. (1986). Measurement of Business Performance in Strategy Research: A Comparison of Approaches. Academy of Management Review, 11(4), 801-814.

[3] Giustiniano, L., Cunha, M. P. E., & Clegg, S. (2016). The dark side of organizational improvisation: Lessons from the sinking of Costa Concordia. *Business Horizons*, *59*(2), 223–232. https://doi.org/10.1016/j.bushor.2015.11.007

[4] Barret,F.J.(2012)Yes to the Mess. Boston, MA: Harvard Business Scholl Press.;
Coutu, D.L(2002) How Resilience works. Harvard Business Review.

organization was identified as improvisation. The organization must first cultivate respect for a spontaneous activity to allow improvisation. The development and improvement of this talent are prerequisites for teams to act impromptu in the face of problems because improvisation is frequently viewed as hazardous. Organizations should delegate decision-making authority to groups. This ability to adapt enables employees to acquire, a competent functioning, i.e., a set of skills necessary to better cope with a similar event in the future. In this study, the resilient meaning will focus on the company's ability to respond to the various emergency and risk situations that arise, adjust the various situations and scenarios, and recompose the starting scenario concerning the railway sector. In this context, the concept of corporate resilience and improvisation is created. The corporation does not anticipate any unforeseen event, crisis, or danger; nonetheless, organizational resilience and business-level improvisation are used specifically during these stressful times for the train company. When the business is less prepared, it must give up its organizational starting point and improvise. This article's goal is to identify additional factors that enable managers to act positively.

1.2 Literature Review

Individual member resilience alone does not constitute collective resilience. A team may not be able to overcome misfortune based just on the individual resiliency of its members. Although each person may continue to thrive and even be resilient enough to help team members recover from disasters, this does not stop teams from failing and facing extinction. Due to this, slightly resilient individuals may increase their level of resilience while working as a part of an encouraging, successful, and tough team. [5]How do the actors make things work? They just react they improvise. Definition of improvisation and then explore contemporary preconditions about its influence and resilience. There are a considerable number of characteristics that set business improvisation apart from other modes of operation. Reducing the time gap between planning and carrying out original actions is undoubtedly beneficial; the closer the preparation and execution of behavior are to one another, the more probable it is that the action will be improvised. [6] Business improvisation is an unplanned, 'in-the-moment' phenomenon that aims to explain how managers solve atypical problems and/or generate wealth from unplanned possibilities. This mechanism is not based on an established routine and is neither predetermined nor defined. According to the principle of irremovability, managers act by making whole new choices and behaviors. Managers must remember the details from past projects from memory while drawing hasty choices. Organizational resilience involves a multidimensional process that includes preparation, response, and recovery from adverse events. According to Hollnagel et al. (2013), resilience is the ability to cope with complex and unexpected events by adapting and learning from them. It is not a static state, but a dynamic process that requires continuous learning and adaptation. Therefore, resilience is not just about bouncing back to the pre-disaster state but also about learning and improving from the experience to enhance the organization's ability to withstand future challenges. For instance, learned details from the past of a corporation in a different industry that may be used in the current emergency. The ability of improvisation integrates and constructively uses previously acquired patterns while drawing variety and originality from experience. [7]A strong memory enhances improvisation because it increases the capacity for improved decision-making and situational awareness. In essence, a company that survives during adverse and unplanned phases certainly develops more skills than other companies. It certainly increases its ability to cope with risks. Overcoming these adverse situations is possible thanks to 3 levels of aggregation: individual, team, and organization. Understanding how business improvisation and overcoming the risk of uncertainty works can be

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[55] Giustiniano, L., Clegg, S. R., Cunha, M. P. E., & Rego, A. (2018). *Elgar Introduction to Theories of Organizational Resilience*. Edward Elgar Publishing.

[6] Crossan M, Cunha J, Vera D, Cunha M. 2005. Time and organizational improvisation. Academy
Crossan M, Lane HW, White RE, Klus L. 1996. The improvising organization: where planning meets opportunity. Organizational Dynamics 24(4).

[7]*Learning how to restructure: Absorptive Capacity and improvisational ...* (n.d.). Retrieved February 22, 2023, from https://www.jstor.org/stable/pdf/20142043.pdf

used as a competitive advantage against other companies.[8]Work is increasingly organized in and around teams, which are groups of people within an organization that have a clearly defined membership and are accountable for attaining common goals. This emphasizes the need for team resilience. Teams have been shown to be advantageous to firms because they boost labor efficiency, flatten the management hierarchy, lower employee turnover, promote organizational learning, and enhance product creation. Furthermore, experimental studies have shown that teams perform better than individuals on simulated tasks requiring problem-solving, coordination, and control. Eventually, issues with role and interpersonal conflict as well as efficient coordination also occur in teams. A well-coordinated workplace is an advantage because it is certainly a good starting point for an effective resilient team. As just a consequence, many workers feel more stressed and anxious[9], and businesses are negatively impacted by decreased productivity and rising absenteeism. Since many workers collaborate in teams, these expectations may also interfere with certain team dynamics and effectiveness, leading to a narrowing of focus and viewpoint, inadequate information sharing and communication, and decreased collaboration and performance.[10]Employers are looking to resilience as a possible tool to boost the flexibility, performance, and well-being of their workforce because of the rising strain on individuals and teams. Companies look for a workplace that promotes optimal and sustained performance, or one that protects corporate production while upholding staff wellbeing. Building employee resilience has been shown to offer advantages in a variety of fields, including law enforcement, healthcare, and education. These include a rise in optimism and self-efficacy, an improvement in mental and subjective health, and a rise in work satisfaction. Building resilience has been shown to increase productivity and goal achievement when doing individual workplace research.[11]

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[8] Drazin R.Glynn,M.A and Kazanjian,R.K(1999)Multilevel Theorizing about creativity in organizations: A sensemaking perspective.Academy of Management Review 24 286-307
Hackman, J(2003) Learning more by crossing level: Evidence from airplanes, hospitals, and orchestras. Journal of Organizational Behavior 24 905-922.
[9] Sood, A., Prasad, K., Schroeder, D., & Varkey, P. (2011). Stress management and resilience training among Department of Medicine faculty: a pilot randomized clinical trial. Journal of General Internal Medicine.
[10] 23. Arnetz B, Nevedal DC, Lumley MA, Backman L, Lublin A. Trauma resilience training for police: psychophysiological and performance effects. J Police Criminal Psychol. 2009.
[11] A Measure of Team Resilience Developing the Resilience at Work Team Scale Kathryn McEwen, B Psych (Hons) and Carolyn M. Boyd, PhD 2017 American College of Occupational and Environmental Medicine

Resilience and its features

Paradoxically, individuals who lack resilience consciously and routinely make choices that set them up for failure. A dialectical framework describes organizational resilience as the result of a struggle between two types of resilience that are well-established in literature: Adaptive and Proactive, as opposed to responding. [12]The concept of resilience as a mechanism emphasizes the processes by which people and aggregative forms develop or sustain the resources (intellectual, psychological, physical, or interpersonal) required to effectively manage and learn from setbacks. [13]However, while resilience is a distinct concept, it has some traits in common with other well-known organizational processes. Depending on whether resilience is adaptive or proactive, these commonalities can be categorized. I model the resilience process as dialectical, with proactive action and adaptation constantly influencing one another in a way that may be both dynamic and productive. There are two contrasting approaches to overcoming obstacles: proactive resilience and adaptive resilience. The reaction devoid of future prediction, or adaptation devoid of proactive resilience, is known as "learning but forgetting." In the absence of adaptive resilience, proactive resilience is equivalent to the thoughtful contemplation of an ongoing reflective practice. Furthermore, a dialectical idea of resilience will enable us to comprehend how organizations respond to unforeseen and difficult circumstances.

Resilience affects both behavior and performance positively, making it one of the four positive psychological resources that make up an employee's emotional capital when considered at the micro level. [14]At the same time, it creates a distinctive combination of cognitive, behavioral, and environmental characteristics at the micro level that improves a company's capacity to comprehend its current position and create tailored answers that reflect that knowledge. Organizational resilience refers to an organization's ability to adapt and respond to unexpected disruptions effectively. This includes not only reacting to events but also preparing for them in advance. Resilience involves developing strategies and plans that can help an organization withstand various shocks and disturbances. In the context of the railway industry, organizational resilience is essential due to the numerous risks and uncertainties associated with rail operations. For example, railway organizations must be prepared to handle natural disasters such as floods, earthquakes, and storms. They must also be ready to respond to human errors, such as derailments and collisions. Several factors contribute to organizational resilience in the railway industry. These include:

1. Redundancy: Railway organizations must have backup systems and processes in place to ensure continuity of operations in case of failures or disruptions. For example, having multiple routes and lines that can be used in case of disruptions or delays.

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[12] Luthar,S.S,Cicchetti,D. and Becker, B.(2000). The construct of resilience: A critical evaluation and guidelines for the future work.Child Development, 7,543-562-;
Diamond,J(2005).Collapse: How Societies Choose to Fail or to Survive. London: Penguin.

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[14] Luthans,F.and Youseff,C.(2004). Human, social, and now positive psychological capital management: Investing in people for competitive advantage. Organizational Dynamics.;
Luthans,F.and Youseff,CM.(2007).Emerging positive organizational behavior. Journal of Management.;
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2. Flexibility: Railway organizations must be flexible and adaptable in their operations. They must be able to adjust quickly to changing circumstances and respond to unexpected events.

3. Communication: Effective communication is crucial for organizational resilience. Railway organizations must have clear communication channels in place to ensure that information is shared quickly and efficiently across the organization.

4. Training and Education: Railway organizations must invest in training and education programs to ensure that their employees are prepared to handle unexpected events. This includes training on emergency response procedures and safety protocols.

The same as I briefly said in the previous rules, two conceptual paradigms are profoundly critical of one another and describe a process of ongoing dialectics:

- *Adaptive* resilience happens quickly and on instinct. Occurs when an incident forces an organization to operate outside of its regular range of stable action repertoires. The capacity to bounce back under pressure is crucial when the system is disturbed because it enables the organization to react adaptably.[15]

- *Proactive* resilience involves periodically challenging the system and the presumptions that underpin it, encouraging reflective practice, respecting slow thinking, and encouraging the practice of viewing errors as opportunities to strengthen the system. [16]

  It provides the company with the learning opportunities provided by failure experiences. Proactive resilience is about a dual cycle of learning that causes the system to reflect on itself through reflective practice and learn from the experience.[17]

Organizational resilience is critical for several reasons. Firstly, disruptions in the business environment can have a significant impact on a company's operations, finances, and reputation. Without resilience, a company may struggle to recover from these disruptions, leading to significant losses or even bankruptcy. Secondly, resilience is important for maintaining stakeholder confidence. Investors, customers, and employees all want to know that a company can weather the storms of disruption and emerge stronger on the other side. Finally, resilience is critical for long-term sustainability. [18] In this situation, organizational resilience may involve developing a crisis management plan to deal with the current incident, communicating openly and frequently with the public and other interested parties, putting additional security measures in place to prevent future

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[15] Giustiniano, L., Clegg, S. R., Cunha, M. P. E., & Rego, A. (2018). *Elgar Introduction to Theories of Organizational Resilience*. Edward Elgar Publishing.

[16] Kahneman, D.(2011). Thinking, Fast and Slow. New York:Maccmillam.;
Hollnagel,E.(2012).When things go wrong :Failures as the flip side of success.In Hoffman,D.A. and Frese, M. (eds), Errors in Organizations. New York: Routledge.

[17] Birkinshaw,J. And Haas, M.(201). Increase your return on failure.Harvard Business Review. ;
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[18]BSI. (2018). Organizational Resilience: A summary of key principles. Retrieved from https://www.bsigroup.com/globalassets/documents/white-papers/organizational-resilience/organizational-resilience-white-paper.pdf;
CIPD. (2019). Building Resilience. Retrieved from https://www.cipd.co.uk/knowledge/fundamentals/relations/engagement/building-resilience-factsheet

incidents, and implementing programs to enhance security and service quality. Organizational resilience may also help an organization learn from incidents, for instance by conducting in-depth investigations to understand the causes of the occurrence and applying learned lessons to avoid similar situations in the future. In this way, the organization may demonstrate its commitment to service quality and security while regaining the public's trust in its reputation. For instance, effective crisis management might reduce financial losses related to the occurrence, such as costs for repairing damage caused by the incident, compensation for injuries sustained by pedestrians, fines for violating laws, etc. In addition, a resilient organization has a higher likelihood than a less resilient organization of recovering more quickly from the negative effects of the disaster and returning to normal operations sooner. This may help lessen the impact of the incident's long-term effects on the brand's reputation and financial results. Resilient companies are better able to adapt to changing market conditions and stay ahead of the competition. Developing organizational resilience requires a holistic approach that involves several key components.

Table 1. *Key components for the Holistic approach*

Risk Assessment	A thorough understanding of the risks that a company faces are essential for developing resilience. This involves identifying potential disruptions, assessing their likelihood and impact, and developing contingency plans to mitigate them.
Business Continuity Planning	Business continuity planning involves developing processes and procedures to ensure that critical business functions can continue in the event of a disruption. This includes identifying key personnel and resources, establishing backup systems, and developing communication protocols.
Crisis Management	Crisis management involves responding to a disruption in real-time, to minimize its impact. This includes activating contingency plans, communicating with stakeholders, and managing the recovery process.
Organizational Culture	Organizational culture plays a critical role in resilience. A culture of resilience values proactive risk management, continuous improvement, and agile decision-making.
Technology	Technology can play a significant role in building resilience. This includes using data analytics to identify potential risks, developing digital platforms for communication and collaboration, and leveraging automation to streamline processes.

Source:
Reeves, M. (2021, February 1). *A Guide to Building a More Resilient Business*. Harvard Business Review.
https://hbr.org/2020/07/a-guide-to-building-a-more-resilient-business
PricewaterhouseCoopers (PwC). Weathering the Perfect Storm: How to Build Resilience in the Face of Emerging Risks.
https://www.pwc.com/sg/en/risk-assurance/assets/ra-sid-weather-perfect-storm.pdf

Interaction is essential for success, and human capital is the investment you should focus on most. Resilient teams are frequently the most cohesive, productive, and effective teams. As resilience is now just a source of good human characteristics, it requires a wide range of people, each of whom must possess a particular virtue, to be fully formed. Also, for a pleasant interaction with the organization, the dependents must feel completely integrated and in keeping with the shared and supported values of that entity. The framework has been condensed via principles like "if you can assist someone you must" and the idea of "if you can," the notion that employees must keep in touch, and the significance of building binding components without which learnability would just be a phrase on a piece of paper. So, in this instance, a connection of reciprocal psychological security is established, and resilience is mutually supported.[19] As risk is a factor in resilience, those who knowingly expose themselves to the prospect of failure need to feel secure in their minds. Leaders play a crucial role in this because they must help the group to feel psychologically safe. Studies on social resilience have shown that to achieve this, it is crucial to exhibit gratitude, human touch, reciprocal help, tolerance for failure, and sharing and helping others. [20]These actions are essential to creating a secure and wholesome atmosphere. Without a calm environment, the dependents would not feel in any way qualified to express their mistakes. They can encourage leaders to act more like improvement-focused coaches than like control-focused managers. Also, they can create a formal method to aid in learning. On an organizational level, it is necessary to pay attention to traits like collective resilience, or the capacity to handle trauma or stress in a way that benefits the organization's well-being, which will then translate into the well-being of the individual. Nevertheless, increasing organizational resilience will mean making the company's workforce more resilient, strong, and adaptable in the face of uncertain business conditions and market pressures. This will be accomplished by giving managers greater responsibility and by assigning them more responsibility. So, sustaining organizational resilience requires the support of the entire business: it takes top-down leadership from the management team and bottom-up commitment from employees through open communication and a common purpose. Bottom-up commitment from workers and top-down guidance from the management team is achieved via open communication and a common desire among all organization members. Hierarchies undoubtedly provide numerous benefits, like improved task distribution, less stress, and weariness, but in instances like these, they are slower to change process strategy. To improve exploratory skills, self-management groups may be developed. Groups might be assigned particularly to investigate the organization's boundaries and define new knowledge. Project teams might be deployed to seek learning opportunities that are challenging to handle in a hierarchical style and context. People are thought to gain a competitive edge through organizational structure rather than by giving them specific tasks to do. A group's ability to improvise is essential because it enables the organization to employ the knowledge and abilities of more individuals in the group to respond to an

[19] Lyubomirsky, S.S Sheldon, K.M. and Schkade, D. (2005). Pursuing happiness: The architecture of sustainable change. Review of General Psycology.

[20] Grant,A.M.,Nurmohamed , S., Ashford, S.J. and Dekas , K.(2011). The performance implications of ambivalent initiative : The interplay of autonomous and controlled motivations.Organizational Behavior and Human Decision Processes.

unexpected situation without the advantage of preparation. [21]The idea of sensemaking offers several intriguing questions because resilient watchfulness and readiness to respond stand out as characteristics in which parts of improvisation seem to be implicated. Initially, both abilities and knowledge are necessary for being alert and capable of handling the unexpected. Secondarily, the power to foresee and respond to unanticipated circumstances places the capacity for spontaneity as a kind of engine; improvisation becomes a power that permits this adaptable and creative response. If sensemaking is done retrospectively as part of this improvisation, there is a chance that past experiences may offer inappropriate answers to the current issues.[22] The organization gains the ability to move quickly and to prioritize openness and co-satisfaction over standard operating procedures by developing enabling structures and cultures of innovation. Following a railroad catastrophe, the railroad companies immediately activated an emergency response plan to manage the situation. The emergency plan calls for the activation of a crisis management team, whose job it is to coordinate the company's response to the catastrophe. The crisis management team is made up of representatives from many company departments, such as security, maintenance, human resources, public relations, pedestrian assistance, and other departments as well. The crisis management team is responsible for organizing emergency operations, providing timely and accurate information about the incident's causes, and managing communications with appropriate authorities, the media, and bystanders. The security team's focus is on determining the incident's root causes and pinpointing the preventative measures to take. The maintenance crew is responsible for estimating the damage caused by the incident and organizing the activities of replacement and restoration of the affected infrastructure and vehicles. The staff is responsible for managing activities that aid travelers, such as logistical assistance, reservations, and other services. The public relations team is responsible for managing communication with the media and the public by providing timely, accurate information on the incident, its causes, and the company's internal actions to prevent a repeat. The passenger assistance team is responsible for providing logistical help to passengers involved in the event, such as assistance with alternative transportation, lodging arrangements, the provision of pastries, and more. In general, each team works closely with the other teams to coordinate emergency response efforts and manage the situation as effectively as possible. The primary goals of the company are to ensure the safety of patrons and employees, reduce damage caused by accidents, and restart the rail service as quickly as possible.[23]

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[23] "Railway Safety Principles and Guidance" dell'Agenzia dell'Unione Europea per le Ferrovie;
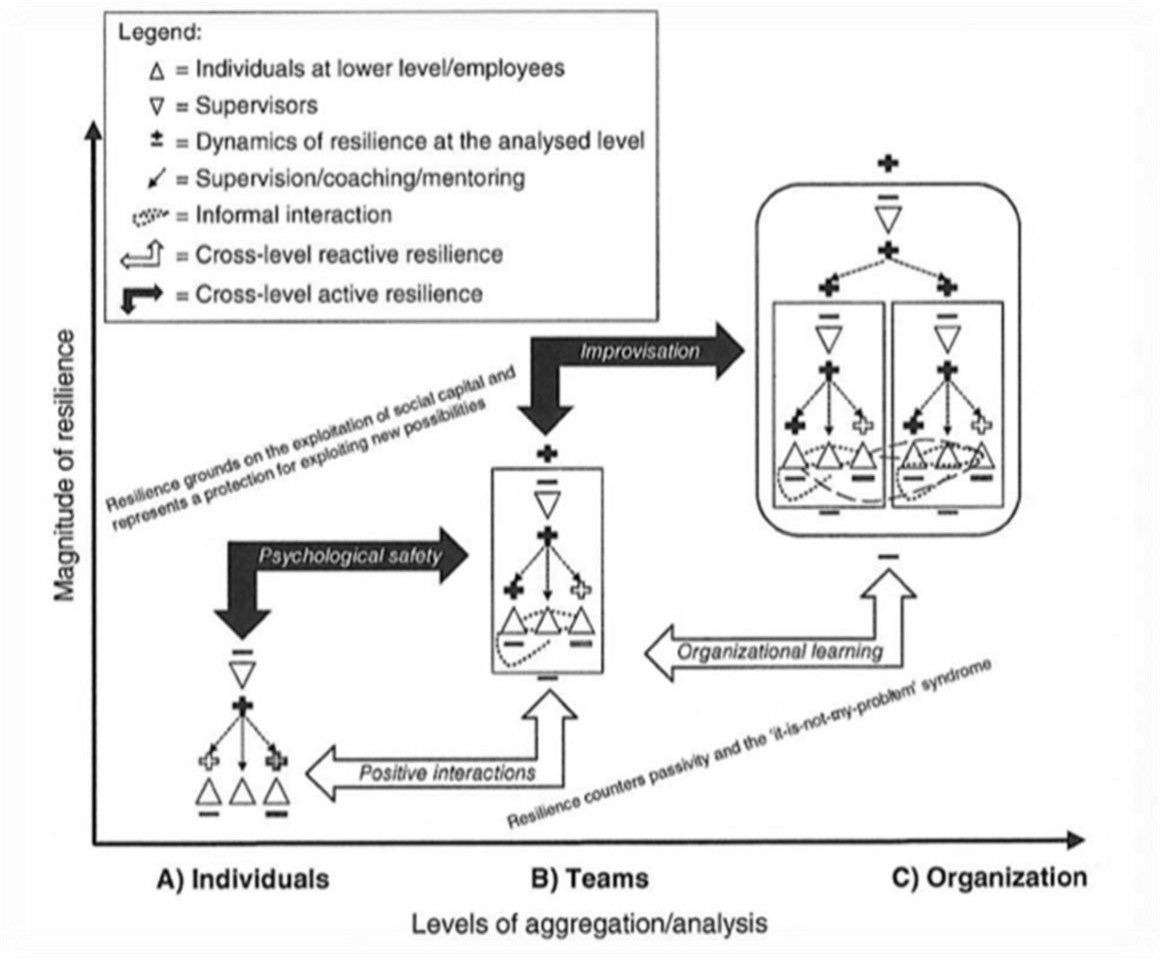
Figure 1. *Levels of aggregation/analysis*

Font: Giustiniano, L., Clegg, S. R., Cunha, M. P. E., & Rego, A. (2018). *Elgar Introduction to Theories of Organizational Resilience*. Edward Elgar Publishing.

Improvisation and its features

As I've explained in the preceding paragraphs, improvisation includes Scholars occasionally emphasizing various features of improvisation, but the formal definition of this process at its most basic level includes three conceptual components. Extemporaneity, the production of some degree of original activity, novelty, and the deliberateness of the design that is formed during its enactment is a few of these (intentionality). [24]Also, according to this definition, improvisation is a specific category of unplanned behavior that avoids random change since it incorporates a new conscious design. Hence, not all improvised behavior is unintentional. Working with an improvisational reference, which may be an earlier form of an action pattern or earlier plan, is a common part of the process. According to the definition, improvisation is a particular kind of inventiveness. Yet not all innovation activity is improvised because the substance of innovation can be scheduled in advance.[25]It's possible that improvisation can make up for failure prediction such that focus, or a reaction secures success rather than failure. The failure of the adaption process might also result from improvisation. The reductionist approach may be used to resolve this issue.

- *Improvisation in Adaptation* necessitates the existence of a court document, encouragement of originality and inventiveness, and resistance to simplification. Individuals need to be socialized to reduce their presumptions, pay close attention more, and disregard less.**[26]**

- *Improvisation in Attention* suggests having a wide range of signal interpretation capabilities and increased input sensitivity. Moreover, it suggests that individuals who are asked to improvise are not "technologically locked in" to what Hollnagel and Woods refer to as a hermeneutic connection, in which technology imposes a predetermined meaning.

- *Improvisation in Response* suggests having the capacity to "think in motion," or to develop new paradigms of expectancy and focus quickly.**[27]**

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[24]Cunha, M.P., Cunha, J.V. & Kamoche, K. (1999). Organizational improvisation: What, when, how and why. *International Journal of Management Reviews*;

Miner, A., Bassoff, P. & Moorman, C. (2001). Organizational improvisation and learning: A field study. *Administrative Science Quarterly*;

[25] Moorman, C., & Miner, A. (1998b). Organizational improvisation and organizational memory. *Academy of Management Review;*

[26] Weick, K.E. and K. M. Sutcliffe (2007). Managing the Unexpected. Resilient Performance in an Age of Uncertainty. 2nd Ed. Jossey Bass Wiley;

[27] T Grotan, T.O., Storseth, F., Ro, M.H., & Skjerve, A.B. (2008). Resilience, Adaptation and Improvisation - Increasing Resilience by Organising for Successful Improvisation. Presentazione al 3rd Symposium on Resilience Engineering, Antibes, Juan-Les-Pins.

Table 2. *'The Bright and Dark side of Organizational Improvisation'*

Organizational characteristics	The bright side (Potential advantages)	The dark side (Potential risks)
Standards formalization	Modifying the guideline to uphold company values and/or achieve organizational goals	Organizational deviation from corporate goals and values
Multiplicity of standards	application of the norm that is best appropriate for the current situation	selecting the standard(s) that are/are best in line with non-organizational goals
Centralization/Decentralization of decision-making (**i.e.,** emergency normal situation)	Exercise discretion in unexpected situations	independence whether engaging in arbitrage or balancing many criteria

Font: Giustiniano, L., Cunha, M. P. E., & Clegg, S. (2016). The dark side of organizational improvisation: Lessons from the sinking of Costa Concordia. *Business Horizons*, *59*(2), 223–232. https://doi.org/10.1016/j.bushor.2015.11.007

Table 3. *Corporate Improvisation Structure*

Corporate Improvisation Dimensions	Definitions
Extemporaneity	a confluence of efficiency and aesthetics.
Novelty	the execution of some sort of inventive activity.
Intentionality	the development's aim at the time of its emission.
Improvisational referent	a previous iteration of practice or goal, or an internal or external benchmark.

Corporate Improvisation during Covid-19

The COVID-19 pandemic has created significant challenges for organizations across the globe. The pandemic has disrupted supply chains, decreased consumer demand, and forced organizations to adapt to remote work and new health and safety guidelines. In this chapter, we will explore how organizations can build resilience during the pandemic, drawing on relevant research and case studies. The railway companies have faced significant challenges due to the pandemic, including decreased demand for transportation services, government-imposed lockdowns, and supply chain disruptions. However, companies have demonstrated remarkable organizational resilience during the crisis, which has helped them to maintain operations and serve their customers despite the challenges. The firms recognized the importance of maintaining customer service during the pandemic, even with decreased demand for transportation services. To achieve this, they implemented several measures to ensure the safety and comfort of its customers, including:

- Regular cleaning and disinfection of trains and stations
- Installation of hand sanitizing dispensers in trains and stations
- Mandatory use of masks by all passengers and staff
- Social distancing measures on trains and in stations
- Flexibility in ticket cancellations and refunds

These measures not only ensured the safety of customers but also helped to maintain customer confidence in services during the pandemic.[28] In addition, many railway companies adopted flexible working policies and encouraged remote working to reduce staff presence at the workplace. In this way, they reduced the risk of infection among staff and ensured the safety of workers who were still working on the railway lines. In some countries, railway companies have also collaborated with health authorities and other organizations to help fight the pandemic. For example, some companies turned their trains into temporary hospitals or distribution centers for medical equipment.[29]

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[29] "How the railway sector is responding to Covid-19", Railway Gazette International;

1.3 Research Question

In the previous paragraphs, on one hand, I defined resilience as an organization's capacity to anticipate, and on the other hand, Improvisation has been defined as the capacity to adjust to environmental change continuously when challenges occur, without planning and with few resources[30]. Getting ready for, and promptly responding to an unexpected change to survive and surpass it's not just seen as risk mitigation; it's also seen as the success of business reality. Organizational processes that are focused on environmental change forecasting are essential for assisting firms in responding to environmental shocks. The organization's resilience determines the evolution of an organization's success and the success of its entrepreneurs who gain knowledge, skills, and abilities they may use in the future by relying on their resources. The goal of this report is to address the following question.

RQ1*:" How does organizational asset change in an emergency situation? And how does the company manage the resiliency phase?"*

Furthermore, the second part of this article is to analyze what transpires following a railway accident, focusing on perceived external prestige. At the legal level, the company could be subject to investigations and controls by competent authorities. Legal action could also be taken by passengers or their families to obtain compensation for physical or material damage suffered during the accident. On an economic level, the accident could have a significant impact on the company's financial results. It may be necessary to invest in the repair of infrastructure and the purchase of new trains or spare parts. In addition, the company's image could be damaged, with a possible drop in passenger numbers and turnover. To minimize the negative effects of the accident, the firm should take measures to improve the safety and quality of its services. It may be necessary to increase the frequency of maintenance on trains and infrastructure, adopt new technologies for accident prevention and improve staff training. In general, after a train accident, the company faces several challenges to restore passenger and investor confidence and ensure the safety of its services. In addition, after a train accident, the firm should also communicate in a transparent and timely manner with passengers and the public. This could involve issuing press releases, organizing press conferences, disseminating information on social media, and opening dedicated phone lines to provide updates on the investigation and the situation of passengers involved in the accident. The enterprise should also assess whether changes in its safety management system are needed, such as reviewing maintenance procedures or strengthening staff training. It may also need to review its train and infrastructure monitoring system to detect possible problems before accidents occur. Finally, the company may also need to collaborate with other railway companies and authorities to share information and best practices on railway safety. This could involve participating in working groups or discussion forums, organizing meetings, and sharing safety reports. In summary, after a

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[30] Miner, A.S., Bassoff, P. and Moorman, C. (2001). Organizational improvisation and learning: A field study. Administrative Science Quarterly.

railway accident, the firm must take several measures to manage the consequences of the accident, restore passenger and investor confidence and ensure the safety of its services. This requires constant efforts by the company to improve the safety and quality of its services and to communicate transparently with the public. Therefore, the second question to which answers are sought is:

RQ2*:" How does the firm's external perception change?"*

Chapter 2

2.1 Methodology

Research strategy

The explanatory technique offers a greater knowledge of how the business manages changes, issues, and how managers lead the team to productive work. The relationship between business resilience and the impact of management behavior on employee performance is also discussed. In-depth interviews with the Italian railway firm Trenitalia employees, including those at various levels within the organization, served as the primary methodological tool. This was done to not only complete the study's criteria but also to establish a direct line of communication with the participants. The variety of roles played by the respondents strengthens the validity of the study. The author decided to move on with in-depth research by conducting interviews with two macro-companies Italo and Trenitalia and a third that is part of the subsidiaries of Ferrovie dello Stato, Mercitalia. The first two businesses carry people, therefore the client in each case is the traveler; however, Mercitalia transports things, so the customer will also be the one to receive the commodities.

This decision was taken to highlight how the scenario alters depending on whether the train is transporting people or commodities and to take a bigger and more complicated picture.

Sampling

I based the research on the railway industry, as there is limited information available on the resilient and improvisational strategies of these companies. Since this is a relatively under-researched sector, I decided to devote myself to it now. However, it is an area with cutting-edge perspectives and is increasingly developing in terms of studies on the prevention of such events. Various incentives, initiatives, and certifications encourage the rail industry to become more risk-averse and, it was discovered during the study, has great growth potential. I learned many new rules and regulations of this industry because of the research, for example, how much attention is paid to innovation in the study. As a methodological approach for the research, in-depth interviews were used with workers from two separate organizations performing different roles. The interviews were conducted to obtain reliable and effective results. The variability of the sample made it easier to understand the influence of the methods used at different levels of the organization. This also avoided ending up interviewing people who had comparable tasks and could have provided similar arguments and examples. Furthermore, three companies were purposely chosen, Italo, Trenitalia, and Mercitalia. The three companies are described in detail on the following pages. The study focused on these companies, chosen because they are the best known.

Recruitment

No exact selection criteria were essential for the research. The interviewees were identified and reached via email, LinkedIn, or telephone numbers. Some railway firms were approached. I sought to contact additional company employees via LinkedIn and e-mail but received no response. Consequently, it was decided to restrict the field to the employees who had proven themselves to be available from the three organizations (Italo, Mercitalia, and Trenitalia). Consequently, I managed to contact employees by phone, and due to them, I was able to get in touch with additional workers. As a result, I was able to schedule appointments and get six interviews. Even though in the early stages of the project, a criterion for selecting candidates based on their availability (convenience coaching) was used, I decided to use a targeted coaching method during the project's development. Because I was certain that, to obtain the most accurate and informative data on the various approaches to resilience and improvement in Italy, Trenitalia, and Mercitalia, I would have needed to interview the same number of people from each of the three sections. It was not necessary to interview specific employees for the study because the participants had a range of responsibilities. This choice was chosen to have a deeper comprehension of the various business divisions. The jobs held were management or executive roles. The selection criteria used were basically three to bring forth the desired distinct perspectives. First, the company of affiliation - either the parent company Trenitalia or the secondary Mercitalia and the competitor Italo. Second, the duration of working experience (relatively short); I tested at people who had been working in their respective companies for 4 years and those who had been working there for more than 10 years. This technique was intended to guarantee that all interviewers were aware of the firm's structures and recent developments throughout the years. Finally, a combination of job titles and levels of responsibility allowed me to categorize personnel into two positions: operational room and client assistant. The choice of distinct work duties was selected to investigate how the unexpected affected the varied positions inhabited and how each function connected with the others. In this way, I sought to obtain information not only from those who somehow activate at the moment when the unexpected happens but also from those who activate at a secondary moment and interface directly with the customer. At the end of the recruitment process, I then reached a heterogeneous and targeted sample of 7 participants-two from Italo, two from Trenitalia, and three from Mercitalia, both men and women-all meeting the predefined requirements., and who voluntarily answered my questions with good degree of commitment. (See Table 3 for details).

2.2 Company Description

Italo-Nuovo Trasporto Viaggiatori

Italo is a private Italian railway company that has been operating since 2012. Founded by NTV (Nuovo Trasporto Viaggiatori), it was the first private company to compete with the state-owned Trenitalia for high-speed rail service in Italy. From an economic point of view, Italo is a relatively new company with a turnover of around 500 million euros in 2019. The company's revenues mainly come from the provision of high-speed passenger rail transport services in Italy. The company is known for offering high-quality, comfortable, and innovative services to its passengers. Italo trains are equipped with free Wi-Fi, power outlets for charging electronic devices, spacious and reclining leather seats, and ample luggage space. Italo's organizational structure includes a hierarchical management structure that is responsible for defining the company's strategy and development policies. The management of railway services is entrusted to specialized divisions that coordinate and supervise the production and commercialization activities of transport services. Italo also has a support structure that includes various company functions, such as finance, logistics, personnel management, and IT, which support the operational business. In terms of innovation, Italo has made significant investments in digital technologies to improve its customer experiences, such as online booking systems, mobile applications, and onboard entertainment. In addition, the company has a strong focus on sustainability and has implemented a range of measures to reduce its environmental impacts, such as the use of renewable energy sources and the implementation of eco-friendly technologies. Overall, Italo is a dynamic and innovative company in the Italian transport sector, with a hierarchical organizational structure and a strong focus on sustainability and customer experience. Additionally, Italo offers a wide range of travel options, including flexible tickets, subscriptions, and travel packages that include discounts on hotels, restaurants, and other tourist activities. Italo serves many destinations in Italy, including Rome, Milan, Naples, Venice, Florence, Turin, and Bologna, and has an international network of connections that extends to France and Switzerland. Overall, Italo is recognized as a modern and innovative company in the railway transport industry, with a strong commitment to technological innovation and customer satisfaction.

Trenitalia S.p.A

Trenitalia is the main Italian railway company that has been operating in the public rail transport sector since 2000 when it was created as a subsidiary of Ferrovie dello Stato Italiane, the public company that controls the national railway system. From an economic point of view, Trenitalia is a company with a turnover of about 5 billion euros in 2020, which is mainly divided into three areas of activity: regional transport, long-distance transport, and freight transport. Trenitalia's organization includes a hierarchical structure that goes from the top management to operational employees. The general management oversees defining the company's strategy and development policies. The management of railway services is entrusted to specialized divisions that coordinate and supervise the production and commercialization activities of transport services. In terms of passenger services, Trenitalia offers a range of options to meet different travel needs, such as high-speed trains,

regional trains, and overnight sleeper trains. Trenitalia's high-speed trains, called Frecciarossa, Frecciargento, and Frecciabianca, provide fast connections between major Italian cities, while regional trains serve smaller towns and villages. The firm is committed to sustainability and innovation, investing in new technologies and solutions to reduce environmental impact and improve customer experience. Trenitalia has also implemented health and safety measures to ensure passenger and employee safety during the COVID-19 pandemic. The company also has a support structure that includes various company functions, such as finance, logistics, personnel management, and IT, which support the operational business. In addition, the company relies on a vast network of suppliers and strategic partners, such as train manufacturers and maintenance companies, to ensure the continuity and quality of rail transport services. In summary, Trenitalia is a financially solid company with a hierarchical organizational structure and a vast network of specialized divisions and strategic partners, which allows it to guarantee a high-quality public rail transport service.

Mercitalia Rail

The Mercitalia Group's (Gruppo FS Italiane) subsidiary that specializes in rail traction services is known as Mercitalia Rail. It is one of the major operators in Europe and the foremost freight and logistics-focused railroad in Italy. Mercitalia Rail, like the other operating companies in the holding Ferrovie della Stato Italiane, is a public-law entity. It was founded in the month of February 2017, when Trenitalia's Cargo branch was spun off. With 2000 trains each week, the company ensures connections between major ports, interports, terminals, and industrial networks across the country and on international routes, where it operates directly or in collaboration with other operators. Using traditional and combination transport methods ensures the everyday mobility of substantial amounts of commodities both inside and outside of Italy. Around 13,000 rail carriages as well as more than 340 electric and 130 diesel line locomotives are in use. With this special fleet, which is undergoing modernization, it can operate about 2,000 trains per week or 100,000 trains annually. On November 7, 2018, debuted the new Mercitalia Fast service, the world's first high-speed train service exclusively to passengers.

Table 4.

Interviewees	Gender	Years of experience	Job Role
A1	F	12	Direction of Operations Room/Exercise Structure Traffic and Passengers Management Manager
A2	M	7	Customer Service Manager
B1	M	8	Direction of Industrial Planning, Operations management coordination and control manager
B2	M	7	Direction of Industrial Planning, Operations management coordination and control manager
C1	F	17	Responsible for customer service and after-sales support
C2	M	4	Operations Room Manager
C3	M	26	Security Manager in the Operations Room

2.3 Data Collection Techniques and Interview Protocol

I conducted seven interviews with employees from different layers of the organizational structure, all interviews were performed remotely by video call at the interviewees' convenience in Italian and subsequently translated into English. The interviews lasted between 25 and 45 minutes, with an average of 30 minutes, for a total interview time of about 3.40 hours. I ceased collecting data for this academic study when data saturation was attained. The respondents were questioned about the procedures in the case of unanticipated train accidents and breakdowns, the effect on the regular flow of business, their relationships with other coworkers, and their perceptions of their external prestige. I used a planned interview process. Prior to conducting the actual interviews on the scheduled date, all interviewees were mailed both the informed consent (appendix 2), to obtain their agreement to record their answers and avoid any breach of confidentiality clauses about their identity when transcribing, and the interview topic guide (appendix 3), to familiarize them with the research team and the subjects we would later discuss. The interview was broken into four macro-topics, each of which had between five and six questions. Based on the major topics found in the literature research, Appendix 3 emphasizes the thematic guide for the interviews with the participants.

I used two main topic guides, one to go into more detail in answering the first research question and the second to go into answering the second research question. I also adapted the guides according to the companies I interviewed. For Trenitalia and Italo, the topic guides were the same, while for Mercitalia, the questions were readjusted where passengers were concerned. Furthermore, I asked the employees whether they thought it was beneficial to attach papers and presentations from within the organization to advance my investigation. The research was voluntary, and participants had the right to revoke their involvement at any moment, as was mentioned upfront. Second, it was noted that it was possible to decline to respond. Lastly, participants had the chance to learn about the study's purpose and ask any questions they had. In addition, I was careful to explain that taking part in the study required analyzing the responses and had no immediate advantages for the participant. In addition, I asked permission to record the interview. All of this was done to guarantee an ethical approach, along with making sure the information supplied was kept secret. Throughout the whole process of authoring this study, I paid close attention to ensuring anonymity, confidentiality, and pledges made with informed permission, as well as removing any potential influence on contributors.

2.4 Data analysis

The data analysis was divided into three parts, each of which was completed using the NVivo data quality analysis software. The data collected during the interview were recorded, transcribed, tested, and coded using NVivo (version R1), a software for qualitative data analysis that assisted me in data coding. My approach to coding has evolved primarily in three stages: first-order constraints (open coding) which I have used in interviews, second-order constraints (axial coding), and third-order constraints (selective coding). The intensive data investigation begins with the first-order code of all interviews. To be extremely precise and selective, the open code is based on 125 codes, which have ensured the code's accuracy and consistency. In the event of a conflict, the additions are frequently considered. Following that, I proceeded to combine the first-order codes into intermediate codes, or axial codes, which gathered the most frequently used codes per topic, with the goal of aggregating data around larger conceptual themes to identify patterns and develop connections between the various responses of those polled and theoretical goals, or in determining how the organizational assets of railroad companies change because of one imputation. Finally, second-order codes were combined to generate selective codes, allowing the creation of a complete conceptual quadrilateral. There will be several attempts to reach the final structure depicted in the schematization map above. Some codes have been added because of minor differences in some parts of the name, number, and erratic features in the punctuation or position of the words. Other codes, on the other hand, have been removed and are no longer considered relevant for research. To comprehend the organization and communication of the company, the external perception of customers, and the image of the companies, I examined 15 axial codes that had a causal relationship with the central phenomena, i.e., the selective codes. As a result, using this procedure, we were able to develop the main theory of our research by creating 125first-order codes and using observations that reflected the experience of those interviewed. These first-order codes were combined into fifteen second-order themes, which were then subdivided into three categories:

The codes vary greatly in terms of the number of tabs in which they are reported as well as the number of references: some have only one reference while others have up to 5. This is primarily due to the way I structured the questions to elicit information.

Aside from the codes I had anticipated, such as those relating to emergency procedures, accountability, brand image, organizational agility, and so on, there are several other significant issues to which I have dedicated a single question, but which have contaminated nearly all the responses. In particular, I refer to codes related to the accuracy of responses given to customers, codes related to the experience of the machine, and codes that are directly related to this, such as customer base, customer reports, and communication between the company and its customers. The codes are then grouped into macro-areas, considering not just the similarities in name and content, but also the context in which they are used. In the first instance, I achieved a total of 13 reorganizations, which were reduced to 11 after a subsequent revision (Phase 2, Table 6). This reduction occurred as a result of an amalgamation operation after an additional control. Indeed, among the 45 initial

axial codes, I believe that several of them can be combined without losing information or significance. The final stage of data analysis was segregation, in which the 11 macro areas identified in the previous stage were aggregated into three topics of interest (Phase 3, Table 6). The reorganization has resulted from what refers to the various emergent scenarios, the figures involved in case of danger, the role of business culture, and the importance of procedures and rules. In detail, the three areas identified during the selective codification phase are: "Emergency procedures"; "Different unforeseen events" and "Business culture".

The first contains all the coded information related to the various emergency procedures, such as how divisions collaborate with one another, who the figures are who intervene if the emergency needs to be verified, and finally, the procedures and rules to keep in mind in the event of an unexpected event. The second includes all the coded information related to the many emergency scenarios, the various types of events that can be observed, how to monitor and control dangerous situations, and how the situation changes if passengers are transported instead.

 Finally, the third group contains workers' reactions to structural changes, such as agility or circumstances, the importance of having a streamlined organization, and how to change the brand's image after a potentially hazardous occurrence.

During the second and third coding rounds, I closely explored the parallels, differences, and relationships between the open codes. All of this helped me to examine emerging global themes collectively to gain clear knowledge free of conflicts and preconceptions. Throughout the coding process, every effort was taken to ensure internal consistency: I endeavored to categorize the respondents' primary statements while including the various perceived moods without misrepresenting their significance.

n	Name	Files	Ref.
1	Emergency procedures	1	6
2	Different unforeseen events	1	7
3	Business culture	1	6
4	The panels share the message	1	1
5	Divisions involved in emergency	1	2
6	Procedures and rulers	1	1
7	Planning and monitoring	1	1
8	Focus on quality and timing	1	2
9	Rule of Pianification Direction	1	1
10	Role of Operations Room	1	1
11	RFI and Industrial Plannification	1	2
12	Difference between Industrial Planning and Operations Room	1	3
13	Industrial Plannification and customer communication	1	1
14	Information communication	1	2
15	Internal and External communication	1	2
16	Accuracy in information	1	6
17	ALSTOM Role	1	1
18	ALSTOM as a reference for the instructor	1	1
19	Role of the Operations Room	1	2
20	Industrial Plannification trasversal with other areas	1	2
21	Gestore delle Infrastrutture	1	2
22	Firm components	1	1
23	Internal collaboration with different divisions	1	2
24	Committee with directions of all dimensions	1	2
25	Figure of technical and training manager, responsible for instructors	1	1
26	Driver preparation	1	2
27	Instructrs as a reference for the driver	1	2
28	GDA manual as a reference for the driver	1	3
29	Master behaves on board	1	3
30	Emergency Simulations	1	3
31	Training	1	2
32	Depannage driving	1	3
33	Driver behaviour	1	3
34	Driver behaves in event of sickness or stoppage	1	1
35	Driver and his vehicle	1	1
36	Transport conditions	1	2
37	Customer service	1	1
38	Relationship with clients	1	1
39	External Relation communicates with clients	1	3
40	Customer report	1	3
41	Customer base	1	3
42	Contact by telephone or email	1	3
43	Alternative solutions	1	2
44	Call the call center	1	1
45	Ask for compensation	1	1
46	Communication with clients	1	4
47	Customers notified regard the abnormality	1	1
48	Communication skills	1	1
49	Code for communicate	1	1
50	24-hour Operations Room	1	4
51	Procedures and Rules	1	1
52	Regularity	1	3
53	Priority managing railroad	1	5
54	Define regularity	1	5
55	Punctuality	1	3
56	National Railway Agent	1	1
57	Worst cases	1	1
58	Technologies use for passengers' safety	1	1
59	SGS does the risk analysis	1	1
60	Periodic meeting	1	1
61	Define punctuality	1	1
62	Transfer to another train	1	3
63	Stoppage on the line	1	1
64	Stop event	1	1
65	Self-substitution part	1	1
66	Routable that stops in line	1	1
67	Limitation to liability	1	1
68	No passengers on board	1	1
69	Ruler with the provider	1	1
70	International Convention of Goods	1	1
71	Procedures to prevent	1	1
72	Precautions of goods	1	1
73	Position of sales	1	1
74	Forms of railway accidents	1	1
75	Ways to restart the vehicle	1	1
76	Time of restoring	1	1
77	Strike	1	2
78	Report for monitoring	1	2
79	Travel experience	1	1
80	SCMT system	1	1
81	Index that measures experiences	1	2
82	Different cases	1	2
83	Cases when the equipment cannot move from the accidental point	1	2
84	Case where the doors do not lock	1	1
85	Delay	1	1
86	Delay due to RFI	1	1
87	Delay and reschedule	1	1
88	Deflection	1	1
89	Damage Responsibility	1	3
90	Four macro causes	1	1
91	Someone's fault	1	1
92	Lack of maintenance	1	2
93	Human error	1	2
94	RFI causes	1	1
95	RFI deficiencies	1	1
96	External causes	1	3
97	Other factors not attributed to the single ferroval company	1	2
98	Collision	1	2
99	Accident	1	2
100	Business culture	1	6
101	Staff and Line BUs	1	1
102	Lean Organizational structure	1	1
103	Vertical Business Unit	1	2
104	Start-up culture	1	2
105	Internalize the supplier	1	1
106	Continuous exchange	1	1
107	About leadership	1	1
108	Role of resources	1	1
104	Role of protocols	1	2
110	Opinions from boss and colleagues	1	1
111	Make a choice	1	1
112	Guideline protocols	1	2
113	Employee management	1	1
114	Employee autonomy	1	1
115	Decision-making process	1	1
116	Covered system	1	1
117	Complex procedures	1	1
118	ANSFISA regulation	1	1
119	Continuous monitoring	1	2
120	Colleagues checking	1	1
121	Brand loyalty	1	1
122	Reputation	1	1
123	Frequency using services	1	1
124	Company image	1	2
125	Change of image	1	2

Table 5: Detailing final open coding with number of files and references.

Emergency procedures

Focus on quality and timing

The panels share the message

Divisions involved in emergency situations

Rule of Plannification Direction
- RFI and Industrial Plannification
- Difference between Industrial Planning and Operations Room
- Industrial Plannification and customer communication
- Information protocol
  - Internal and External communication
  - Accuracy in informations

Role of the Operations Room
- The Operations Room alerts RFI
  - RFI notifies the authorities
    - Polfer intervention
    - Judge role
  - RFI and Operations Room coordinate with instructor for train breakdown
    - Types of instructors
    - Transport management
- The Operations Room formed by train crew
  - Operations Room support
    - Operations outsourcing
    - Operational Region sales
    - Operations Center territorial and center

Planning and Monitoring

Industrial Planning trasversal with other areas
- Gestore delle Infrastrutture

Firm components
- Internal collaboration with different divisions
- Committee with directors of all dimensions
- Figure of technical and training manager, responsable for instructors

Driver preparation
- Instructors as a reference for the driver
  - GDA manual as reference for the driver
    - Master beha
- Driver behaviour
  - Driver behaves in event of sickness or stoppage
    - Driver and his vehicle
      - Transport conditions
        - Transport contract
          - European Safety Certifiate
- Emergency simulations
  - Training
  - Depannage driving

Customer Service
Relationship with clients
- External Relations communicates with clients
  - Communication with clientsc
    - Customers notified regard the abnormality
    - Code for communicate
    - Communication skills
- Contact by telephone or mail
  - Alternative solutions
    - Call the call center
    - Ask for compensation
- Customer report
  - Customer base

24-Hour Operations Room

Procedures and Rules
Regularity
- Priority managing the railroad
- Define regularity
- Punctuality

National Railway Agent

Planning and Monitoring
- Technologies use for passengers' safety
- SGS does the risk analysis
- Periodic meeting

Focus on quality and timing
- Define punctuality

Different unforeseen events

Worst cases
- Transfer to another train
- Self-substitution part
- Limitation to liability
- Stoppage on line
- Rotable that stops in line
- Stop event

Forms of railway accidents

Ways to restart the vehicle
- Time of restoration

Delay
- Delay due to RFI
- Delay and reschedule
- Strike

Collision
- Deflection

Different cases
- Cases when the equipment cannot move from the accidental point
- Case where the doors do not lock
- Accident

Damage responsability
- Four macro causes
  - Someone's fault
    - Lack of maintenance
  - External causes
    - Other factors not attributed to the single ferrovial company
  - RFI causes
    - RFI deficiencies
  - Human error

Reports for monitoring
- Travel experience
- Index that measures experiences
  - Systems monitoring past events
    - Track and Trace
      - SCMT system
    - Systems for recording
      - Black box
        - Zones are downloaded
          - Systems for recordin
      - Service reports by staff
        - Database for maintenance and corrective
    - Events that helped to understand how to act
      - Lessons from previous rail disaster
      - Importance of computer system
        - Improve computer system
    - Monitoring control system
      - Flow chart

No passengers on board

Rules with the provide

Procedures to prevent
- Precautions of good
  - Positions of sales
    - No checking
      - International Convention for Goods

Different goods transportation
- Reorder and Trasshipments
  - Entire goods moved
    - Goods arrive at destination
      - Goods continue by road
- Agreeement with chemical fider service

- International clients

Table 6: Coding process

Step 1:	*Step 2:*	*Step 3:*
Open coding	*Axial coding* *First → Final*	*Selective coding*

Chapter 3

3.1 Findings

Once the data analysis procedure was completed, the results from the interviews could be unified and processed. The interviews were then classified and contextualized using open codes, axial codes, and selective codes. The purpose of my research has always been to investigate how the organizational structure of firms changes in the aftermath of a train emergency, so the principles chosen by enterprises clearly appeared, as did the many figures involved, and lastly, the consumer figure was also investigated.

<u>(I)Emergency procedures</u>

In the preliminary stage, I attempted to respond to the research question, i.e. 'How would the company organizational assets change as a result of a rail accident'. To achieve this, I was interested in the primary emergency processes and how the panels communicate emergency information. So, I asked the interviewees about the company's protocols and which divisions are involved in these circumstances. I thought that it was vital to identify the firm components and the procedures and rules to better comprehend this topic. As a result, I've examined in detail the roles of the most important figures involved, and it's clear that a key role is assigned to the figures of Plannification Industry and Operations Room, which are accorpated in Italo, but Trenitalia and Mercitalia have two distinct sections. Particularly noteworthy is the fact that these divisions provide an essential link between Rete Ferroviaria Italiana and passengers. Indeed, their task is to provide precise and timely with respect to delays and anomalies, as well as to mobilize the necessary structures around the resolution of these. As revealed during an interview:

'The Industrial Planification System ensures the oversight of the punctuality and regularity of the scheduled services, as well as the direct management of anomalies and circular flow emergencies. Constitutes the sole central interface in communications with the appropriate infrastructure management structures.'

Another important role when an anomaly occurs is that of the train driver. The latter for troubleshooting is supported by on-board staff, instructors, and can consult the GDA manual. But regardless of these auxiliaries' figures, it became clear how essential prior experience in emergency cases is, and how important are the simulations and drills that companies organize to prepare drivers for any unexpected incidents. Trenitalia staff brought me depannage driving as an example of simulation:

'A classic example is depannage driving, each train driver knows his vehicle, so he is qualified for the vehicle, and in the qualification phase there is all the depannage driving, what if, what to do in case of, and the same education received by the train manager. There is a network of instructors who can be contacted in case of an unforeseen situation and can provide remote help and information.'

The Rete Ferroviaria Italiana also plays an important role when an abnormality occurs. The Operations Room contacts the latter as soon as the anomaly occurred. And RFI is the only one in charge of contacting outside authorities if an unexpected occurrence occurs that necessitates their intervention. For example, in the event of an emergency on board a train, if a Polfer, police guarding stations, and escorting trains, intervention is required, it is the train conductor who notifies RFI, who then notifies the authorities. And again, when a train derails or two trains collide is RFI who contacts the authorities. (Axial code Role of *Operations Room*, selective code *RFI notifies authorities*)

During coding, it became apparent that also Customer Service has a complex role because it also deals with handling customers during the contingency phase. In fact, their task is first to alert passengers about the anomaly and then offer alternative solutions to cope with the inconvenience caused to them. For example, the interviews showed that the proposed solutions are to offer them a rescheduled trip, provide a refund or voucher, take them back to their departure destination, book a night in a hotel, and offer them alternative transportation. So, it emerged how much this department needs to be equipped with communication skills. (Axial code *Relationship with clients*)

(II)Different unforeseen events

During the coding and processing of the interview results, a new theme emerged during my investigation: railroad contingencies. The most diverse emerged, which can be a delay, a collision, a strike, a deflection, and the most serious an accident, which occurs when deaths or people are injured. From these, I analyzed the responsibility for damage that can be attributed to individuals, external causes, lack of monitoring and controls, or RFI failures. As well explained by Italo's customer service manager:

We divide unforeseen events into accidents, strikes, or delays. The accident does not depend on Italo, the company is not at fault and has nothing to do with what happened, it is an accident, and as such it absolutely does not change the customer's perception of the brand.
If it is a strike, it is perceived as such, these happen in all contractual categories and do not touch the brand that much. Of course, if a company has internal strikes every month, the perception of the brand starts to change because that company starts to be perceived as unreliable. Delay on the other hand is a brand issue because if I am always late and my competitor is always on time evidently that will be a plus point for the other. Delay we avoid with careful planning and continuous monitoring.
If the delay, however, is caused by events outside the company for example related to RFI, station staff, the state of the lines there the delays are spread over all companies not just the individual brand. Brand loyalty, therefore, when is solid and deep-rooted because it is won through planned work and the quality of the company's work is not affected by events such as strikes accidents, and delays.

Following a series of damaging events, it has become clear how crucial monitoring and prevention are. Indeed, firms use reporting systems to monitor past events and learn from them in order to better prepare for future events. Also significant are registration systems, such as red scatole, which allow for the identification of the speed of the vehicle, the route, and other specifics.

Among the three companies I analyzed, it should be specified that Italo and Trenitalia carry passengers while Mercitalia carries only freight. Under the axial code *No passengers on board* I have enclosed all other goods-related selective codes. Carrying freight instead of passengers, as stated during the interview with Mercitalia staff, might yes carry fewer risks on the one hand, but on the other it carries other dangers.

In the freight company, the customer is always the shipper of the material and whenever the anomaly occurs it is he who Mercitalia must call. The restart of operations following the anomaly works differently than the normal process for passenger companies. According to the supervisor of post-Sales:

'When it comes to the after-sales and customer service structure, specifically, we have in-house a unit that is called Reorders and Transshipments, which in case of unforeseen events intervenes to make sure that the goods arrive at their destination (directly by wagon or by truck). Otherwise, we proceed either on moving the goods to another wagon, if the one in question cannot circulate, or with the restoration of the wagon's solution so that it can resume normal circulation.'

(III)Business Culture

Throughout my investigation, a new issue developed during the data analysis and processing of the interview results - the topic of business culture. This topic has become so important that it came up several times throughout the interview encoding. As a result, once the data was gathered, I chose to categorize it under a specific code: *Business culture*. I was interested in discovering how is the business organizational chart formatted and how the divisions communicated internally with the other departments involved, as well as their perception of their level of responsibility (refer to the axial About Leadership code) and how a lean structure may be a driver for better work. for better work (refer to the axial code *Lean Organizational Structure*). To better understand this discussion, all participants agreed that it was necessary to highlight the major structural differences between Trenitalia and Italo. In fact, while the first appears to have a stricter organization in most of its divisions, the second appears to be much "leaner" from a hierarchical standpoint. Despite their differences, all of those interviewed agreed that there are forms of hierarchy in every situation, even if it is critical that this hierarchy, particularly in Trenitalia, be viewed as rules and guidelines, rather than as mandates imposed from on high. For example, during an interview with one of Italo's Customer Service manager, the following emerged:

'Fundamentally, decision-making mechanisms are no longer required since, because of adverse events, people get more self-confidence in their areas of action and, as a result, everyone is now more or less aware of what to do. In terms of organizational structure, for instance, we have a very lean organizational structure. For instance, Trenitalia has at least six organizational levels, rather than just two, between the delegated administrator and the staff. This makes a significant difference because the decision-making process involves so many constraints, which significantly inhibits people's ability to move toward becoming more autonomous and independent in relation to the decisions that must be made. When you have many organizational levels, this process might be very difficult. According to our designated administrator, the first thing an organization must do is start up.'

This characteristic, which emerges within Italo, does not emerge in the same way as the interviews with Trenitalia. In fact, the interviewees from Trenitalia have described a more rigorous and complex system that is also divided. The firm is made up of many industrial planning areas depending on whether the train is Regional or Freccia. The system is made up of 16 operational areas that are divided on a regional scale. Regardless, it is clear that the Italo group is organized in a more flexible manner, whilst the second is composed of a much more complex organizational structure.

This important aspect concerns the Staff and Business Units and has been updated within the axial code *Lean Organizational Structure code.*

Even though the three models have certain differences, the respondents highlighted the relevant peculiarities between the organizations, Italia, Trenitalia, and Mercitalia, which have been accumulated on the decision-making process. During the interviews, they emphasized the importance of their autonomy in making decisions. The firms allow their employees to be free and autonomous in the decision-making process in an emergency, and it is expected of them to adhere to the protocols and guidelines that provide guidance on how to proceed with the decision-making process.

For example, during an interview with Trenitalia Operations management coordination and control manager, talking about Employee autonomy, the following emerged:

'As for the protocols, we call them more guidelines than protocols because a wide margin of action is given but always following the guidelines provided.'

In the secondary stage, I attempted to respond to the second research question, i.e. 'How the external perception of the customers of the company changes after an unpleasant event.'

To respond to this question another code within Business Culture has been established, which is Brand Loyalty. This decision was influenced by the fact that the company's culture plays an important role in terms of image and the trust that customers have in the company. Much depends on the company's reputation and the frequency with which its customers travel, as stated during an interview:

'The reputation of the business is not fundamentally affected by these occurrences; rather, it is primarily determined by different factors, the first of which is how frequently a service is used.'
'Brand loyalty, therefore, when is solid and deep-rooted because it is won through planned work and the quality of the company's work is not affected by events such as strikes accidents, and delays.'

However, it appears that brand fidelity is part of a long-term relationship built over time between the company and the customer and that if the company does its best to manage the foreseen event, for example, by doing accurate and specific communication and easy and speedy refunding work, the customer will remain loyal to that company.

3.2 Discuss and Implications

As evidenced by the results presented above, my research yielded a variety of outcomes that were consistent with the research objectives I established when conducting the current qualitative study. Some major findings, in particular, can be compared to existing literature that I used to form the primary points of my thesis.

Emergency procedures

Based on Sood et al's opinion, I can see that collaboration and communication between divisions are very significant. Teams, according to the authors, are advantageous since they increase efficiency and promote organizational learning while improving communication, in particular, from my analysis, when impromptu rail events necessitate immediate intervention, effective communication, and damage control. All the participating companies have agreed to plan for business continuity in the face of disruption, including the development of processes and procedures to ensure that the business divisions involved can recover in the event of a disruption, as Martin Reeves and Kevin Whitaker have stated. In accordance with the authors' thinking I believe that Italo, Trenitalia, and Mercitalia organizational charts can be read using the principle of 'if you can help a colleague, you should', which means that employees from the various divisions involved must keep in touch, and it is critical to maintain an effective and transparent communication relationship when the company is in trouble.

The results have described how prevention and monitoring are critical preventive measures for avoiding the occurrence of stop events. Each assigned division works closely with the other teams to coordinate efforts and manage the situation as quickly as possible. The goal of companies in responding to inquiries is to be as efficient, transparent, and timely as possible. By building enabling structures and cultures of innovation, the business gets the flexibility to move swiftly and value openness and cooperation over conventional operating procedures. This reasoning corresponds perfectly to the visions of Lyubomirsky et al., and it can be integrated with what is described by the Agenzia dell'Unione Europea per le Ferrovie, which emphasizes the role of the team involved in the performance of specific types of tasks.

Different unforeseen events

The most important aspect of my work has been identifying the many types of unexpected events that can be emerge and what the potential causes are. I also asked the interviewees what strategies they thought would be effective in preventing these situations from worsening or limiting their impact, and many said that technology would be the most effective. They believe that since her improvement, there have been improvements in terms of disruption. According to the authors Martin Reeves and Kevin Whitaker, technology may play an important role in the development of resilience by assisting in the identification of potential risks and automating many processes.

It is also visible from the coding that railway organizations are particularly efficient in mutable and ambiguous situations that necessitate a more creative and proactive approach. For this reason, they are equipped with

monitoring systems and backup processes to ensure the continuity of operations in the event of failures or interruptions. For example, there are more lines that can be used in the event of interruptions or delays.

Business Culture

As mentioned in the results, there is another crucial factor that has been relevant, particularly during the course of my analysis of qualitative research results, which is related to business culture and, in particular, to employee autonomy. It is clear that the flexibility provided to dependents allows them to make autonomous decisions based on previous experience and events, while also ensuring more secure management of the unexpected. The dependents always collaborate with the entire division, which may also be referred to as a resilient team, and this allows for better disruption management in times when things are more productive and efficient, just as Lyubomirsky and others have done.

The analysis of the interviews also revealed how important it is to learn from past events, in fact, thanks to them workers gain competence and, at the next event they will be able to take advantage of their previous experience, 'a strong memory improves improvisation because it increases the ability to improve decision making and situational awareness'. This line of thought corresponds perfectly with that of McEwen et al.and Kazanjian's

Limitations

Some limitations emerged when doing this study. First, due to the companies' overwork during this period, and in the case of Mercitalia, due to the distance as the office is located in Milan, therefore, it was difficult to organize live meetings. As a result, I opted to meet using Microsoft Teams and Google Meets, which had a significant impact on the respondents' level of participation and involvement. Another factor to consider is the sample size. Although it is heterogeneous, considering three separate lines of business and people in various positions, I believe that a bigger sample size would enhance and deepen the research.

Implications for future research

My research adds to the existing literature on business improvisation, organizational resilience, and the brand image of firms after a disruption. Furthermore, a debate will be held on how workers might collaborate and coordinate to solve an emerging problem in a relatively unstudied but highly active industry in terms of innovation and change, the transportation sector. With this goal in mind, the results of my research could help to prepare the way for future studies on resilience and business improvement in the transportation sector. Furthermore, my research could have implications for these businesses in terms of (I) changing the organizational structure of the company, (II) repositioning the brand after an uncomfortable situation and (III) improving communication with customers and passengers by providing the best possible support. The railway industry's employees were thoroughly interviewed, allowing for a better understanding of their perceptions of the company, as well as the practices and procedures used to deal with emerging issues and structural and

communication models. This is an encouraging sign that the various opinions, practices, and communication strategies may be useful for businesses vying to organize their operations as efficiently as possible during an unplanned event, to maintain their shared sense of commitment to avoid losing customers or creating dissatisfaction with the company. What I am symbolically leaving as a legacy of my paper is the fact that I have constructed the foundation for a project, the conclusion of which I am writing today, but which is only a portion of the project. The difficulties presented by the interviewees and studied by me show that the survey is not only exceedingly complicated but also a very dynamic and ever-changing topic. Finally, my purpose is to offer myself as witness to the change that is taking place, and I am confident that there will be numerous disparities with the past and unavoidable repercussions. They will surely merit in-depth investigation to comprehend the mechanisms and anticipate their eventual evolution.

3.3 Conclusions

The current project investigated how a railroad problem affects the company's organizational structure and its various configurations. Another important component of the project was determining how these various anomalies affect the brand image and whether they change customers' impressions of the organization.The findings of this study helped me better understand how disruption management works and the internal changes that businesses make to improve resilience and resolution. The goal is to improve overall company performance and please consumers while causing them as little harm as possible in uncomfortable situations. The goal that I set for myself was to figure out how to change the company's organizational assets after an unexpected catastrophe. I chose to examine in detail three companies involved in rail transportation because this topic is underrepresented in the context of this industry.My curiosity was to learn which figures were the most involved and how the various divisions divided the work, managed the unexpected, and communicated with one another. The second goal I set for myself was to understand how disruption and its management may affect customer perception of the brand, as well as how disruption and its management could affect customer loyalty. While doing the research with rigor and reflexivity, I became aware of various limits of my study, which I bring to the reader's attention.First and foremost, the existing literature on organizational resilience has examined these elements in organizations operating in a variety of industries, with little emphasis on the railway industry, which is the focus of my research. Conciliating the current results of literature and my research has been difficult for this reason, but it required a high level of honesty and critical thinking.Despite my initial reservations, I was convinced that the discoveries and insights on the issue are applicable in a variety of contexts and could be applied to a very specific sector, in my case the railway system. Second, research is being conducted.In secondo luogo, la ricerca non è ampiamente applicabile a causa della natura qualitativa dello studio. Second, due of the qualitative nature of the study, the research is not universally applicable. The use of a qualitative technique proved critical in doing this research since it allowed me to examine in depth and gain a full view of the data I was collecting through interviews. Understanding the effects of the unexpected on businesses is, indeed, difficult to quantify. I was able to comprehend the complexity of handling the anomaly and which divisions are most involved in fixing it using the qualitative technique. Italo, Trenitalia, and Mercitalia were the companies studied. This decision was taken specifically to compare organizations of varying caliber and age, as well as to demonstrate how management changes when delivering goods rather than passengers. Furthermore, as demonstrated in the article, some distinctions can be observed between Trenitalia's more vertical hierarchical design and that of Italo, an organizational structure with less hierarchical stratification.In contrast, intuitions are more likely to be significant and appropriate for a fairly narrow range of organizations identical to the three under examination. In fact, I had to rely on a small sample of participants, restricting the potential for generalization even further.Furthermore, while organizational resilience and corporate improvisation are frequently at the center of the argument and are concerns related to some strong organizational practices, they might be awkward to discuss publicly. As a result, admitting to being out of sync with such 'best-

practices' may have been more difficult for some individuals, particularly those in specific jobs within the organizational hierarchy. However, the open discussion of limitations, negative perceptions, and doubt was interpreted as a positive signal of intellectual integrity, which contributed to the results being solid and rigorous. Furthermore, while I was able to obtain data saturation within the time and scope allotted for the investigation, additional research, investigation, and specification may be required for a comprehensive explanation of this large and difficult phenomenon.This process is currently ongoing; nevertheless, given the findings of this experiment, it is feasible that continued technology improvements will also help to prevent or resolve these unanticipated situations.

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ANNEX 1: Interviews Transcripts

Interview date and time: 12/04/2023 12.00 a.m.

Interviewer (I): Arianna Aurigemma

Gender: F

Age: Not Available

Participant (P): Circulation&Traveler Management Manager (Operation Department)-A1

[General statements and icebreakers. The interviewer gives an introduction in which he or she describes the goal of the study. The interviewer requests consent to record the interview. The participant accepts].

I: Ok so, everything should be in place. Let's begin, shall we?

P: Yes, of course.

I: First, may I ask you again if it's okay with you if I record the interview?

P: Sure! No problem.

I: Ok. Perfect. Before we begin the interview, I'm going to explain how it is divided. The structure of the interview is composed by four parts: the first is communication and information sharing, the second is prevention, the third is training, and the fourth is relationships with other coworkers.

P: Clear, please proceed directly!

I: What does the operations sector focus on? What role does the Operation Room's management activities in an emergency?

P: Everything that is abnormal in the Operating Room, including interruption, is managed by the operation's direction, which is made up of several structures, including the exercise structure. There are several coordination contained inside this last. For example, traveler coordination, circulation, fleet, and rotatable materials.

I: The Operations Room is a 24-hour Operations Room, therefore the Master of the room, who is the main actor in the room and who coordinates all the coordinators in the room, is present 24 hours a day in shifts. Our high-speed trains run between midnight and 5 a.m., all the trains that leave the plants and go to the station at the end of the commercial service are transferred to the plant as a new consignment during the night-time period, there is only one monitoring whether it is either maintenance of the or cleaning there is a control with both internal RFI (Rete Ferroviaria Italiana) systems and external systems. Then there are the colleagues from the fleet who check the status of the rolling stock and they do this through material that is provided by ALSTOM, who is our maintainer, and we have a dashboard that shows us any problems the rotatable has. For example, if there is a problem with the pantograph or even a fire in progress on a carriage, the dashboard gives them important information, and in addition to the dashboard, important information is also given by the ALSTOM staff, who are at the headquarters and have a room next to the Operations Room. It is a 24-hour support help desk next to the operations room, they support the fleet for the continuous support of the rolling stock, if there is a problem with the rolling stock that they consider to be a high risk they go into the room and ask for the rolling stock to be stopped. If it is running, they even ask for it to be stopped.

I: What does the operations room do in the event of a stoppage?

P: Alert RFI's national Operations Room and with the number of trains in circulation and a very short number of stoppages, think also for example of a stoppage on the Rome-Florence direttisima we have time slots where there is a train every 4 minutes, so imagine the range! The driver stops alerts the traffic controller, the train conductor alerts the Italo Room, the Italo Room alerts the RFI national room, and they start together with the help desk and the on-call instructor to work together to get the train to depart. There are two types of on-call instructors:

-train driving instructors when the problem arises at the machine and then at the driver's desk.

- train leaders support the train leaders, in which case there are fewer blocking faults unless there are door faults. For example, the entire depannage procedure is started to ensure that the issue is resolved and that the train may go again, for instance, when it loses the blockage at the doors and is in motion but is unable to turn around because the doors are not locked. As soon as it became clear that the train wouldn't be able to disembark, procedures were put into place. The room, along with two structural engineers and two operational and strategic reparable, each of whom is located inside the operational standby room and strategic that is higher in ability, and RFI, organize what is essentially the technical failure of the infrastructure. At that point it is decided how to restart the vehicle, whether to restart it at line speed, whether to restart it at line speed but at a later station to transfer it to other material because it is decided in advance that that material may not reach the end of the line. It could restart not at line speed so with a speed prescription and then, in that case, the operator forwards it on a line alongside then slow line to the first useful location. The worst cases are those in which the equipment cannot move from where it is and is therefore towed by a rescue locomotive, or it makes a transshipment on the line and therefore another train is pulled or alongside it and passengers are moved on the gangway, these are the cases of a stoppage on the line.

I: And what are the most frequent forms of nature of railway accidents?

P: So, four macro causes are the main causes that go into defining what the standards of punctuality are. For example, the rotatable that stops in line, RFI, external causes, and any other factors that cannot be attributed to either the ferrovial infrastructure manager or the operating company.

I: How is internal and external communication handled in the event of an emergency or a railroad incident?

P: Internally the train driver has the GDA manual as a reference and the instructor refers to this manual and ALSTOM talks to the instructor not directly to the driver. Whereas the train master accompanying instructors deal more with service-related issues unless they are door-related issues which are safety issues here.

I: and what divisions are most involved in communication between you and the pedestrians?

P: Then internally there can be called a committee, this committee usually includes the directors of all the facilities, i.e., the operations director, and below that there is the head of the operations facility and then the operations room, the maintenance manager who then has contact with ALSTOM. Normally there is also the technical and training manager who is responsible for the instructors, and there is the production manager who

is responsible for the personnel. Normally a table is also opened by RFI. At the table of the committee normally the SGI director, who is the internal director of security, can also sit.

I: As far as communication with passengers is concerned, who is it that tells them about unforeseen events?

P: In the Operations Room and in particular the travelers' coordination, when there are major abnormalities, External Relations comes to us to find out what's going on and draws up the press release. What we communicate on the website is always communicated by us in the operations room, concerning one-to-one information, what is communicated on Italo Informa is published by the traveler coordination, but the info is decided and before going out it is decided by external relations and the commercial management. Concerning what is off-site we manage it through procedures we have implemented, and we manage two types of information:

-internal, which goes to station staff, on-board staff, contact center (customer service) and

-external.

If we need to notify the public of a delay or suppression, we frequently provide bulletins of what happens through an application; the cause must always be the same since we provide a code. If, for instance, an investment causes a fatality, the code—which we refer to as IAP code—will not refer to the investment but rather to judicial authorities instead. So, on the app, we communicate the train number, any minutes of delay, and the IAP code of the judicial authority, and the same codes we enter in the one-to-one info (which are the e-mails/messages in private form), and it is the same announcement that the train conductor and train drivers receive on the internal app.

I: What procedures do you follow to ensure the continuity of train services in the event of an unforeseen event?

P: The European regulatory reference is 13/71, and the legal department draws up the transport contract. A train if is 60 minutes late the passenger has the right to ask for reimbursement it is always from the Operations Room that we are the ones to move the passengers, if we already have alternative solutions we will not only say that the passenger's train will be delayed but that we have also moved the customer to a train x that leaves earlier and if the alternative is not to your liking you can call the contact center. If, on the other hand, you decide to travel and arrive at your destination with a delay of 60 minutes or more, you are entitled to compensation, which is a percentage of the amount you paid for your ticket. Italo's policy is that if the train is delayed, the company will give you compensation; other companies operate differently. if the company is unable to continue your journey on the same day because the train is canceled, I will refund your journey, transfer you to another train in the port, or give you a hotel.

I: What security and emergency procedures has the company implemented to prevent unforeseen events and ensure continuity of service?

P: We have internal emergency procedures, which are procedures where normally the personnel is trained and emergency plans are made on board that prescribe to the personnel who are on the trains what they have to do in the event of a collision or accident, there is a flow chart, how the train master behaves and how the driver behaves on board who calls who and what the driver does in the event of a passenger being sick what he does

in the event of a stoppage. There are also emergency plans that are made by the infrastructure manager and emergency simulations are also carried out, often at night, usually in the summer, where emergency scenarios are often simulated, such as tunnel stoppages, or recently we did a very interesting one in Bologna where a fire is simulated in the underground station there, those are made by the manager and involve the companies during the exercise.

I: What are the monitoring and control systems used by the company to prevent and detect unforeseen events on board the train?

P: This is an issue that SGS would certainly be able to answer, there is a management that does the risk analysis, which is SGS, it sits at the table with maintenance and constantly monitors the events that have caused problems in the past, normally these meetings are quarterly. And alongside these technical tables, what happened to the rolling stock we go and analyze the service reports made by the staff, what happened, and how it happened so that we can analyze in more detail the situations that occurred.

I: What technologies does the company use for train and passenger safety, such as the automatic emergency braking system?

P: Then that's not an emergency system, the SCMT is a system that is prescribed to you by the network, the National Railway Agency, so it's not a system that the company puts in place, it's a system that they prescribe for you to be able to circulate so if you don't have the SCMT you don't circulate.

I: So, there are no technologies?

P: Yes, there are the preventive technologies, there is, for example, the dashboard I was telling you about earlier that shows us what are the failures of the rolling stock, there are the emergency procedures and risk analysis, but the whole system of rolling stock is built based on regulatory standards, so they are not actions that the company puts in place, the company adheres to the standards otherwise it would not be able to circulate on the line.

I: How is the preparedness of front-line staff involved during railway incidents ensured?

P: Different types depending on the role. Drivers have a very long training course, they have a classroom period, they have an apprenticeship period, and then they get their license. They must get acquainted with the rolling stock and the line, so after they have passed the exam and obtained their license they must run on the prescribed lines and on the lines alongside because the train can also be run on a line alongside if there is a problem on the prescribed line. The operations room coordinators are normally former train crew, a training period that lasts about 3 months. All the other figures involved in the first person, e.g., engine or onboard instructors, are former train drivers or train conductors, who were then ASP-recognized instructors and then took the examination and were recognized as instructors for all intents and purposes, they cannot be instructors if they have not been a train driver or train conductor.

I: What are the company's information management procedures for communicating with passengers and the relevant authorities in the event of unforeseen incidents?

P: In the event of an emergency on board a train, if there is a Polfer intervention to be requested, it is the train conductor who notifies RFI who notifies the authorities, it is always RFI. If a train derails or two trains collide, it is RFI that calls the authorities.

I: What are the systems for recording train activities, such as black boxes, used by companies to collect useful information in case of unforeseen events?

P: If something happens, everything is recorded, even the driver's license number of the driver who is driving that train is entered, so you know who is on board, as well as knowing this from the staff's watches. At the end of each journey, the zones are downloaded to see how the train has been progressing, whether there has been braking, a particular behavior, whether there has been a problem, at the end of each commercial service the zones are downloaded to see if there has been a problem.

I: What internal procedures do you follow to ensure effective collaboration between the various functional areas during the railway disruption?

P: Periodic meetings between the various structures, for example, the periodic committees that the director holds with the various structures, there is a continuous exchange.

I: What lessons have you learned from previous rail disaster situations that have helped you to improve collaboration between the different functional areas?

P: Certainly, the events that helped us understand what we had to do and how we had to do it better were the snow in 2018, which blocked Rome Termini and Naples and all of Italy, Livraga in February 2020, and the Covid. What we have understood and what we are trying to do is definitely what helps an operations room in the management of the emergency, the computer systems, if you have good computer systems that help you manage normality you always win and above all, you can manage a large number of passengers so what we have taken home is the need to continuously improve what are the computer systems. Related to train monitoring, public information, and rolling stock control.

I: In an unusual, never experienced situation, have you ever had to make an unusual decision without having to follow a specific protocol? So, were you a Democratic or an Authoritarian leader?

P: Almost every day, because we do the exercise and the operations room, we follow protocols, but we also need to go into the grey areas. Concerning leadership, I am very democratic, I listen a lot to the opinions of my boss and my colleagues because I find that they have a lot of experience and great professionalism, and I listen to them a lot.

I: All right, the interview is over. Thank you very much for your time and your accuracy.

P: Not at all, it was a pleasure!

Interview date and time: 21/04/2023 12.00 pm

Interviewer (I): Arianna Aurigemma

Gender: M

Years of experience: 7

Participant (P): Customer Service Manager-A2

[Introduction to the experimental thesis and general claims. In his introduction, the interviewer discusses the purpose of the research and the reasons for his decision to conduct an interview for the next position. The interviewer requests permission to record the conversation. Participant concurred.]

I: Good morning, as agreed we will proceed with the topic guide that I have attached to you by email.

P: Yes perfect, the topic is very current and interesting, from what I recall from study sessions, but it hasn't been explored in detail despite being a vital part of business life. Would you like to add more details to this argument?

I: The work I'm doing is divided into two parts; the first part examines in more detail how an organization's organizational asset changes after a delayed railroad project and how the company attempts to exit this phase. The second section, on the other hand, focuses on how the business interacts with its customers and how its external reputation changes because of an unexpected incident. For this reason, I'm asking for your help today since I believe Customer Service knows how to adequately address all my questions at this point.

P: So, we may say that an organization is made up of procedures, processes, and rules that codify the rules; these are the organizational hard components that change gradually and serve as its skeleton. Then, as the company's muscle could suggest, the soft components run through the organization and set it apart from others. If you take the example of organizational charts, they may have more or fewer levels of hierarchy, but practically speaking, their functions are the same in businesses in the same industry since the skills required are those of the macro processes, which are those. These are the more intriguing aspects of this apparent similarity since they create significant differences from the perspectives of business performance and business image. More than job roles and organigrammes, which don't change because they are structural elements, what interests' improvisation and resilience is the business's culture, or more specifically, its capacity to set organizational examples and transmit specific values to resources where the empowerment of individuals is put into practice.

However, each person feels independent and autonomous, rejecting the idea of a fixed, unchanging role because the decision-making levels remain constant, increasing their autonomy and empowerment with each disruption. For example, the first disruption was discovered to be related to an occurrence, but it was discovered that the same disturbance had used the previous disruption's behavior as a model the second time it was seen.

We are already in an advanced stage of this process, so when faced with potentially dangerous elements, everyone knows how to act, when to ask for permission, and when to exercise more autonomy.

I: How would you describe your organizational and decision-making level within the division?

P: Fundamentally, decision-making mechanisms are no longer required since, because of adverse events, people get more self-confidence in their areas of action and, as a result, everyone is now more or less aware of what to do. In terms of organizational structure, for instance, we have a very lean organizational structure. For instance, Trenitalia has at least six organizational levels, rather than just two, between the delegated administrator and the staff. This makes a significant difference because the decision-making process involves so many constraints, which significantly inhibits people's ability to move toward becoming more autonomous and independent in relation to the decisions that must be made. When you have many organizational levels, this process might be very difficult.

According to our designated administrator, the first thing an organization must do is start up.

I: What information should you provide to customers regarding the unexpected railroad, and how do you and the customer communicate?

P: All customer communications are sent from the Operating Room in a message or email to the contact information the customer has left. Information about trains, which includes delays, cancellations, and possible substitutes, but as required by European Union law, customers have the option to cancel their trip and receive a refund (Article 16 of the 2017 EU Regulation); alternatively, we can create a credit that can later be monetized. The other right is the ability to reschedule the train in accordance with his needs rather than the arrangement that the operating room has already mandated. He is free to choose to organize himself directly.

I: What if the client has already left and is traveling?

P: In this situation, if a person is traveling from Naples to Milan and an incident prevents them from getting there, they have the right to be returned to their starting point.

I: How does an organization's image change after an unexpected event? And how are these consequences handled?

P: The reputation of the business is not fundamentally affected by these occurrences; rather, it is primarily determined by different factors, the first of which is how frequently a service is used. Each of our millions of annual travelers is assigned to a cluster according to how frequently they travel each year. We have a customer base. For example, someone who travels twice a year is not a regular traveler but is dependable and has had a travel experience that develops across all touch points. Everything that concerns a travel experience, however, is something that has already begun to appear in the client's perception, and we gauge this experience using periodic inquiries that we conduct on many travelers.

I: How are these sentences constructed?

P: They comprehend a multitude of analytical questions that probe each of these touchpoints, and the results are then codified in a customer satisfaction index that measures each of these experiences (from comfort to punctuality to onboard services, etc.). These reports are very helpful since they are systems for monitoring, changing for the better, and creating ongoing attention to performance improvement.

I: What are the incidents that might occur?

P: We divide unforeseen events into accidents, strikes, or delays. The accident does not depend on Italo, the company is not at fault and has nothing to do with what happened, it is an accident, and as such it absolutely does not change the customer's perception of the brand.

If it is a strike, it is perceived as such, these happen in all contractual categories and do not touch the brand that much. Of course, if a company has internal strikes every month, the perception of the brand starts to change because that company starts to be perceived as unreliable. Delay on the other hand is a brand issue because if I am always late and my competitor is always on time evidently that will be a plus point for the other. Delay we avoid with careful planning and continuous monitoring.

If the delay, however, is caused by events outside the company for example related to RFI, station staff, the state of the lines there the delays are spread over all companies not just the individual brand. Brand loyalty, therefore, when is solid and deep-rooted because it is won through planned work and the quality of the company's work is not affected by events such as strikes accidents, and delays.

I: But what if, for example, there were to be bad experiences, due to comfort? For example, it's August and the air conditioning doesn't work. That could give customers dissatisfaction.

P: Such events have occurred and are occurring, even in a bathroom that does not work. In previous years, we had problems with the supply of soaps, which might seem like a trivial thing, and it is not, from these mistakes we have also learned about the choice of suppliers, so everything is improved by learning from experience.

I: Specifically, what do you in customer service deal with in these cases?

P: Our main concerns are those pertaining to communication, specifically communication speed. Even if you are quick to communicate with a customer but do it in an unprofessional manner or communicate poorly, the customer will still have a negative perception of you if the times are slow.

We do, however, focus on quality and timing responsive to requests, and to do this, we work with external suppliers. We are an organization focused on operations outsourcing, and to ensure that the outsourcer does a good job, contracting, and management are required. We also have extensive monitoring, reporting, and control of operational rules with the provider. The goal is to have the supplier internalize the mindset of one of our colleagues and become a part of our organization.

I: Perfectly clear. However, moving on to the final question: What are the economic effects of the anticipated railroad construction on your business, and how are you addressing these effects to ensure the sustainability of your enterprise?

P: When there is gross negligence, for example, there have been accidents in the past due to RFI deficiencies, in this case, the damage is the turnover I lost, and if it is someone's fault our legal department assesses it, and compensation is claimed. Whereas if it is accidents caused by weather events there you cannot claim compensation from anyone. In cases where the accident depends on 'human error or lack of maintenance, there is a fault and therefore compensation.

I: Okay. I understand thank you very much for your helpfulness and accuracy in your answers.

P: Not a problem if you have more to ask, please write to me and good luck with your graduation.

I: Thank you very much! Goodbye!

Interview date and time: 24/04/2023 2.30 pm

Interviewer (I): Arianna Aurigemma

Gender: M

Years of experience: 8;7.

Participant (P): Direction of Industrial Planning (Operations management coordination and control manager)- B1

Direction of Industrial Planning (Operations management coordination and control manager)- B2

[Prior to the recording, I introduced myself, and my research, and I questioned him about himself, his past, and his current position in the company. Then I had the consensus to turn on the registrator.]

I: Okay, so everything ought to be set up. Shall we get started?

P(B1): Of course, I agree.

I: To begin with, could I once more ask your permission to record this interview?

P(B1): Sure! No issue.

I: Ok. Perfect. I'll describe how the interview is separated before we start. The interview is divided into four sections: the first deals with the exchange of information and communication; the second, with prevention; the third, with training; and the fourth, with connections with other coworkers.

P(B1, B2): Okay, go ahead and continue right away!

I: What is the rule of the Industrial Planification Direction?

P(B1: The Industrial Planification System ensures the oversight of the punctuality and regularity of the scheduled services, as well as the direct management of anomalies and circular flow emergencies. Constitutes the sole central interface in communications with the appropriate infrastructure management structures. We have 16 operational regional sales across the globe at Trenitalia. There are 16 sales because some regions have been included. The intercity Operating Room and the Frecciarossa room are next. When RFI contacts the companies, it requests a single interface that is represented by Industrial Planification. This group of operational cells is then coordinated by the main Operating Room. Thus, the management's role is to oversee regularity and punctuality.

I: What do you intend by regularity**?**

P(B1): When we talk about regularity, we mean when a train is canceled, when a deal is canceled in the middle, or when a train is forced to make cancellations to return to regularity. While punctuality is measured by the punctuality at the end station where the train arrives, this is governed by UEC standards set in Italy by the Gestore delle Infrastrutture**.**

I: How is internal and external communication handled in the event of emergencies or railroad incidents?

P(B1): In the context of information and communication, Industrial Planification takes care of the clientele's communication process regarding real-time rail traffic and major traffic program changes through the collection, editing, and publication of transportable information through the ViaggiaTreno service and the Infomobility section of the company website. Because every regional or product-specific operational saloon

pays close attention to its perimeter, the risk is that the client will be treated like a regular customer or a regional customer when, in fact, they are a Trenitalia passenger. For this reason, the information must be accurate to prevent upsetting the customer. In terms of industrial planning, we are interested in the uniformity of the information available both on board trains and on business websites like Trenitalia.com. In particular, the information curator, Infomobilità, could send information even across the automatic ticket office, when the abnormality is particularly severe. In the buying phase, communications are released, and the update follows in the quickest timeframes possible, even up to the time of resumption of the anomaly; nevertheless, in the event of a lack of information, we do not provide the resumption timeframe. The information is always correct here as well as on the train app, real-time updates, and other sources.

I: What safety and emergency procedures has the company implemented to prevent unforeseen events and ensure service continuity? And what are the monitoring and control systems used by the company to prevent and detect events unforeseen events on board the train?

P(B1): Railway Companies have a European Safety Certificate issued by the relevant Agencies. Company protocols ensure compliance with international regulations and are certified by external bodies that periodically monitor their effectiveness. These are complex procedures that can be traced back to the well-established Plan-Do-Check-Act (Deming cycle) type methodologies. When faced with a technical question, it responds to the regulations and then issues you with the safety certificate. The railway world is very rigid.

I: What technologies does the company use for train and passenger safety, such as the automatic emergency braking system?

P(B1): Among the most famous and modern adopted in Italy is the ERTMS-ETCS (European Railway Traffic Management System /European Train Control System), this is a protection system that passively ensures compliance with the maximum speed at every moment of driving. Beyond the breakdown, contingencies strictly peculiar to the railway system must also be covered, such as fires along the line, earthquakes, extraordinary weather events, intemperate travelers, and vandalism or theft to the infrastructure. These are just examples of abnormalities whose management is entrusted to a system of territorial and centers. When the system brakes the train brakes altogether, in the emergency condition the train is stopped because it does not know what the driver is not braking from.

I: What training and education does the company provide its employees to handle emergencies and prevent unforeseen events?

P(B1): Traveling personnel, before they are allowed to perform their duties, must have undergone training as required by ANSFISA regulations and obtained the relevant certification. In addition, appropriate procedures produced by the company inform and educate the staff about conditions that might occur while on the road. These procedures are also known to the Operations Rooms to provide maximum support to the on-board staff in case of abnormalities and to coordinate possible rescue operations with the Infrastructure Managers and/or Law Enforcement if necessary. A classic example is depannage driving, each train driver knows his vehicle, so he is qualified for the vehicle, and in the qualification phase there is all the depannage driving,

what if, what to do in case of, and the same education received by the train manager. There is a network of instructors who can be contacted in case of an unforeseen situation and can provide remote help and information.

I: What are the train activity recording systems, such as, for example, black boxes, used by the company to gather useful information in case of unexpected events?

P(B1):: The rolling stock is equipped with a special black box that records the speed and the driver's responses to the running conditions imposed by the signs and directions coming from the Manager. Even trivially what time the doors close. In case of unforeseen events, the data from the black box are authentic and even the judiciary can request this data. The black box is used both in the technical tables, between us, to see whose responsibility the disruption was and by the judiciary if they ask us for further investigation. For example, if a person falls off the moving train, it means the doors open and he falls, certainly the judge will ask for the black box to make sure that the doors had been closed before leaving and that the door lock was in operation.

I: How do you collaborate with other functional areas, such as train maintenance, and personnel management, to deal with the railroad contingency, and what internal procedures do you follow to ensure effective collaboration?

P(B1): Its reality is a hybrid between Staff and Line BUs. The protocols govern every aspect of rail operations but leave margins for operations stretched to consider every circumstance. In the Trenitalia organizational chart, the business units are vertical with respect to the figure of the CEO and then there are a whole series of staff structures. Industrial Planning is hybrid because it is a transversal organization, we are not staff with respect to the CEO but at the same time, we are transversal with respect to the other structures. As for the protocols, we call them more guidelines than protocols because a wide margin of action is given but always following the guidelines provided.

I: What lessons have you learned from previous railroad contingency situations that have helped you improve collaboration between different functional areas?

P(B1): During serious abnormalities specific Operations Centers are established both Territorial and Central. To gather all the necessary expertise and manage all the needs of the case. Then a special Investigation Committee is set up, where required by the regulations, or a working group aimed at structuring a lesson learned. The operations room increases the number of databases that are functional then for maintenance, which can be either preventive or corrective. And there are engineering areas, which based on the most frequent failures, most frequent anomalies can share with the maintenance area or suppliers these train anomalies. This is because trains are purchased through full service, including maintenance, and therefore changes cannot be made at will. When there is a serious abnormality a COT Territorial Operations Center is activated, or central if the abnormality is at the national level, here the on-callers intervene and make those choices that may not agree with the procedure, that's why we were talking about guidelines earlier.

I: That was the last question regarding the industrial planning division if you agree we can move on to those regarding the customer service area.

P(B2): Yes perfect.

I: then the first question is what measures do you take to ensure the safety of your passengers during the unexpected rail incident?

P(B2): Rail contingencies can be classified with different orders of severity that determine the adoption of mitigation protocols. Within these protocols, information before-during-after the journey plays a key role and is regulated both by EU Reg 1371/2007 and EU Reg 782/2021.

The aim is always to keep our customers updated through multi-channel information in real-time to answer any doubts about delays, cancellations, connections, or any changes to the service. All Railway Companies adopt a Management System for Railway Safety, Quality, Environment, Occupational Health, and Safety aimed at ensuring compliance with national/international standards as well as with the requirements of the sector authorities (ERA and ANSFISA).

I: ok, perfect, and what are the consequences of the unexpected railway on passenger travel planning and any options available to customers to change or cancel their scheduled trips?

P(B2): Appropriate desks at the station, as well as a dedicated call-center service, work together with the Train Conductor to assist customers in rescheduling their trips. In addition, Customer Services contact booked customers who have not yet departed to notify them of any travel changes (cancellations, delays, train changes). Finally, sales channels are updated by suspending certain services from sale and disseminating information on all possible inconveniences. Any cancellations or delays are handled according to EU regulations, which provide refunds of 25% for delays between 61' and 119' and 50% if the delay is more than 120'. In the case of HS trains, there is a 25% voucher claimable by the customer in case of delays between 30' and 60'. Nothing excludes that in certain particularly onerous circumstances, a full refund of the ticket has been arranged as an additional measure of commercial attention.

I: And what are the possible transportation alternatives that you offer to passengers affected by the rail contingency?

P(B2): Diverting a train along an alternative route, self-substituting part of a service or the whole train, calling a cab, proposing an overnight stay in a hotel postponing the trip to the next day; these are among the possible options that arise in order not to permanently cancel the trip. In the past, a motorboat service has even been organized to deal with a serious abnormality that had lasted for several days on a section of railroad adjacent to the coast. In general, compliance with regulations, as well as EU regulations, are not debatable; therefore, they precede any commercial attention to safety.

I: Finally, the last question is what are the implications for the company's image following a train accident, and how Trenitalia intends to handle these consequences?

P(B2): Every case is different and requires high communication skills as well as a keen sensitivity aimed at interpreting the moment and everyone's needs. That is why we convene special panels of internal experts

from specific Business Units who share the message with all the Stakeholders. We have an external relations group that communicates through press releases, when there is time to write them, usually in the case of train accidents the problem is big and so you don't really have time to share the information you always go on the company sites. So, I think people are not disincentivized to take the train, a lot does how much a person is informed about the company. What drives the choice is the price usually or if it's a commuter take over the strengths of Trenitalia, we do the subscriptions for the arrows, we have a greater offer, and we can offer you continuity of care.

P(B1): If I may add to the passenger, even if you are 97% punctual, he will always remember that time when the train was late, and he was late to an engagement.

I: Ok perfect the questions are finished. Thank you very much for your helpfulness.

P (B1, B2): If you need anything else we remain available

I: Thank you very much Have a good day!

Interview date and time: 27/04/2023 3.30 pm

Interviewer (I): Arianna Aurigemma

Gender: F

Years of experience:

Participant (P): Responsible for customer service and after-sales support- C1,

 Operations Room Manager -C2,

 Security Manager in the Operations Room-C3.

[Comments: The space was packed. Other workers were walking past and spoke with one another. Minor disruptions occurred during the interview. The interviewer requests permission to record the conversation. Participant concurs.]

I: Good morning! Before I started, I divided the questions into two parts: one for the Customer Service department and the other for the Operations Room and Industrial Planning department. So, the first question is what information do you provide to customers about the railroad disruption?

P(C1): However, the structure of Post-Sale and Customer Service is concerned with providing information to the contractual client, who is typically the buyer who represents the front office of the company. We are concerned with the client-company relationship as well as the client's information provided to technical operational structures. The information we provide refers mostly to track and trace, or transportation monitoring. Regarding unforeseen rail accidents, they can be of different kinds: a wagon failure, a failure of a transported unit, a shift of cargo, a derailment, or an investment. The range of predictions is quite wide, and we contribute by providing information on the event.

P(C3): One feature of the transportation of goods is that it is frequently international, even though the recipient can be found overseas or in Italy. We might be the ones who handle the contract with the client directly, or a third party might refer business our way for the delivery of goods to Italy.

I: What precautions are taken to ensure the safety of the cargo you transport during the anticipated rail trip?

P(C1): Then meanwhile during the unforeseen railway safety is governed by the requirements of the Gestore dell'Infrastruttura or in case it is involved by the judiciary. In this case, there can be various interventions, it can be about tidying up a load, or failure of a wagon, and these are interventions for which we have direct rescue. When it comes to the after-sales and customer service structure, specifically, we have in-house a unit that is called Reorders and Transshipments, which in case of unforeseen events intervenes to make sure that the goods arrive at their destination (directly by wagon or by truck). Otherwise, we proceed either on moving the goods to another wagon, if the one in question cannot circulate, or with the restoration of the wagon's solution so that it can resume normal circulation.

I: What are your customer's most common questions or concerns about the unexpected and how do you address these issues?

P(C1): Then first, the fundamental importance of communication is timeliness in the case of unforeseen events, our facility provides quick and clear information about what happened, and the status of the goods,

which of course is the biggest concern of the customer, and about restoring regular business. These are the basic points of concern to the customer, who is contacted directly by e-mail or telephone.

P(C2): The information we give as the operations room to the Customer Service which then also conveys to the customers always tries to be as punctual as possible, even giving the list of the trains and then the customers involved. Each customer is notified about the abnormality that has impacted their direct transportation. In cases where the abnormality is more serious, we communicate by saying that there will be abnormalities that have not yet been specified, without going on time precisely because we do not know the timing of the restoration.

I: What are your responsibilities on goods if something happens during transportation?

P(C1): If something unforeseen happens, the post-sales structure intervenes with the reorganization unit at the transshipments which is a unit that intervenes to restore the ordinary conditions, necessary to carry out the transport. For example, in case there is a wagon involved it is 'cut' the wagon removed from the train composition and left in a place where it can then stop, the whole transport is continued. Or a decision is made to take action to have the entire goods moved or to have the goods continued by road if there is a particular urgency or if the time should be long.

I: What if the goods get damaged? How much is your responsibility?

P(C1): Meanwhile, you must understand what the reason for the event is, so what caused the railroad snag. There is insurance that covers the risks that may occur during transport, there are general conditions of transport that all transports refer to and then it depends on the cause and the unexpected.

P(C3): In general, there is a limitation to liability set out in a convention that establishes the uniform rules International Convention for Goods, this limitation of liability refers to the contractual conditions with the customer. Sometimes the liability could be the customer's own in case the goods have not been secured or settled before the train departs. One of the ways to ensure that the goods arrive at the destination intact is the position of the seals, which are affixed by the customer, so if the wagon is closed, we cannot check its contents in the absence of the customer.

I: How do you evaluate the lessons learned from the unforeseen railway to improve your ability to handle future emergency situations and to communicate with customers during such situations?

P(C1): Timeliness of information is key. The structure of after-sales and customer service was born in mid-2018, not that it wasn't there before but it was embryonic, it has evolved strongly over time given the centrality that we attribute to the customer. As we have gradually built on experiences and we have also had an evolution because fundamental is the timeliness, we have a structure that deals with generic communication with customers, precisely because information must be communicated in real-time. After this first generic information comes a second core that is newly established, it is a group of resources that intervene specifically for commodity interventions, and it is a one-to-one relationship with the customer that they normally follow to give more detailed information.

I: What are the priorities in managing the railroad contingency to ensure the best possible service?

P(C1): Timeliness and clarity and priority in handling the unexpected, which may mean making decisions together with the operations room based on the type of goods. They may be perishable goods so there may be a need for expedited intervention than in the conditions of another type of transportation that although in the emergency conditions does not have such a delicate deadline and therefore the intervention is prioritized.

P(C3): About incidents and that is, planning for possible incidents, it is worth dwelling on what are the emergency situations that we usually face. The most serious are those that are classified as accidents (collisions between a train and another train, collisions between a train and an object that is on the railroad track, level crossing accidents...). Then there are deflections, which are when a rail vehicle leaves the track, and can also be the secondary event of a collision. These are the so-called non-own accidents. Then there are the accidents involving people, which are more frequent than you might imagine, mainly because of suicides. When these accidents happen, traffic is stopped not only because trains can no longer run but also because the magistrate must intervene then statements are taken from train drivers and crew.

P(C2): Usually an investment implies a stoppage of at least 3 hours and then if it happens at night you must wait for all the competent authorities to arrive. If the investment, then affects only one track it is not certain that it does not stop the movement on others as well. Then tends to be when there is a release of dangerous substances the competent authorities for that commodity are called, for example, if there is a release of a gas the fire brigade is called, and they have the expertise to intervene to make it safe. We have an agreement with a chemical fider service, and they too can intervene to restore some situations if the customer itself does not intervene. Depending on the goods transported an emergency of one type rather than another is generated, we are obliged to notify the infrastructure manager before departure of the presence of dangerous goods, which are all coded. That way when RFI activates the emergency the fire brigade is informed about the material they will find. So, when a train stops, within 15 minutes you must restart, if it fails RFI has to make sure that the infrastructure is available, so if for example, one locomotive fails you have to have another one step in to restore capacity.

I: We came to the last question, which is about the after-sales customer service area, and that is what are the implications for the company's image following a train accident and how Mercitalia intends to handle these consequences?

P(C1): Something my colleague has already said, our facility is not directly involved. I can take a cue from the derailment that occurred last week in Florence Castle that cut Italy in two. Given that both freight and passenger traffic the railway company involved immediately issued a statement that it was not responsible for the event but nevertheless available for verification of the accident.

I: So now we can move on to the part about the Operations Room and the Industrial Planning Directorate. Many of the questions have already been answered so I'll focus on the missing ones. Let's start with the first one, what is the role of the Industrial Planning Directorate?

P(C2): Actually, as my colleague said earlier more than the industrial planning directorate is the operations room that gets involved in the event itself. Industrial planning that looks more at the long term, 15 days and

up, looks more at those that are incidents that have capacity limitation over weeks. Ponte Morandi in Genoa for example involved rail networks and there the companies in agreement with the infrastructure manager had to plan other alternative routes. The operations room deals with the information to be given to the customer area which then interfaces with the customers, and in what way we do it obviously following our internal structures. For example, in the case of investments, we also provide support to the crew, both in terms of behavior but also moral and psychological support for the shock they have suffered. From an operational point of view, we get involved from the personnel point of view, especially with reference to working hours, because an employee cannot work more than 13 hours by law, and in case of an emergency with a long stop, the 13 hours could be reached. Two aspects are important: employer management of personnel and transportation management (delay and rescheduling).

I: What safety and emergency procedures has the company implemented to prevent unforeseen events and ensure service continuity?

P(C3): In our scale of emergencies obviously we start with accidents, which are the ones we described before, and beyond those, there are fires and special procedures for tunnel accidents that are part of shared procedures with the infrastructure manager, because the tunnel is a place where if a problem occurs it is amplified. In general, all rescue procedures are activated from the workers on board to the infrastructure manager who has a set of scenarios based on which he activates one emergency rather than another, the fact that there are no travelers on board simplifies enough, and the fact that they are carrying freight brings another set of problems from an emergency management point of view. The activities that you do to prevent are what I was saying before, you analyze a priori certain scenarios and when these occur you reanalyze to see how to improve them. We then annually are involved in a joint civil defense exercise plan with Italian railway network to which we express our needs and then on average we do 8 exercises a year, in various scenarios even very complex ones that also involve many operators.

I: While for training, what training and education activities does the company provide to its employees to handle emergency situations and prevent unexpected events?

P(C3): Then to handle emergencies we do a series of trainings, some on first aid, so the train crew is ready for first type medical rescue, the minimum operations, put you in a safe position, they are trained on activating the emergency, on securing the train, which after a certain time has passed you don't brake with your timing anymore, so it has to be secured by thinking about the devices that are needed to prevent the train from moving.

I: How do you collaborate with other functional areas, such as train maintenance, personnel management, to deal with unexpected train?

P(C2): There is continuous communication between our team and the customer service team, which tells us the priority of trains in case of disruption.

I: Now we come to the last question, in an unusual situation that has never occurred before, have you ever had to decide without having to follow a specific protocol?

P(C3): When I give the seminar to the instructors sometimes, I talk about some topics, one of them is the difference between role-based safety, that is the one that is based on the application of standards and safety instead left completely to the experience of the individual also giving examples. We try to find the right medium, we have many documents that regulate standards, more frequent behaviors, and situations, but a lot is based on the training path, continuous, so that employees can be able to handle unforeseen situations. You give people procedures but then situations are sudden and so it is up to the individual, his ability to act, his experience, and training.

I: Perfect, thank you the interview is over I gathered all the information I needed.

P(C1): Great Arianna for us it was a pleasure to help you.

I: Thank you very much for your helpfulness and accuracy. I wish you a good day.

P(C1,2,3): Our pleasure to you. And good luck with your graduation.

I: Thank you so much!

ANNEX 2: Consent Form

● I .... voluntarily consent to participate in this research project.

● understands that by giving consent now, he/she has the option of withdrawing within three days or refusing to answer any questions without any consequences

● understands that his permission can be withdrawn and dispose of the interview data within two weeks after the interview, in which case the content will be deleted

● confirms that the purpose and nature of the project has been fully explained and any questions about it clarified

● understands that participation in the project includes answering questions on business improvisation and organizational resilience

● understands that he/she will have no monetary benefit from participation in this research project

● agrees to the audio recording of the interview for the sole purpose of this research project

● understands that all information provided for this research project will be treated with strict confidentiality

● understands that by signing this formative consent and the audio recording will be retained exclusively by graduate student Arianna Aurigemma at LUISS University within five days after the interview

● understands that a transcript of the interview in which all identifying information has been removed will be kept for the duration of the project

● understands that he/she is free to contact the researcher at any time to request further details and information. Name, degree course, affiliations, and contact details of the researcher:

Signature of participant
 Date:

Signature of researcher
Date:

ANNEX 3: Semi-Structured Interview Guide

1.Research Question

I am grateful for your consent to participate in this interview for the following research project. I am a graduate student in the Master in Global Management and Politics at LUISS University and I am conducting this interview to deepen my understanding of how the organizational structure of a company changes after a train accident and how work is reorganized in a resilient phase. Therefore, there are no correct answers to any of my questions, I am genuinely interested in your experiences, stories, and anecdotes. I truly believe in your contribution to research and, therefore, I fully respect your willingness to participate or not in this interview. Regardless of your decision, you will continue to receive care from me. The interview should last about twenty-five minutes, considering how much information and qualitative data you would like to share. I kindly ask your permission to record the interview, if possible, to avoid missing any of your relevant comments. All content of the interview will be kept confidential and used for the sole purpose of this research project. This means that your de-identified responses to the interview will only be shared for the purpose of this research, and I will ensure that any information included in our report does not identify you as an interviewee. I kindly ask you to share, in complete confidentiality, any internal documentation regarding management and security protocols to facilitate the interview. You may refuse to answer any questions or stop the interview at any time and for any reason you deem relevant. If there are any other doubts, or if you want some clarification on the research, please do not hesitate to ask questions before starting. Regarding the purpose of this interview, I believe that an authoritative, recognized, and generally respectable definition of what constitutes Corporate Improvisation and Organizational Resilience is needed. I subscribe to the following definition of Corporate Improvisation and Organizational Resilience as derived from the literature:

Corporate Improvisation refers to the ability of an organization to adapt quickly and flexibly to unforeseen challenges and opportunities that arise during daily operations. In other words, corporate improvisation is the ability of an organization to react to unforeseen situations creatively and with immediate solutions. ("The Improvising Organization: Where Planning Meets Opportunity" by Rob Cross and Robert Thomas, Harvard Business Review,2011)

Organizational Resilience refers to the ability of an organization to withstand shocks and disruptions while maintaining the continuity of its core activities. Organizational Resilience can be seen as a set of skills and resources that enable the organization to face and overcome obstacles and challenges. ("The Role of organizational resilience in ensuring mission success" by Jennifer Hesterman, International Journal of Emergency Management,2013)

For this research project, I emphasize the resilience aspect of the company for post-trauma recovery and business continuation.

1. Information and communication

a. What is the role of the Industrial Planning Department?

b. What are the most frequent forms of the nature of the railway contingency?

c. How is internal and external communication managed in the event of rail emergencies or accidents?

d. What safety protocols do you follow in the event of an emergency?

e. What procedures do you follow to ensure business continuity in the event of disruptions to rail services?

2. Prevention

a. What safety and emergency procedures has the company implemented to prevent unforeseen events and ensure service continuity?

b. What are the monitoring and control systems used by the company to prevent and detect unforeseen events on board the train?

c. What technologies are used by the company for train and passenger safety, such as the automatic emergency braking system?

d. What are the skills and responsibilities of the company's employees in case of unexpected events and how is preparedness ensured?

3. Training

a. What training and instruction does the company provide its employees to manage emergencies and prevent unforeseen events?

b. What risk analyses has the company carried out to identify possible emergency situations and prevent unforeseen events on its trains?

c. What are the information management procedures adopted by the company to communicate with passengers and the competent authorities in the event of a sudden event?

d. What are the systems used by the company to record train activity, such as black boxes, to collect useful information in the event of unforeseen events?

4. Relationship with other colleagues

a. How do you collaborate with other functional areas, such as train maintenance, and personnel management, to deal with unexpected train?

b. What is the role of the industrial planning area during a railway contingency and how does it integrate with other departments?

c. What are the internal procedures you follow to ensure effective collaboration between the different functional areas during a railway contingency?

d. What lessons have you learned from previous railway disruption situations that have helped you to improve collaboration between the different functional areas?

f. In an unusual situation, which you have never experienced before, have you ever had to decide without having to follow a specific protocol? Were you a Democratic or an Authoritarian leader?

2. Research Question

I am grateful for your consent to participate in this interview for the following research project. I am a graduate student in the Master in Global Management and Politics at LUISS University and I am conducting this interview to deepen my understanding of how the organizational structure of a company changes after a train accident and how work is reorganized in a resilient phase. Therefore, there are no correct answers to any of my questions, I am genuinely interested in your experiences, stories, and anecdotes. I truly believe in your contribution to research and, therefore, I fully respect your willingness to participate or not in this interview. Regardless of your decision, you will continue to receive care from me. The interview should last about twenty-five minutes, considering how much information and qualitative data you would like to share. I kindly ask your permission to record the interview, if possible, to avoid missing any of your relevant comments. All content of the interview will be kept confidential and used for the sole purpose of this research project. This means that your de-identified responses to the interview will only be shared for the purpose of this research, and I will ensure that any information included in our report does not identify you as an interviewee. I kindly ask you to share, in complete confidentiality, any internal documentation regarding management and security protocols to facilitate the interview. You may refuse to answer any questions or stop the interview at any time and for any reason you deem relevant. If there are any other doubts, or if you want some clarification on the research, please do not hesitate to ask questions before starting. Regarding the purpose of this interview, I believe that an authoritative, recognized, and generally respectable definition of what constitutes Corporate Improvisation and Organizational Resilience is needed. I subscribe to the following definition of Corporate Improvisation and Organizational Resilience as derived from the literature:

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organizational Resilience refers to the ability of an organization to withstand shocks and disruptions while maintaining the continuity of its core activities. Organizational Resilience can be seen as a set of skills and resources that enable the organization to face and overcome obstacles and challenges. ("The Role of organizational resilience in ensuring mission success" by Jennifer Hesterman, International Journal of Emergency Management, 2013)

For this research project, I emphasize the resilience aspect of the company for post-trauma recovery and business continuation.

1. Information and Communication

a. What information do you provide to customers about the railway disruption?

b. What measures do you take to ensure the safety of your passengers during the rail incident?

c. What are your customers' most common questions or concerns regarding the unexpected and how do you address these issues?

d. What are the economic consequences of the rail contingency on your business and how are you mitigating these consequences to ensure the sustainability of your business?

2. Consequences

a. What are the consequences of the unexpected train disruption on passenger travel planning and how are you managing them?

b. What options are available to customers to change or cancel their planned journeys during the rail disruption?

c. What compensation options are you offering to customers affected by the train disruption, e.g., discount vouchers or full refunds?

d. How do you evaluate the lessons learned from the train disruption to improve your ability to handle future emergency situations and to communicate with customers during such situations?

3. Alternative solutions

a. What are the possible transport alternatives you offer to passengers affected by the train disruption?

b. What are your priorities in managing the railway disruption to ensure the best possible service to customers?

4. Perceived external prestige

a. What are the implications for the company's image following a railway accident and how does the firm intend to manage these consequences?

b. What are the strategies adopted by the company to communicate transparently and honestly with its customers after a train accident?

c. What communication channels does the company use to keep its customers informed about the progress of the investigation and the actions taken to deal with the consequences of the train accident?

Executive Summary

Introduction

Resiliere of human system [is] the capacity of a system to absorb human/natural shocks or disturbances or reorganize while undergoing change that either retains, or develops further, essentials functions, structures, identities, and feedback that characterize the system.'[31]

Improvisation is a natural human activity, the result of intellect in unexpected situations, and a means of coping with resource limitations. It is driven by the urge to get beyond a block, problem, inconvenience, or constraint. Although improvisational innovations might benefit society, they can also have unintended consequences. This is especially true when improvised settings are present, such as risky or uncharted territory at work. To fulfill their missions and deploy their core functions, organizations must find and implement organizational macro and microstructures quickly and timely, in a way that enables them to transform jolts and shocks into new solutions and possibilities. Organizations that survive and thrive in the context of a risky society develop this ability. The word "resilience" is derived from the Latin word "resilire," which means to rebound. According to Dictionary, "resilience" is the capacity of an individual or entity to bounce back swiftly after adversity (such as a hit, injury, etc.), or the capacity of a thing to bounce back after being bent, stretched, or pressed. Improvising is having to deal with something that hasn't been planned, and when it's done by the business, it's referred to as business improvisation. Contrarily, when it comes to the individual level, improvisation occurs when each person works to adopt solutions that are appropriate for the current challenge, changing the routine in the process. Resilience, in a nutshell, denotes the capacity for constructive adaptation, awareness of one's limitations and flaws, process reorganization to avoid cognitive pitfalls and skewed team dynamics, and departure from established patterns in a dynamic manifestation of adaptability to adversity. Positive adaptation results cannot be predicted or planned but instead must show. The development and improvement of this talent are prerequisites for teams to act impromptu in the face of problems because improvisation is frequently viewed as hazardous. Organizations should delegate decision-making authority to groups. In this study, the meaning of resilience focused on the company's ability to respond to the various emergency and risk situations that arise, to adapt the various situations and scenarios, and to recompose the starting scenario related to the railway industry. In this context, the concept of corporate resilience and improvisation arises. The purpose of this thesis was to investigate the relationship between corporate improvisation in times of rail disruption, as a challenge to overcome and a possible shock if mismanaged, and organizational resilience. To achieve this purpose, I chose to interview the main rail transport operators in Italy, Italo, Trenitalia and Mercitalia. Business improvisation is an unplanned, 'in-the-moment' phenomenon

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[31] Wilson,G.A.(2018)'Constructive tensions'in resilience research:Critical reflections from a human geography perspective.Geographical Journal

that aims to explain how managers solve atypical problems and/or generate wealth from unplanned possibilities. This mechanism is not based on an established routine and is neither predetermined nor defined. According to the principle of irremovability, managers act by making whole new choices and behaviors. Managers must remember the details from past projects from memory while drawing hasty choices. Organizational resilience involves a multidimensional process that includes preparation, response, and recovery from adverse events. According to Hollnagel et al., resilience is the ability to cope with complex and unexpected events by adapting and learning from them. It is not a static state, but a dynamic process that requires continuous learning and adaptation. Therefore, resilience is not just about bouncing back to the pre-disaster state but also about learning and improving from the experience to enhance the organization's ability to withstand future challenges. For instance, learned details from the past of a corporation in a different industry that may be used in the current emergency. The ability of improvisation integrates and constructively uses previously acquired patterns while drawing variety and originality from experience. [32] To conclude this part of the discussion a strong memory plays a critical role in the resilient phase because it enhances improvisation, increasing the ability to improve decision making and situational awareness.

Literature Review

The second chapter of this thesis is devoted to addressing the literature on the other macro-topics of this discussion, including corporate resilience and how managers handle improvisation and disruptions. Resilience affects both behavior and performance positively, making it one of the four positive psychological resources that make up an employee's emotional capital when considered at the micro level. [33]At the same time, it creates a distinctive combination of cognitive, behavioral, and environmental characteristics at the micro level that improves a company's capacity to comprehend its current position and create tailored answers that reflect that knowledge. Organizational resilience refers to an organization's ability to adapt and respond to unexpected disruptions effectively. This includes not only reacting to events but also preparing for them in advance. Resilience involves developing strategies and plans that can help an organization withstand various shocks and disturbances. In the context of the railway industry, organizational resilience is essential due to the numerous risks and uncertainties associated with rail operations. For example, railway organizations must be prepared to handle natural disasters such as floods, earthquakes, and storms. They must also be ready to respond to human errors, such as derailments and collisions. Several factors contribute to organizational resilience in the railway industry. These include:

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[32]*Learning how to restructure: Absorptive Capacity and improvisational ...* (n.d.). Retrieved February 22, 2023, from https://www.jstor.org/stable/pdf/20142043.pdf

[33] Luthans,F.and Youseff,C.(2004). Human, social, and now positive psychological capital management: Investing in people for competitive advantage. Organizational Dynamics.;
Luthans,F.and Youseff,CM.(2007).Emerging positive organizational behavior. Journal of Management.;
Avey, J. B, Reichard, R.J., Luthans,F.and Mhatre,K.H.(2011).Metanalysis of the impact of positive psychological capital on employee attitudes, behaviors, and performance. Human Resource Development Quarterly.

1. Redundancy: Railway organizations must have backup systems and processes in place to ensure continuity of operations in case of failures or disruptions. For example, having multiple routes and lines that can be used in case of disruptions or delays.

2. Flexibility: Railway organizations must be flexible and adaptable in their operations. They must be able to adjust quickly to changing circumstances and respond to unexpected events.

3. Communication: Effective communication is crucial for organizational resilience. Railway organizations must have clear communication channels in place to ensure that information is shared quickly and efficiently across the organization.

4. Training and Education: Railway organizations must invest in training and education programs to ensure that their employees are prepared to handle unexpected events. This includes training on emergency response procedures and safety protocols.

The organization gains the ability to move quickly and to prioritize openness and co-satisfaction over standard operating procedures by developing enabling structures and cultures of innovation. Following a railroad catastrophe, the railroad companies immediately activated an emergency response plan to manage the situation. The emergency plan calls for the activation of a crisis management team, whose job it is to coordinate the company's response to the catastrophe. The crisis management team is made up of representatives from many company departments, such as security, maintenance, human resources, public relations, pedestrian assistance, and other departments as well. The crisis management team is responsible for organizing emergency operations, providing timely and accurate information about the incident's causes, and managing communications with appropriate authorities, the media, and bystanders. The security team's focus is on determining the incident's root causes and pinpointing the preventative measures to take. The maintenance crew is responsible for estimating the damage caused by the incident and organizing the activities of replacement and restoration of the affected infrastructure and vehicles. The staff is responsible for managing activities that aid travelers, such as logistical assistance, reservations, and other services. The public relations team is responsible for managing communication with the media and the public by providing timely, accurate information on the incident, its causes, and the company's internal actions to prevent a repeat. The passenger assistance team is responsible for providing logistical help to passengers involved in the event, such as assistance with alternative transportation, lodging arrangements, the provision of pastries, and more. In general, each team works closely with the other teams to coordinate emergency response efforts and manage the situation as effectively as possible. The primary goals of the company are to ensure the safety of patrons and employees, reduce damage caused by accidents, and restart the rail service as quickly as possible.[34] As I've explained in the preceding paragraphs, improvisation includes Scholars occasionally emphasizing various features of improvisation, but the formal definition of this process at its most basic level includes three conceptual components. Extemporaneity, the production of some degree of original activity, novelty, and the

deliberateness of the design that is formed during its enactment is a few of these (intentionality). [35]Also, according to this definition, improvisation is a specific category of unplanned behavior that avoids random change since it incorporates a new conscious design. Hence, not all improvised behavior is unintentional. Working with an improvisational reference, which may be an earlier form of an action pattern or earlier plan, is a common part of the process. According to the definition, improvisation is a particular kind of inventiveness. Yet not all innovation activity is improvised because the substance of innovation can be scheduled in advance.[36]It's possible that improvisation can make up for failure prediction such that focus, or a reaction secures success rather than failure. The failure of the adaption process might also result from improvisation. The reductionist approach may be used to resolve this issue.

- *Improvisation in Adaptation* necessitates the existence of a court document, encouragement of originality and inventiveness, and resistance to simplification. Individuals need to be socialized to reduce their presumptions, pay close attention more, and disregard less.[37]

- *Improvisation in Attention* suggests having a wide range of signal interpretation capabilities and increased input sensitivity. Moreover, it suggests that individuals who are asked to improvise are not "technologically locked in" to what Hollnagel and Woods refer to as a hermeneutic connection, in which technology imposes a predetermined meaning.

- *Improvisation in Response* suggests having the capacity to "think in motion," or to develop new paradigms of expectancy and focus quickly.[38]

[35] "Railway Safety Principles and Guidance" dell'Agenzia dell'Unione Europea per le Ferrovie;

[35]Cunha, M.P., Cunha, J.V. & Kamoche, K. (1999). Organizational improvisation: What, when, how and why. *International Journal of Management Reviews*;

Miner, A., Bassoff, P. & Moorman, C. (2001). Organizational improvisation and learning: A field study. *Administrative Science Quarterly*;

[36] Moorman, C., & Miner, A. (1998b). Organizational improvisation and organizational memory. *Academy of Management Review;*

[37] Weick, K.E. and K. M. Sutcliffe (2007). Managing the Unexpected. Resilient Performance in an Age of Uncertainty. 2nd Ed. Jossey Bass Wiley;

[38] T.O.Grotan, F. Storseth, M.H. Ro, a.b. Skjerve, Resileience, Adaptation an Improvisation - Increasing Resilience by Organising for Successful Improvisation. 3rd Sympoium on Resileince Engineering Antibes, Juan-Les-Pins, October 2008;

Corporate Improvisation Dimension	Definitions
Extemporaneity	a confluence of efficiency and aesthetics.
Novelty	the execution of some sort of inventive activity.
Intentionality	the development's aim at the time of its emission.
Improvisational referent	a previous iteration of practice or goal, or an internal or external benchmark.

Table 1. **Corporate Improvisation Structure**

Research questions

I decided to conduct qualitative research involving Italo, Trenitalia and Mercitalia, the Italian rail transport companies, the former two are involved in transporting people while the latter is involved in transporting freight. The objective of the study was to understand how a railway company reorganizes its organizational structure and, work, after a disruption and how it implements corporate improvisation as a reaction to change. To achieve this goal, I organized the research essentially around two research questions:

1) *How does organizational asset change in an emergency situation? And how does the company manage the resiliency phase?*
2) *How does the firm's external perception change?*

In the preceding paragraphs, on the one hand, I defined resilience as an organization's ability to anticipate; on the other hand, Improvisation was defined as the ability to adapt to environmental changes continuously when challenges occur, without planning and with few resources. Organizational processes focused on anticipating environmental changes are essential to help businesses respond to environmental shocks. Organizational resilience determines the evolution of an organization's success and the success of its entrepreneurs, who acquire knowledge, skills, and abilities to use in the future by relying on their own resources. So, the objective of the first question was to define how the company prepares to respond promptly to an unexpected change in order to survive and overcome it, not only to mitigate a risk but also to achieve success.

The second research question, on the other hand, aims to analyze what happens following a train accident, focusing on perceived external prestige. At the legal level, the company may be subject to investigation and scrutiny by the relevant authorities. Passengers or their families could also take legal action to obtain compensation for physical or property damage suffered during the accident. On an economic level, the accident could have a significant impact on the company's financial performance. It may be necessary to invest in infrastructure repair and the purchase of new trains or spare parts. The company's image could also be damaged, with a possible drop in passenger numbers and turnover. To minimize the negative effects of the accident, the company should take measures to improve the safety and quality of its services. It may need to increase the frequency of train and infrastructure maintenance, adopt new technologies for accident prevention,

and improve staff training. In general, after a train accident, the company faces several challenges to restore passenger and investor confidence and ensure the safety of its services. In addition, after a train accident, the company needs to communicate in a transparent and timely manner with passengers and the public. This commitment by companies could involve issuing press releases, holding press conferences, disseminating information on social media, and opening dedicated phone lines to provide updates on the investigation and situation of passengers involved in the accident. The company should also consider whether it is necessary to change its safety management system, such as reviewing maintenance procedures or strengthening staff training. It may also need to review its train and infrastructure monitoring system to detect problems before accidents occur. Finally, the company may need to collaborate with other rail companies and authorities to share information and best practices on rail safety. This might involve participating in working groups or discussion forums, holding meetings, and sharing safety reports. In summary, after a rail accident, the company needs to take various measures to manage the consequences of the accident, restore passenger and investor confidence, and ensure the safety of its services. This requires ongoing efforts by the company to improve the safety and quality of its services and to communicate transparently with the public.

Methodology

Since the purpose of this research was to understand the significance of organizational resilience in the context of rail transportation for firms, I chose the qualitative research method for a variety of reasons that will be discussed later. The surrounding environment acts as the data source for qualitative research qualitative analysis. The researcher strives to observe, describe, and evaluate circumstances as they emerge while attempting to retain "emphatic neutrality." Furthermore, it is interpretive in nature, therefore the researcher's goal is to discover and interpret the significance of events for the people who experienced them as well as to interpret them. My research goal is to understand the logic behind the company's decisions regarding the organization of the company's work to prepare for the challenge of unexpected occurrence and maybe build organizational resilience through the new work organization. It is vital for me to understand the respondents' reasons.

The report was the starting point for my research, and it was used to formulate interview questions as clearly as possible. I've received seven interviews. I contacted the interviewees via email and, after receiving their availability to be interviewed, I sent them an additional email, submitting a document with a research presentation and all pertinent information, as well as a consent form informing them of the interview with my contact information (phone number and institutional e-mail address).

A series of questions were posed to those interviewed to learn as much as possible about the organization of the company after a disruption and how the perception of it changes after an unexpected event. Even though in the early stages of the project, a criterion for selecting candidates based on their availability (convenience coaching) was used, I decided to use a targeted coaching method during the project's development. Because I was certain that, to obtain the most accurate and informative data on the various approaches to resilience and

improvement in Italy, Trenitalia, and Mercitalia, I would have needed to interview the same number of people from each of the three sections. It was not necessary to interview specific employees for the study because the participants had a range of responsibilities. This choice was chosen to have a deeper comprehension of the various business divisions. The jobs held were management or executive roles. The selection criteria used were basically three to bring forth the desired distinct perspectives. The respondents were questioned about the procedures in the case of unanticipated train accidents and breakdowns, the effect on the regular flow of business, their relationships with other coworkers, and their perceptions of their external prestige. I used a planned interview process. Prior to conducting the actual interviews on the scheduled date, all interviewees were mailed both the informed consent (appendix 2), to obtain their agreement to record their answers and avoid any breach of confidentiality clauses about their identity when transcribing, and the interview topic guide (appendix 3), to familiarize them with the research team and the subjects we would later discuss. The interview was broken into four macro-topics, each of which had between five and six questions. I also adapted the guides according to the companies I interviewed. For Trenitalia and Italo, the topic guides were the same, while for Mercitalia, the questions were readjusted where passengers were concerned.

Data analysis

The data analysis was divided into three parts, each of which was completed using the NVivo data quality analysis software. My approach to coding has evolved primarily in three stages: first-order constraints (open coding) which I have used in interviews, second-order constraints (axial coding), and third-order constraints (selective coding). The intensive data investigation begins with the first-order code of all interviews. To be extremely precise and selective, the open code is based on 125 codes, which have ensured the code's accuracy and consistency. In the event of a conflict, the additions are frequently considered. In detail, the three areas identified during the selective codification phase are: "Emergency procedures"; "Different unforeseen events" and "Business culture".

n	Name	Files	Ref.	n	Name	Files	Ref.	n	Name	Files	Ref.
1	Emergency procedures	1	6	36	Transport conditions	1	2	71	Procedures to prevent	1	1
2	Different unforeseen events	1	7	37	Customer service	1	1	72	Precautions of goods	1	1
3	Business culture	1	6	38	Relationship with clients	1	1	73	Position of sales	1	1
4	The panels share the message	1	1	39	External Relation communicates with clients	1	3	74	Forms of railway accidents	1	1
5	Divisions involved in emergency	1	2	40	Customer report	1	3	75	Ways to restart the vehicle	1	1
6	Procedures and rulers	1	1	41	Customer base	1	3	76	Time of restoring	1	1
7	Planning and monitoring	1	1	42	Contact by telephone or email	1	3	77	Strike	1	2
8	Focus on quality and timing	1	2	43	Alternative solutions	1	2	78	Report for monitoring	1	2
9	Rule of Pianification Direction	1	1	44	Call the call center	1	1	79	Travel experience	1	1
10	Role of Operations Room	1	1	45	Ask for compensation	1	1	80	SCMT system	1	1
11	RFI and Industrial Plannification	1	2	46	Communication with clients	1	4	81	Index that measures experiences	1	2
12	Difference between Industrial Planning and Operations Room	1	3	47	Customers notified regard the abnormality	1	1	82	Different cases	1	2
13	Industrial Plannification and customer communication	1	1	48	Communication skills	1	1	83	Cases when the equipment cannot move from the accidental point	1	2
14	Information communication	1	2	49	Code for communicate	1	1	84	Case where the doors do not lock	1	1
15	Internal and External communication	1	2	50	24-hour Operations Room	1	4	85	Delay	1	1
16	Accuracy in information	1	6	51	Procedures and Rules	1	1	86	Delay due to RFI	1	1
17	ALSTOM Role	1	1	52	Regularity	1	3	87	Delay and reschedule	1	1
18	ALSTOM as a reference for the instructor	1	1	53	Priority managing railroad	1	5	88	Deflection	1	1
19	Role of the Operations Room	1	2	54	Define regularity	1	5	89	Damage Responsibility	1	3
20	Industrial Plannification trasversal with other areas	1	2	55	Punctuality	1	3	90	Four macro causes	1	1
21	Gestore delle Infrastrutture	1	2	56	National Railway Agent	1	1	91	Someone's fault	1	1
22	Firm components	1	1	57	Worst cases	1	1	92	Lack of maintenance	1	2
23	Internal collaboration with different divisions	1	2	58	Technologies use for passengers' safety	1	1	93	Human error	1	2
24	Committee with directions of all dimensions	1	2	59	SGS does the risk analysis	1	1	94	RFI causes	1	1
25	Figure of technical and training manager, responsible for instructors	1	1	60	Periodic meeting	1	1	95	RFI deficiencies	1	1
26	Driver preparation	1	2	61	Define punctuality	1	1	96	External causes	1	3
27	Instructrs as a reference for the driver	1	2	62	Transfer to another train	1	3	97	Other factors not attributed to the single ferrovial company	1	2
28	GDA manual as a reference for the driver	1	3	63	Stoppage on the line	1	1	98	Collision	1	2
29	Master behaves on board	1	3	64	Stop event	1	1	99	Accident	1	2
30	Emergency Simulations	1	3	65	Self-substitution part	1	1	100	Business culture	1	6
31	Training	1	2	66	Routable that stops in line	1	1	101	Staff and Line BUs	1	1
32	Depannage driving	1	3	67	Limitation to liability	1	1	102	Lean Organizational structure	1	1
33	Driver behaviour	1	3	68	No passengers on board	1	1	103	Vertical Business Unit	1	2
34	Driver behaves in event of sickness or stoppage	1	1	69	Ruler with the provider	1	1	104	Start-up culture	1	2
35	Driver and his vehicle	1	1	70	International Convention of Goods	1	1	105	Internalize the supplier	1	1

n	Name	Files	Ref.
106	Continuous exchange	1	1
107	About leadership	1	1
108	Role of resources	1	1
104	Role of protocols	1	2
110	Opinions from boss and colleagues	1	1
111	Make a choice	1	1
112	Guideline protocols	1	2
113	Employee management	1	1
114	Employee autonomy	1	1
115	Decision-making process	1	1
116	Covered system	1	1
117	Complex procedures	1	1
118	ANSFISA regulation	1	1
119	Continuous monitoring	1	2
120	Colleagues checking	1	1
121	Brand loyalty	1	1
122	Reputation	1	1
123	Frequency using services	1	1
124	Company image	1	2
125	Change of image	1	2

Table 5: Detailing final open coding with number of files and references.

The first contains all the coded information related to the various emergency procedures, such as how divisions collaborate with one another, who the figures are who intervene if the emergency needs to be verified, and finally, the procedures and rules to keep in mind in the event of an unexpected event. The second includes all the coded information related to the many emergency scenarios, the various types of events that can be observed, how to monitor and control dangerous situations, and how the situation changes if passengers are transported instead. Finally, the third group contains workers' reactions to structural changes, such as agility or circumstances, the importance of having a streamlined organization, and how to change the brand's image after a potentially hazardous occurrence. Throughout the coding process, every effort was taken to ensure internal consistency: I endeavored to categorize the respondents' primary statements while including the various perceived moods without misrepresenting their significance.

Findings

Once the data analysis procedure was completed, the results from the interviews could be unified and processed. The interviews were then classified and contextualized using open codes, axial codes, and selective codes. The purpose of my research has always been to investigate how the organizational structure of firms changes in the aftermath of a train emergency, so the principles chosen by enterprises clearly appeared, as did the many figures involved, and lastly, the consumer figure was also investigated.

(I)Emergency procedures

In the preliminary stage, I attempted to respond to the research question, i.e. 'How would the company organizational assets change as a result of a rail accident'. To achieve this, I was interested in the primary emergency processes and how the panels communicate emergency information. So, I asked the interviewees about the company's protocols and which divisions are involved in these circumstances. I thought that it was vital to identify the firm components and the procedures and rules to better comprehend this topic. As a result, I've examined in detail the roles of the most important figures involved, and it's clear that a key role is assigned to the figures of Planification Industry and Operations Room, which are accorpated in Italo, but Trenitalia and Mercitalia have two distinct sections. Particularly noteworthy is the fact that these divisions provide an essential link between Rete Ferroviaria Italiana and passengers. Indeed, their task is to provide precise and timely with respect to delays and anomalies, as well as to mobilize the necessary structures around the resolution of these.

Another important role when an anomaly occurs is that of the train driver. The latter for troubleshooting is supported by on-board staff, instructors, and can consult the GDA manual. But regardless of these auxiliaries' figures, it became clear how essential prior experience in emergency cases is, and how important are the simulations and drills that companies organize to prepare drivers for any unexpected incidents. Trenitalia staff brought me depannage driving as an example of simulation. The Rete Ferroviaria Italiana also plays an important role when an abnormality occurs. The Operations Room contacts the latter as soon as the anomaly occurred. And RFI is the only one in charge of contacting outside authorities if an unexpected occurrence

occurs that necessitates their intervention. For example, in the event of an emergency on board a train, if a Polfer, police guarding stations, and escorting trains, intervention is required, it is the train conductor who notifies RFI, who then notifies the authorities. And again, when a train derails or two trains collide is RFI who contacts the authorities. (Axial code Role of Operations Room, selective code RFI notifies authorities). During coding, it became apparent that also Customer Service has a complex role because it also deals with handling customers during the contingency phase. In fact, their task is first to alert passengers about the anomaly and then offer alternative solutions to cope with the inconvenience caused to them. For example, the interviews showed that the proposed solutions are to offer them a rescheduled trip, provide a refund or voucher, take them back to their departure destination, book a night in a hotel, and offer them alternative transportation. So, it emerged how much this department needs to be equipped with communication skills. (Axial code Relationship with clients).

(II)Different unforeseen events

During the coding and processing of the interview results, a new theme emerged during my investigation: railroad contingencies. The most diverse emerged, which can be a delay, a collision, a strike, a deflection, and the most serious an accident, which occurs when deaths or people are injured. From these, I analyzed the responsibility for damage that can be attributed to individuals, external causes, lack of monitoring and controls, or RFI failures. Following a series of damaging events, it has become clear how crucial monitoring and prevention are. Indeed, firms use reporting systems to monitor past events and learn from them to better prepare for future events. Also significant are registration systems, such as red scatole, which allow for the identification of the speed of the vehicle, the route, and other specifics. Among the three companies I analyzed, it should be specified that Italo and Trenitalia carry passengers while Mercitalia carries only freight. Under the axial code No passengers on board I have enclosed all other goods-related selective codes. Carrying freight instead of passengers, as stated during the interview with Mercitalia staff, might yes carry fewer risks on the one hand, but on the other, it carries other dangers.

In the freight company, the customer is always the shipper of the material and whenever the anomaly occurs it is he who Mercitalia must call. The restart of operations following the anomaly works differently than the normal process for passenger companies.

(III)Business Culture

Throughout my investigation, a new issue developed during the data analysis and processing of the interview results - the topic of business culture. This topic has become so important that it came up several times throughout the interview encoding. As a result, once the data was gathered, I chose to categorize it under a specific code: Business culture. I was interested in discovering how is the business organizational chart formatted and how the divisions communicated internally with the other departments involved, as well as their perception of their level of responsibility (refer to the axial About Leadership code) and how a lean structure may be a driver for better work. for better work (refer to the axial code Lean Organizational Structure). To better understand this discussion, all participants agreed that it was necessary to highlight the major structural

differences between Trenitalia and Italo. In fact, while the first appears to have a stricter organization in most of its divisions, the second appears to be much "leaner" from a hierarchical standpoint. Despite their differences, all of those interviewed agreed that there are forms of hierarchy in every situation, even if it is critical that this hierarchy, particularly in Trenitalia, be viewed as rules and guidelines, rather than as mandates imposed from on high.

This characteristic, which emerges within Italo, does not emerge in the same way as the interviews with Trenitalia. In fact, the interviewees from Trenitalia have described a more rigorous and complex system that is also divided. The firm is made up of many industrial planning areas depending on whether the train is Regional or Freccia. The system is made up of 16 operational areas that are divided on a regional scale. Regardless, the Italo group is organized in a more flexible manner, whilst the second is composed of a much more complex organizational structure.

This important aspect concerns the Staff and Business Units and has been updated within the axial code Lean Organizational Structure code. Even though the three models have certain differences, the respondents highlighted the relevant peculiarities between the organizations, Italia, Trenitalia, and Mercitalia, which have been accumulated in the decision-making process. During the interviews, they emphasized the importance of their autonomy in making decisions. The firms allow their employees to be free and autonomous in the decision-making process in an emergency, and it is expected of them to adhere to the protocols and guidelines that provide guidance on how to proceed with the decision-making process.

In the secondary stage, I attempted to respond to the second research question, i.e. 'How the external perception of the customers of the company changes after an unpleasant event. 'To respond to this question another code within Business Culture has been established, which is Brand Loyalty. This decision was influenced by the fact that the company's culture plays an important role in terms of image and the trust that customers have in the company. Much depends on the company's reputation and the frequency with which its customers travel. However, it appears that brand fidelity is part of a long-term relationship built over time between the company and the customer and that if the company does its best to manage the foreseen event, for example, by doing accurate and specific communication and easy and speedy refunding work, the customer will remain loyal to that company.

Implications for future research and Conclusion

My research adds to the existing literature on business improvisation, organizational resilience, and the brand image of firms after a disruption. Furthermore, a debate will be held on how workers might collaborate and coordinate to solve an emerging problem in a relatively unstudied but highly active industry in terms of innovation and change, the transportation sector. With this goal in mind, the results of my research could help to prepare the way for future studies on resilience and business improvement in the transportation sector. Furthermore, my research could have implications for these businesses in terms of (I) changing the organizational structure of the company, (II) repositioning the brand after an uncomfortable situation and (III)

improving communication with customers and passengers by providing the best possible support. The railway industry's employees were thoroughly interviewed, allowing for a better understanding of their perceptions of the company, as well as the practices and procedures used to deal with emerging issues and structural and communication models. This is an encouraging sign that the various opinions, practices, and communication strategies may be useful for businesses vying to organize their operations as efficiently as possible during an unplanned event, to maintain their shared sense of commitment to avoid losing customers or creating dissatisfaction with the company. What I am symbolically leaving as a legacy of my paper is the fact that I have constructed the foundation for a project, the conclusion of which I am writing today, but which is only a portion of the project. The difficulties presented by the interviewees and studied by me show that the survey is not only exceedingly complicated but also a very dynamic and ever-changing topic. Finally, my purpose is to offer myself as witness to the change that is taking place, and I am confident that there will be numerous disparities with the past and unavoidable repercussions. They will surely merit in-depth investigation to comprehend the mechanisms and anticipate their eventual evolution.

The current project investigated how a railroad problem affects the company's organizational structure and its various configurations. Another important component of the project was determining how these various anomalies affect the brand image and whether they change customers' impressions of the organization.The findings of this study helped me better understand how disruption management works and the internal changes that businesses make to improve resilience and resolution. The goal is to improve overall company performance and please consumers while causing them as little harm as possible in uncomfortable situations. The goal that I set for myself was to figure out how to change the company's organizational assets after an unexpected catastrophe. I chose to examine in detail three companies involved in rail transportation because this topic is underrepresented in the context of this industry.My curiosity was to learn which figures were the most involved and how the various divisions divided the work, managed the unexpected, and communicated with one another. The second goal I set for myself was to understand how disruption and its management may affect customer perception of the brand, as well as how disruption and its management could affect customer loyalty. While doing the research with rigor and reflexivity, I became aware of various limits of my study, which I bring to the reader's attention.First and foremost, the existing literature on organizational resilience has examined these elements in organizations operating in a variety of industries, with little emphasis on the railway industry, which is the focus of my research. Conciliating the current results of literature and my research has been difficult for this reason, but it required a high level of honesty and critical thinking.Despite my initial reservations, I was convinced that the discoveries and insights on the issue are applicable in a variety of contexts and could be applied to a very specific sector, in my case the railway system. Second, research is being conducted.In secondo luogo, la ricerca non è ampiamente applicabile a causa della natura qualitativa dello studio. Second, due of the qualitative nature of the study, the research is not universally applicable. The use of a qualitative technique proved critical in doing this research since it allowed me to examine in depth and gain a full view of the data I was collecting through

interviews. Understanding the effects of the unexpected on businesses is, indeed, difficult to quantify. I was able to comprehend the complexity of handling the anomaly and which divisions are most involved in fixing it using the qualitative technique. Italo, Trenitalia, and Mercitalia were the companies studied. This decision was taken specifically to compare organizations of varying caliber and age, as well as to demonstrate how management changes when delivering goods rather than passengers. Furthermore, as demonstrated in the article, some distinctions can be observed between Trenitalia's more vertical hierarchical design and that of Italo, an organizational structure with less hierarchical stratification.In contrast, intuitions are more likely to be significant and appropriate for a fairly narrow range of organizations identical to the three under examination. In fact, I had to rely on a small sample of participants, restricting the potential for generalization even further.Furthermore, while organizational resilience and corporate improvisation are frequently at the center of the argument and are concerns related to some strong organizational practices, they might be awkward to discuss publicly. As a result, admitting to being out of sync with such 'best-practices' may have been more difficult for some individuals, particularly those in specific jobs within the organizational hierarchy. However, the open discussion of limitations, negative perceptions, and doubt was interpreted as a positive signal of intellectual integrity, which contributed to the results being solid and rigorous. Furthermore, while I was able to obtain data saturation within the time and scope allotted for the investigation, additional research, investigation, and specification may be required for a comprehensive explanation of this large and difficult phenomenon.This process is currently ongoing; nevertheless, given the findings of this experiment, it is feasible that continued technology improvements will also help to prevent or resolve these unanticipated situations.