Governance Void and Environmental Risks: The Effects Of High-Power Distance And Low Trust On Imperfect Information

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Introdução
National culture traits, especially higher power-distance, uncertainty avoidance and low trust, can negatively affect the development of an adequate informational architecture for risk management. The inadequate informational architecture open breaches for relevant governance voids in regard to risk management. Governance voids favors the opportunistic search for short-term financial results in disregard for operational risks, increasing untamed operational risks with consequences for workers safety and environmental damage. Research on 5 large Brazilian organizations confirm these findings.

Problema de Pesquisa e Objetivo
Countries and organizations with high power distance cultures have higher number of labor and operational accidents. This research seeks to understand, empirically what causes this results and why adequate risk governance doesn´t evolve on those national contexts for more sustainable results.

Fundamentação Teórica
Culture/trust/governance Geert Hofstede (2001) for references on culture. (Schoorman, Mayer and Davis 2007) on trust. (Fukuyama, 1995; North, 1990; Ostrom, 1990) on trust and development. Low-trust countries have relatively lower economic performance: (Beinhocker, 2006; Inglehart and Welzel; 2005). Lower trust has negative impact on productivity, competitiveness (Migueles and Zanini, 2021) and safety management (Zanini and Migueles, 2018) and on the evolution of cooperation (Ostrom, 1990) – for trust and performance. Oliver Williamson (1996) for governance and opportunism.

Metodologia
Discourse analysis on 16 classrooms of executive education (total of 528 individuals/their papers/reports and teamwork) 5 In-depth interviews with each of positions: top executives, board members, safety middle managers and 15 focus-groups with shopfloor workers.

Análise dos Resultados
The qualitative investigation in 16 classrooms of executive education and 5 large Brazilian companies provides evidence that High power distance/ high uncertainty avoidance and low trust negatively affect the development of a reliable information architecture on risk management. The derived uncertainty regarding to risks (caused by the absence of a reliable information architecture) favors the opportunism of shareholders interested in short-term result. Sub investment increases risks for workers and environment.

Conclusão
Understanding the impact of national culture on risk governance is relevant to reduce the governance voids that allows for short-term opportunism in the search for maximum financial returns in disregard for risks for workers, surrounding communities and the environment.

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Palavras Chave
gestão de riscos, confiança , cultura

GOVERNANCE VOID AND ENVIRONMENTAL RISKS: THE EFFECTS OF HIGH-POWER DISTANCE AND LOW TRUST ON IMPERFECT INFORMATION

Note: sorry… no time for language review…

1 - Introduction

In theory, good governance guides the organization towards the balance of the necessary efforts to assure short term economic results, with respect for the rights of other shareholders, and responsibility for environmental effects of the productive activity. This balance builds the basis for mid- and long-term results. However, in some countries, such as Brazil, where this research was conducted, it may be easier said than done. The investigation of the difficulties on organizational level concludes that three key dimensions of the national culture: high power distance, high uncertainty avoidance and low trust (Hofstede, 2001) favors short-term opportunism and threaten the encapsulation of interests between the organization and other shareholders, including employees and surrounding communities, preventing the development of mutual trust, the acquisition of the social license to operate and better risk management. Countries such as Brazil (and probably others from Global South – Alcadipani. R., 2012; Boussebaa, M. 2020), where there is the combination of high-power distance (the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally (Hofstede, 2001, p. 98) with lower propensity to trust (trust measures the willingness to be vulnerable to another party - Mayer, Davis, and Schoorman, 1995) and high uncertainty avoidance (the extent to which the members of a culture feel threatened by uncertain or unknow situations – Hofstede 2001 p. 161) may have more difficult to encapsulate interests, and avoid the trap of low cooperation, that impacts negatively on information gathering and processing activities. It produces significant governance voids that have not been adequately treated in the literature.

Low trust has a negative impact on information treating capabilities and on the development of cooperation. Hofstede (2001, p.159) observed the negative relation between power distance and trust. And of power distance and larger spaces for discretion of the powerful (p.382). Studies demonstrate a relation between power distance and increased number of accidents. International Civil Aviation Organization (ICAO) studies have observed how power distance works on the reducing communication efficacy between pilots and copilots on the investigation of black box in airplanes crashes Gladwell, M. (2008).

However, the investigation of the relation between power distance and trust and environmental disasters are still at early stages. The subjacent hypothesis for this investigation is that there no direct causal relation, but a systemic causality, making it harder to map out the voids that open space for opportunistic behavior (self-interest seeking with guile, Williamson, 1996 p. 224) and increased social and environmental risk-taking. At this preliminary study it was confirmed that power distance, as observed by Hofstede (2001), negatively affects trust and the voice from the workers´ on risk analysis and learning. The confluence of high-power distance and high uncertainty avoidance enhances hierarchy and controls (Hofstede, 2001, pg. 377). The controls, without voice from the shopfloor, are devised to limit the possibility of human error and to frame human behavior. As consequence, the process of continuous improvement and team learning do not find ways to advance. Controlling behavior is not synonymous of controlling the factors that increase operational risks. The absence of voice from the shopfloor increases the distance between imagined activity (that gave origin to operational procedures, rules, and controls) and the real activity, and prevents the development of cooperation to solve real and complex problems. This confluence of factors creates a context of illusion of control, for one side, and powerlessness for the shopfloor to cope with real facts and improve operational safety, on the other. It has negative effect on the capacity to collect and treat relevant information for safety continuous improvement and risk management. Therefore, national culture contributes for the existence of a context within

which it is acceptable, for the worker, not be heard and not to participate on the evolution of system and for the managers to use discretion. As result, it negatively affects the quality and quantity of information available to assure the necessary continuous improvement for higher safety. Quality information is relevant to reduce uncertainty (Grote, G. 2018). Ideally, the risks posed by this cultural configuration should be object of governance. Organizations are aware of the relevance of culture for performance, but tend to be unaware of the impact of national culture on organizational culture and governance.

The interviews reveal that this cultural context favors short-term opportunism. The absence of quality information produced by low cooperation results on confusion and uncertainty in regard to risks and ways to cope with them. On this context, the use of asymmetry of information between top managers and workers, and among areas and specialized teams, favors the focus on command and control oriented for short term results, creating governance voids within which it is possible to increase pressure for short-term results in disregard for increased risks for workers, surrounding communities and the environment. This research was designed to understand these types of voids that prevents the evolution of governance. We discovered that cultures of high-power distance, strong propensity to avoid uncertainty (Hofstede, 2001, p. 377) and low trust favors short-term opportunism, increasing the risk for operational safety and for the environment, thus decreasing trust. Trust plays relevant role in organizational performance (Schoorman, Mayer and Davis 2007) and economic development (Fukuyama, 1995; North, 1990; Ostrom, 1990). Low-trust countries have relatively lower economic performance (Beinhocker, 2006; Inglehart and Welzel; 2005). Lower trust has negative impact on productivity, competitiveness (Migueles and Zanini, 2021) and safety management (Zanini and Migueles, 2018) and on the evolution of cooperation (Ostrom, 1990).

Studies on trust have grown in number and accuracy: metrics, evaluation forms and descriptions of different trust types are currently available for researchers to test and expand knowledge on the subject. Trust enhances individuals' cooperation, engagement, and motivation, as well as favors risk acceptance and innovation. Studies focused on investigating the relation between interpersonal trust and its context remain at early stages (Schoorman, Mayer and Davis, 2007). Considerable efforts are still needed to progress in this direction.

This research shows that on social and economic contexts of higher uncertainty, as that of Brazil and perhaps others of the Global South, the focus on sort term results tend to prevail. It is difficult to anticipate positive results for long-term investments on contexts of higher uncertainty. On the other hand, the focus on short-term reduces efforts towards long-term results, creating a vicious circle of short-term orientation that results on a context of higher uncertainty stimulating a focus on short-term results. According to the observations carried out throughout this research, the focus on short-term results appears as partially responsible for the difficulties in assuring the evolution of cooperation towards better risk management and accident prevention. However, the focus on short-term doesn't seem to be an isolate consequence of culture, as a general phenomenon, but rather a strategic choice, justifiable by uncertainty, but that in practice favors stockholders in search for short term results. Jarvenpaa, Sirkka L.; Välikangas, Liisa (2016) show that continuous interaction leads to learnings on how to use data and improve research and knowledge, reducing governance voids. Studies show the relevance of context and collaboration for reducing the negative effects of institutional voids (Burki, Umar. 2012). It is relevant to understand the factors that block the development of cooperation and learning, thus improving information quality and risk governance in Brazil to advance with knowledge building for risk and accidents reduction.

There is a large variation in trust across societies, as studied by Delhey and Newton (2003) and the World Values Survey (WVS, 2015), and studies on the correlation between trust and economic results (Zak and Knack, 2001). Economic activities requiring agents to

rely on the future actions of others are accomplished at lower cost in higher-trust environments (Knack and Keefer, 2003; Zak and Knack, 2001), a fact that favors individuals' cooperation and coordination to find better results for the collectivity involved (Ostron, 1990). The role of leaders in producing trust is relevant (Rosing, F.; Boer, C. and Buengeler, C. 2022). It is reasonable to presume that in high-power distance context the leader fails in leading towards cooperation and producing trust, in spite of the apparent advantage of doing so. Unless it might be of advantage to actively, intentionally, prevent this evolution, producing mistrust as side effect. It is relevant to understand this process to better understand the apparently undesirable results.

Hofstede (2001:159) advocated that the combination of high-power distance (PDI) and high uncertainty avoidance (UAI) correlates to low trust, showing, based on the 1990-93 World Values Survey, that trust ranged from 7% "can be trusted" in Brazil to 66% in Sweden. The separation between conception and execution, which is a common feature in Latin cultures (Hofstede, 2001: 377), tends to create organizational contexts without clear link between the commitment, knowledge, and effort of individuals at the bottom layer of organizations and organizational results. Silencing the bottom-layer employees contributes to continuously recreating subordination, inequality, and low-trust relationships (Migueles and Zanini, 2021). Employees working in higher trust countries can use their knowledge and decision-making ability to break rules, whenever necessary, and they are less resistant to changes. On the other hand, rules cannot be broken in low-trust societies, where there is strong resistance to changes and suspicion towards others (Hofstede, 2001: 382). Our observation points to the prevalence of inefficient rules, forcing improvision and therefore eroding the operational discipline as a pattern in our data. Sentences as the following emerged as a pattern on workers interviews: *we are full of watermelon indicators…. They are green outside and red inside. We are safe? I truly doubt. What do I do? I pray…I need the job and comments on safety are not really welcome…o*r when the manager wants us to d*o*r yet*: "no…. we don´t know what the procedures are designed to do in term of safety…. We are simply told we have to abide by them. Do I trust it produces the desirable result? I don´t know…. I have no idea. I try not to think much of it. I need this job."*

The current study has analyzed the elements jeopardizing cooperation and trust focused on safety at work, in order to find a concrete empirical problem to help identifying trust-reducing and risk enhancing factors. Safety is a relevant object in this study since safer operations are on the best interest of all: workers, managers, and other stakeholders; thus, cooperation would be expected. However, the rate of accidents observed in Brazil, where the current study was conducted, is comparatively higher among many other countries[i]. Studies focused on investigating the relationship between national culture and safety culture produced evidence of significant influence of the first on the second one, especially considering the power-distance dimension (Tear, Reader, Shorrock, and Kirwan, 2016; Yorio, Edwards, and Hoeneveld, 2019; Tear, Reader, Shorrock and Kirwan, 2019; Appelbaum, Dow, Mazmanian, Jundt, and Appelbaum, 2016; Liao, 2015; Reader, Noort, Shorrock, and Kirwan, 2015; Atchley, Shi, and Yamamoto, 2014; Edwards, Davey, and Armstrong, 2013; Starren, Horniks, and Luijters, 2013; Okolie and Okoye, 2012). The common feature of these studies lies on the strong influence of Hofstede's (2001) national culture dimensions on safety culture.

According to recent studies, power, voice, and autonomy issues emerge as critical factors to improve safety (Hollnagel, 2014a; 2014b; Hollnagel, Wears and Braithwaite, 2015; Hopkins, 2006; Hopkins, 2019; Tear at all. 2019). According to recent observations, and based on Hofstede's arguments, the intermingling among high power distance (PDI), strong propensity to avoid uncertainty (UAI) and low trust has created vicious circles of inefficient communication, low propensity to cooperate, low autonomy, low operational discipline, and low engagement (Migueles and Zanini, 2021; Migueles, Zanini and Lafraia, 2019). Thus, it is

reasonable considering power concentration as relevant factor in organizations and societies, as well as hypothesizing on its negative impact on trust, as key to understand the reason why some systems resist changes. It is rational and desirable working towards reducing fatality and accident rates. However, cultural barriers to cooperation can prevent such an evolution.

2 - Theoretical framework
National Culture and Safety behavior

The resource dependence perspective associates external constrains with organizations' internal dynamics (Pfeffer and Salancik, 2003). Theoretical concepts and managerial solutions used to address issues such as safety and risk governance did not properly take these differences into consideration. Difficulties emerging in the process to internally cope with risks have significant impact on risks faced by the surrounding areas. On the other hand, culture and institutional rules affect the way corporations internally deal with risks.

Complex issues linking organizational culture, institutional development and their impact on organizational development remain poorly understood. Failing to assure the safety of one's own workers has significant negative impact on public expenditure, on organizational culture, as well as on the lives of both workers and the surrounding communities. Adopting biased research perspectives can significantly compromise the results if one aims at improving a given situation by enhancing cooperation to achieve effective safety standards. Soeters and Boer (2000) investigated military aviation accidents based on data about total losses per 10,000 flying hours of 14 NATO air forces; they found significant correlation between accidents and Hofstede's (2001) cultural dimensions, and it evidenced that culture plays relevant role in flight safety. Edwards et al. (2013), Yorio et al. (2019), Zanini and Migueles (2018), and Migueles, Zanini and Lafraia (2019) have confirmed this correlation. Mohamed, Ali and Tam (2009) have found similar feature in Pakistan.

Noort, Reader, Shorrock, and Kirwan (2016) investigated causal relations between national and safety cultures, based on the analysis applied to the impact of the uncertainty avoidance (UAI) dimension (Hofstede, 2001). Results have shown that high uncertainty avoidance has negative effect on safety. Bishai, Quresh, James and Ghaffar (2006) observed correlation between GDP/per capita and the number of deaths per 100,000 vehicles. Based on the list of countries investigated in Hofstede's PDI dimension, it is possible seeing that the larger the PDI, the higher the number of fatalities in this list. Similar trend can be seen in the study by Hämäläinen, Takala, and Saarela, (2006), according to whom, companies operating in developing countries tend to be unable to identify their hazards. The effect of power distance of information treatment capability may be central to this inability.

Moura, Michael, Patelli, Lewis and Knoll (2016) have analyzed recent major accidents and concluded that human-related issues play central role in the understanding of catastrophic outcomes. Alvarenga, Frutuoso e Melo, and Fonseca (2014) have emphasized that these studies could benefit from a human information processing architecture. However, without a perspective on power and objectives of those in power the intentionality in hiding information can be easily mislead for systemic organizational error.

Tear et al. (2019) used a sample comprising 21 national air traffic providers to investigate the relationship between the perception of a given safety culture, individuals' position in the hierarchy of a given organization and corporate values associated with power distance. They observed that managers perceived safety culture in a more positive way than frontline workers, as well as that worker living in high power-distance countries reported safety culture to be less positive than workers from low power-distance countries. Differences in individuals' perception about safety culture are exacerbated in national contexts featured by

higher power distances. Lack of proper processes to capture and treat information, and of upward information flows, can be partly causal in this observation. Most studies look at the difficulties with capturing and processing information as resulting from "national culture" without investigating why, on certain cultures, these inefficiencies remain. Opening the black box of culture can reveal relevant governance voids.

According to Ostrom (1990: 8), individuals may be caught in processes that lead to undesirable outcomes in certain institutional arrangements. As the aforementioned author has evidenced, the paradoxes of rationality and cooperation are far from being trivial, mainly in places where there are large power asymmetries. The impact of power asymmetries on low PDI and high individualistic (IDV) societies is less perceptible. According to the ethnographic study on safety culture conducted by Gherardi and Nicolini (2002), safety is the outcome of a collective construction process involving people, technologies, and symbolic resources. Similarly, observations in the present study enabled concluding that, by blocking this learning process (Stemn, Massall and Bofinger, 2020) and by negatively affecting individuals' perception about coherence (Rerup 2009), national cultures can have negative effect on the organizational context where such a construction takes place. Not everyone in a context is equality trapped in institutional or organizational arrangements. It is possible to argue that these arrangements may benefit specific groups and individuals in positions of preventing the evolution of the system at countries where the system remains, in large part, stagnant in spite of the efforts of middle managers and below. Burki, U. (2012) demonstrates how the embeddedness of Asian businesses in socio-cultural context is relevant for governance and mentions the importance of the development of informal mechanisms that assures orderly market mechanisms to protect the rights of the companies and other stakeholders. In sum, the context is relevant and may produce positive or negative outcomes. Investigating this relation seems relevant for the evolution of governance.

Trust variation across nations and barriers to advancements
Deepening observations in observable facts

Hofstede (2001: 98) defines "power-distance as the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally". This concept is relevant for the current research because "expecting and accepting" are intriguing and constituent elements of power phenomenon permanence in society, demanding a deeper understanding of the antecedents of this type of expectation and acceptance, thus investigating the rationality of submission. The present study does not intend to reduce the complexity of power as constituent of social systems (Lukes, 1986). It focuses on understanding how inequality in the access to political and economic resources affects the flow of social exchanges in corporations, increases risks associated with their activity and reduces their ability to solve complex problems, even when solving these problems is in everyone's interest. According to Guiddens (1985), power can be understood as "transformation capacity". It is relevant understanding how this capacity is unequally distributed to achieve safety in high-power distance societies.

Williamson (1996: 60) has emphasized that coping with uncertainty is a core issue in economic life. Coting Koopmans (1957: 147), he differentiated among three different uncertainty types: the state-contingent uncertainty, the one deriving from lack of communication, and the behavioral, intentional uncertainty producing schemes. The first two types are innocent and nonstrategic uncertainties, whereas the third one is based on strategic nondisclosure, disguise, or information distortion. This difference is relevant to help distinguishing statistical risks that should be reduced through technical efforts from idiosyncratic hazards that should be the object of good governance. On opposite direction, it

is relevant to understand how failures in governance can keep those two first types of uncertainty high. Discretion has negative effect on foreseeability and increases behavior-related risk perception. Hofstede (2001: 380) has emphasized that personal authority prevails over rules in high-power distance societies. This prevalence leads to increased fear of discretion, directing efforts towards politics and the construction of personal ties, and increases incentives to build mutual protection strategies within hierarchies; however, it has negative impact on efforts focused on reducing personalism and on political alliances disconnected from major goals.

Pfeffer and Salancik (2003) have analyzed this issue from the resource-dependent perspective and observed that environmental constraint affects internal organizational dynamics. There is association between external interdependence and internal organizational processes; this association is mediated by power (p. XIX). Individuals who can best cope with critical organizational uncertainties find their way to top positions and use that power to ensure that their view of what should be done prevails. Their designation to these positions is associated with conditions, such as ownership and financial performance, which guide the composition of the board of directors. Pfeffer and Salancik (2003) also observed small number of studies focused on investigating the association between environmental constraints and internal dynamics of organizations; however, the evidence found by them was consistent with resource-dependent nature and with executive succession logic. Therefore, it is necessary understanding the goal of shareholder representatives at council boards, as well as its impact on executive selections, to help better understanding the power strategies adopted by executives.

Intentional breaches on governance schemes seems to impair the evolution of this system. In the Brazilian case, the concentration of economic and political power created a path of discretion for powerful individuals within corporations. This path enables pursuing maximum short-term profit with fewer investments in long-term benefits X well-balanced gains for all stakeholders. It is a way to assure the prerogative of shareholders who impose their short-term interests over the interests of other parts.

Our research has shown that contexts of high political and economic uncertainty, such as the Brazilian case, favors strong preference for executives oriented towards short-term financial and operational results, as well as low support from shareholder representatives at the managing board to projects aimed at improving internal coordination for innovation and value orientation, including safety. Uncertainty has a relevant role on executive´s selection (Waldman, D. Ramirez, G; House, R.; Puranam, P. 2001). Investments in technical and mid-level executive education enable perceiving gaps in risk management processes. However, focusing on short-term results leads to significant resource bottleneck to advance and powerlessness for middle managers to lead towards improvements. Sverke, Hellgren and Näswall (2002); Staufenbiel and König (2010); Wang, Mather and Seifert (2018) and Vander Elst, De Cuyper, Baillien, Niesen, and De Witte (2016) and Shoss (2017) observed negative correlation between job insecurity and psychological health. Zanini, Migueles and Carvalho (2021) correlated power-distance to internal integration barriers and to difficulty in consensus-building and cooperation. Zanini and Migueles (2018) study in military police elite troops observed that shared leadership reduced power-distance and increased trust by increasing foreseeability and trustworthiness. It provides subsides for understanding the role of leaders in building trust in Brazilian context and denies any deterministic feature of national culture. Improvements in the information processing architecture improved the quality of governance and the ability to assure the continuous development of, and learning by, high-performance teams, with positive results for safety and risk management.

3 – Methodology

The main hypothesis of the current study is that power distance increases risks of behavioral opportunism of leaders and vulnerabilities of the lead, producing negative effects on trust. Low trust negatively affects information sharing and organizing, opening gaps for opportunistic behavior driven by short-term preference for profitability of the stakeholders.

The selection of short-term oriented managers favors sub investment in maintenance and other safety demands increasing operational risks and risks for the environment. Preventing information gathering and processing is relevant for sub investment.

The present research was divided into three different stages in order to investigate this issue:

1) Collection of materials and information produced by participants in executive education programs, both in-company and open (individual subscription) or consortium (more than 2 companies) programs. Exercises and testimonies were collected in 16 classes of executive education, with average of 33 participants (this number excludes partial participation). In a total of 528 individuals.

2) Participant observation on the sales process of executive and operational training in programs of safety, heath, and environmental issues (where we could observe the nature of the problems in this area according to the perception of the contracting executive). In a total of 9 entire sales process.

3) Interviews and focus-groups with executives and board members from large companies. In-depth interviews were carried out with board members and top managers. Focus-groups were carried out with lower-level managers, supervisors and operational workers from maintenance, production, and logistics sectors.

3.1 Research procedures

On the first and second stages of the research, a research assistant took notes of the meetings, of classroom debates and collected flipcharts pages. The second stage was conducted in 5 private companies. It comprised 18 in-depth interviews with safety middle-managers, 5 interviews with directors accounting for health and safety issues at the top executive teams, 5 interviews with management board members (only two of the same companies of the study), 5 focus-groups with shop-floor supervisors, and 15 focus-groups with maintenance (5), logistics (5) and operational teams (5).

Two companies cooperated with our research by allowing the interviews to be carried out at their shopfloor. All interviews and focus groups were conducted in companies with risk degrees 3 and 4, according to the Brazilian Regulatory Standards (CNAE – Classificação Nacional de Atividades Economicas e NR-4 -Ministério do Trabalho).

Results of interviews were segmented by hierarchical levels and time on the company. Two questions were used to start the interviews:

1) What would it be like for you to work with maximum excellence in safety? Could you please describe what it would be like in your understanding?

2) What is preventing you from working in this direction? Could you please point out and explain the causes of difficulties observed by you?

We often used the question: -why? to deepen data collection and to encourage interviewees to elaborate on their argument. Other questions were avoided to prevent bias. During the interviews, we often asked interviewees to provide examples to help better understanding the meaning of what was said through the description the concrete facts they observed at their organizational context.

The discourse analysis had the following objectives: 1) Understand the view of safety and its main challenges per group; 2) Understand the barriers to evolve towards highly reliable safety

management and outcomes; 3) Understand the level of support each group receives to assure the evolution of operational discipline for safety; 4) investigating how each group sees the information barriers to informed and treat risk factors to reduce the number of accidents and observable risks in organizations.

We used a color code in a sheet to organize the typology of categories concerning the understanding about safety and its preconditions. We used a second color code in another sheet to organize the typology of causalities for problems and difficulties. It is relevant to note that life experiences that people recall as historically relevant to explain a specific issue possesses a relevant semantic weight in relation to others in discourse analysis. One example, constantly mentioned on classroom debates, regarding to Vale´s worker that send an anonymous email to warn of imminent risk in Brumadinho´s Mina Corrego do Jeijão dam failure is, in this sense, worth a deeper interpretation.

5 - Empirical Findings

Our empirical findings were divided into two main groups: a) Trust-reducing factors in safety management; and b) Opportunities for building trust to improve safety standards. We analyzed these findings below:

Trust-reducing factors in safety management

Interviews confirmed the existence of strong pressure to produce short-term results as the norm in all investigated firms. Sentences such as: "*who is crazy to carry bad news to the boss*"? "*We are not welcome to bring problems to the table*". "*The supervisors know of our difficulties. But they are one of us…. No one listen to them*". "*Once our supervisor tried. The result was disastrous. He was screamed at. Now with the new rules against moral harassment it is forbidden to do that. But it is common to hear: your are not paid to bring up problems. But solutions.*" It is very hypocritical. The problem demands investment. How can the supervisor solve that? 1) The short-term orientation reduced relevant investment in operational safety, that ranges from .1.a) Insufficient investments to improve equipment's´ operational condition (both CAPEX, investment in better equipment that would reduce time loses and risks - and OPEX – in the maintenance of existing equipment and continuous learning of operational teams). Sentences such as: "*the equipment is old. Quite often there are leakage of ammonia or acids. There are lot of production interruptions. And a lot of pressure for maintenance to finish the work. The procedure stablishes 4 hours for the job I had to do this morning. But after 30 minutes the manager was already at the shopfloor putting a lot of pressure…. There are a lot of safety campaigns. But production is clearly at first, in spite of all safety discourse*" 1.b) Pressure for conclusion of short-term activities that impact production, absence of moments to advance with diagnosis of non-measured time loses, improvises that increased operational activities: *"there is a lot of reworks, time loses, and risks derived from lack of structure and investment and pressure for short term problem solving. The safety discourse and campaigns are nice. But in practice it does not work. We run a lot".* 3) Strong preference for executives oriented towards short-term financial and operational results: "*I am the higher executive for safety at my corporation. But I am a weak guy in the structure. I have no power to face the CFO – and the decision-making is always for sub investing in my area. However, I can not complain. After a large fire we had they created a position higher in the hierarchy for the safety manager. But it doesn´t mean access to resources to do what is needed in fact.*" 4) Low support from shareholder representatives at the managing board: "*We talk a lot about ESG. However, the board doesn´t know the problems and do not have either the patience or curiosity to know*". Or: "*We lack a diagnosis to plan effective actions. I am striving to make it. It is already the third year in which I hear there is no resource for that. But there was a distribution of fat dividends. And our stock prices are higher, in spite of the pandemics.*" Or*: Most of the boards are compose by*

engineers, economists, and business managers without experience at the shopfloor and without clear understanding of the other stakeholders perspective (issue of board diversity). I believe they do not want a diagnosis. It is not a value for them. If they have one, they will need to do something about it".

Example of an interview with a worker on a steal shop: Researcher: - Hello" we are hired to discover why there are so many accidents with the workers´ eyes here. I would like to hear from you…. Worker: - Simple! The glasses that are supposed to protect our eyes during welding and other procedures don´t work. They bought a Russian glass…. They said it is best balance between quality and price… it might work there, where it is cold. Here, at 40 degrees Celsius, it blurs in seconds. Then we put it in the forehead to be able to weld. Researcher: - but how about the safety risk? Worker: - "it is easier to control the trajectory of the filings than the reaction of the managers if we complain of the safety procedures and equipment's…."

The interviewed executives came from 5 large companies that: 1) had Safety Systems in place. 2) had ESG Guidelines. 3) three of them were signatories of United Nations Global Compact. All executives agreed that: 1) Safety was well below the expected standard, whereas key issues such as operational discipline, workers' autonomy, learning teams, continuous improvements and adequate information processing remain highly inadequate in their corporations. 2) Lack of systemic view and interdependent cooperation through the organizational structure limits what they can do. They tend to agree that they were doing the best they could within the narrow limits they had. 3) Organizational support to solve real issues is inadequate and, although the discourse is focused on safety in the first place, the significant pressure for short-term productivity works as barrier to the evolution of this topic. 4) There are strong time-limitations both for the team to learning process and for managers to produce proper diagnosis and to develop problem mitigation strategies. 4) All interviewees agreed that sub-contracting increases risks and current trends, since different companies illy integrated operating the same facilities, increase operational risks. It is known from the shopfloor to the board. No one know of any project ever approved to assure better integration or analyses deeper the situation. Price is the main factor on the decision of who should be hired, in spite of observable risks. 5) All middle managers have mentioned lack of channels and low availability of their superiors to talk about the risks deriving from subcontracting. 6) Most middle managers feel that they do not have psychological safety to bring complex topics to their superiors and that they have to "simplify" their reports to earn minimal support. 7) One director feels that the CFO has low tolerance to in-depth analysis of safety risks and lacks knowledge about engineering and operational issues. Technical formation asymmetry leads to difficulties in further discussions about operational risks and support-earning. 8) All interviewees agreed that efforts to invest in the development of safety culture and workers' autonomy are significantly limited by the company's budget, regardless of its profits. 9) The authority and the degree of access to resources are incompatible to the scope of the necessary projects of Safety, Health, and Environmental issues. 10) 16 out of 18 middle-managers believe that the top managers do not want to have information about risks and threats brought to them or to the management board. 11) Board members affirm that is no time to treat "this sort of operational detail" in board meeting. The boards meet from 6 to 8 times per year. Their informal estimative is that most of the time (more than 50%) during the meetings is invested in financial issues. Some of the time is devoted to manifest board members´ different opinions, followed by risks for the business (marketing treats and supply chain issues), for follow-up of the strategy (less than 5% of the time), ESG and diversity (less than 5% of the time) and others. Safety is not related to ESG for board members. Safety seldom is a subject, except when accidents occur.

The academic production on this subject it disproportionally meager given the potential loses and untamed risks. Interviews conducted with the safety middle managers of these corporations pointed towards the almost exclusive focus on risk engineering in order to rule out the causes of accidents.

On the classrooms of executive education, Brumadinho disaster was often brought to the discussion to make the following point: are we free from this sort of risk? People who answer yes, justified by the absence of large risk of environmental disaster in their process. But agreed on the lack of voice from shopfloor workers.

On the case of Brumadinho:

The document (Inquérito Civil n. MPMG-0090.16.000311-8 Procedimento Investigatório Criminal n. MPMG-0090.09.000013-4 from Ministério Público do Estado de Minas Gerais) points to the fact that investigation proofs that the company knew the critical situation of the dam and that in spite of the existence of a science of technical elements pointing to the risk of liquefaction, both Vale and Tüv Süd (in charge of safety certification of the dam) cooperated for the illicit emission of documents to hide this information. The same document presents a text from an anonymous email sent by an employee of Vale to the President of Vale and other executives, prior to the accident, entitled: "The truth" – "A verdade", where the employee points to the critical absence of investments to its "minimal adequacy" – describing the risk related to the lack of equipment, personal, safety and excessive capacity – and the effort of management to find and punish the sender. This fact was on different media (https://g1.globo.com/mg/minas-gerais/noticia/2019/11/05/executivos-da-vale-receberam-e-mail-anonimo-sobre-barragens-no-limite-2-semanas-antes-de-desastre-em-brumadinho-diz-jornal.ghtml). This was the main case brought by participants to classroom debates. The comments that appear in classroom by frequency order are: 1) *"It is obvious that many people knew of the risks. A disaster such as that do not occur without a significant number of wrong decisions." 2) The pressure to silence the organization on risks that demands large investments is clear. If we follow the recommended safety procedures, and there are many different methodologies to do that, the risk would have come up much earlier; Than there was clear violation of safety management technical standards. 3) If they followed the technical safety recommendations, this would never have happened. 4) It is clear that there was a deliberate attempt to hide relevant information. 5) There is a clear effort to prevent the technical team from doing their job. 6) In some companies, if we admit all the risk, we need to invest a lot. There are a lot of historic mistakes in this field and accumulated demands.* For a technical investigation see: Hopkins, A. and Kemp, D. (2021).

When debating their own organization, members of the classroom agreed that in different degrees they all experience this sort of pressure. Members of oil and gas industry point to the risk of the entry of investment funds on this segment. According to them, the lack of technical deference and the focus on short term results have been affecting maintenance investments and increasing risks.

6 – Discussions

Power distance and trust are relevant issues in the process to better understand the internal dynamics of companies operating in Brazil. Significant power imbalance seems to favor the use of information asymmetry, both internally and externally to the firm. This process favors discretion and inhibits the development of a context where continuous interaction promotes the engagement in problem solving and continuous improvement, what would increase information sharing, foreseeability, and trustworthiness. Significant developments are needed to develop a proper information architecture and for the

orchestration of actions lead towards evolution of technical teams better deployment of their capabilities. This seems a relevant development for the governance schemes to assure operational safety and environmental protection at Brazilian firms.

One way to advance in risk governance appears to be the creation of both formal and informal mechanisms to assure that organization's members, mainly top managers, will provide and organize critical information to improve the internal cooperation linked to this goal, such as the product of efforts made by each worker to contribute to risk analysis and identification, as well as external cooperation by surrounding communities. Informal mechanisms can be developed by collaborative efforts to invest on research on safety in Brazil and advance with the knowledge of the impact of the sociocultural context on risk governance. It is necessary improving the current safety monitoring schemes, based on the production of indicators and on efforts made by members to improve them, with results to be presented in sustainability reports. In terms of formal efforts, it is necessary to improve governance to prevent distortion of safety information and indicators in favor of short-term financial returns and in terms of policy, it seems relevant to criminalize the intentional information hiding and the silencing of the shopfloor regarding operational risks as well as the absence of formal procedures for the workers safely inform and register operational risk information.

Given the risks of physical integrity of organization´s members and surrounding communities, the mechanisms of governance in Brazil need improvements to assure the creation of a proper information architecture for surrounding communities to participate on risk diagnosis and risk elimination and to provide evidence of the quality of the risk demonstration for society. Since the practice of hiding risk-related information and the use of distortion and information asymmetry to gain short-term advantages seems to a relatively well spread practice, given the rate of agreement on relatively radon (individuals that by chance were on the same classroom) selection of interviewed, it is necessary to conduct future research to help better understanding the gaps that need to be eliminated for the evolution of monitoring institutions.

7 - Conclusions

Our research findings point towards the critical role played by national culture in trust development. Using qualitative analysis, it was possible to identify the negative relation between power distance and trust, and its negative effects on the learning skills of both individuals and teams, as well as their information processing and treatment ability, with negative impact on accident reduction and safety management. It seems relevant to comprehend the role of inequality (The World Bank, 2020.) on risk management and workers submission to unacceptable risk and its correlation to governance voids and investors opportunism.

This research contributes to the literature on trust and risk governance within organizations. Our observations have evidenced that national culture favors governance gaps and malicious usage of information asymmetry in risk management processes. The continuity of research in this area seems relevant for the development of information gathering and processing abilities, with consequences for learning and team development, as well as increased transparency, thus improving informational architecture. Participative leadership has positive effect on direct leaders' perception of integrity and becomes a crucial factor with positive impact on the continuous development of trust. Thus, it neutralizes the main feature of power distance, according to Hofstede (2001: 85), i.e., eliminating subordinates' fear to express disagreement with their superiors. The present study offers a contribution to the literature in the field demonstrating the role of qualitative research for risk management investigation focused on how power inequality affects human reliability and how low trust

affects safety management is scarce and it can help improve safety standards, with consequences also for environmental risks.

8 – References

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[i] According to the International Labor Organization (ILO), Brazil ranks the second position in labor-related deaths among G20 countries; it recorded 21,467 deaths between 2012 and 2020, which corresponds to one death for each 100 thousand workers. It is only behind Mexico, which recorded 8 deaths for each 100 thousand workers. According to Observatorio de Segurança e Saúde do Trabalho (2021), by Ministerio Publico do Trabalho in partnership with ILO, Brazil recorded 571.8 thousand labor accidents in 2021, which resulted in 2.5 thousand fatalities. Given the history of undernotification in the country, experts assume that the total number of labor accidents was close to 700 thousand. The Public Pension expenditure reached R$ 17.7 billion reais in health support and R$ 70.6 billion in disablement; moreover, R$ 22.3 million were lost in working days and R$ 6.5 million, in total disability days.