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The role of national culture in safety practices: brazilian perspectives on workplace and asset integrity

O papel da cultura nacional nas práticas de segurança: perspectivas brasileiras sobre integridade no local de trabalho e de ativos

El papel de la cultura nacional en las prácticas de seguridad: perspectivas brasileñas sobre la integridad en el lugar de trabajo y los activos

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ABSTRACT: This study examines how national-cultural dimensions shape the enactment of workplace and asset safety in Brazilian offshore oil and gas operations. Integrating Hofstede's cultural dimensions with stakeholder and contingency perspectives, we analyze evidence from approximately thirty focus groups (200+ participants) to identify the organizational mechanisms through which ethical intent and formal safety systems are translated into day-to-day operational discipline. The findings indicate that power distance, voice/psychological safety, uncertainty avoidance, and trust shape management-system enactment and work execution conditions, with downstream implications for both harm prevention and barrier integrity. The article concludes with implications for theory and practice and outlines a qualitative research agenda to examine the transferability of these mechanisms.

Keywords: workplace safety; asset safety; asset integrity; national culture; operational discipline.

1 INTRODUCTION

This study examines how national-cultural dimensions shape the enactment of workplace and asset safety through their effects on operational discipline in the Brazilian offshore oil and gas sector. The research has three objectives: (1) to identify culturally salient barriers and enablers of safety-related operational discipline in Brazilian offshore operations; (2) to develop a thematically grounded framework connecting cultural dimensions to management-system enactment (learning, alignment, and resource provision) and frontline

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execution conditions; and (3) to articulate a future research agenda. By focusing on Brazil as a case that combines relatively high-power distance and uncertainty avoidance with collectivist tendencies, the study addresses a gap in cross-cultural safety research that often treats cultural dimensions independently and relies heavily on evidence from low power-distance contexts.

In offshore operations, asset safety refers to the integrity, availability, and performance of safety-critical equipment and barrier systems (e.g., redundancy, critical spares, and maintenance of protective functions) that prevent loss of containment and other major hazards (Bubbico et al., 2020; Liu, 2020). Workplace safety refers to the prevention of harm to people during work execution (including exposure control, safe task planning, and adherence to procedures) (Christian et al., 2009; Nahrgang et al., 2011). The two are tightly coupled: degraded asset integrity increases exposure to hazards at the point of work, while unsafe work practices can compromise asset barriers.

While power distance and individualism are conceptually distinct, they often covary across societies (Hofstede, 2001; Katz-Navon et al., 2009; Hollnagel, 2014a). Low power-distance contexts frequently coincide with higher individualism; however, this pattern is not universal. France, for example, combines relatively high-power distance and individualism (see Table 1) and does not appear to face the same occupational fatality burden as Brazil in the sources cited (Hofstede, 2001). One possible explanation is that individualistic contexts may normalize speaking up and raising problems without the same fear of social or hierarchical sanctions. Consistent with this interpretation, our qualitative evidence suggests that empowerment, assertiveness, independence, and autonomy are important enabling conditions for operational discipline.

A recurring challenge in importing safety practices from other contexts is that many widely cited best practices were developed in relatively low power-distance, high-individualism settings where autonomy and voice are more readily institutionalized (Hofstede, 2001; Hollnagel, 2014a; Vashdi et al., 2013). In more collectivist contexts, however, the meaning and enactment of autonomy can differ substantially, and individual discretion may remain contingent on group norms and hierarchical endorsement (Schneewind, 1998; Parekh, 2000). This raises a set of research questions that motivate the present study: How can organizations increase frontline autonomy and safety voice in collectivist environments without eroding social cohesion? Do distinctions between institutional and in-group collectivism (House et al., 2004) capture the sense of powerlessness and upward dependency reported by Brazilian workers? And what are the consequences for operational discipline when stop-work authority—i.e., formal authority for any worker to pause an activity perceived as unsafe without fear of

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retaliation (Weber et al., 2018)—or learning routines are imported without adaptation to local cultural expectations?

The role of national culture in shaping workplace safety attitudes and practices is increasingly recognized, particularly in high-risk sectors such as oil and gas, power utilities, and mining (Mohammadi et al., 2018). A misalignment between everyday behavior and formal safety artifacts (e.g., procedures, checklists, and reporting routines) can lead to non-compliance and misinterpretation of safety norms and protocols, increasing the risk of accidents (Christian et al., 2009; Migueles & Zanini, 2024; Moreira et al., 2024; Yorio et al., 2019). From a business ethics perspective, this context highlights the need for safety approaches that are not only technically sound but also culturally sensitive and ethically grounded in duties to employees and other affected stakeholders (Freeman, 1984; Mitchell et al., 1997; Parmar et al., 2010). Accordingly, this research identifies organizational and cultural barriers that hinder the progress of safety precautions and asks why safety orientation can fail to improve despite being declared a value.

Throughout the article, we use the term EHS management system to refer to the formal set of policies, procedures, and routines intended to manage occupational risk and prevent harm. We use environment, health, and safety (EHS) to refer to the broader functional domain/department that includes occupational safety, health, and environmental protection. In participant quotations, the term EHS is retained as spoken and may be used colloquially to refer to safety-management practices more broadly; in the author text, we use MS when referring to the construct and EHS management system when referring to the formal safety-management system.

Building on this baseline, a growing body of research emphasizes that national culture shapes how workers interpret and enact safety protocols. Hofstede's (2001) cultural dimensions, for example, suggest that high power distance can discourage upward communication about hazards, while uncertainty avoidance can increase preference for formal rules and planning (Hofstede, 2001). Similarly, Qu and Yang (2015) found that collectivist orientations and social trust influence coordination and collaboration practices, which can condition the effectiveness of safety initiatives. Taken together, prior research suggests that the same safety approach (including how the EHS management system is designed and enacted) may produce different behavioral responses depending on national-cultural patterns of hierarchy, voice, and rule orientation (Noort et al., 2016; Yorio et al., 2019; Sun et al., 2022).

Gyekye and Salminen (2009) likewise noted that cultural values shape workers' perceptions of safe surroundings, influencing safety behavior. Despite this recognition, there

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remains a need to better understand how multiple cultural dimensions operate jointly—rather than in isolation—to shape safety-related decision-making and operational discipline in high-risk work systems (Noort et al., 2016; Yorio et al., 2019). Migueles and Zanini (2024), for instance, argue that national cultural variables such as power distance, uncertainty avoidance, collectivism, and trust can be particularly consequential in safety-critical contexts, yet the mechanisms linking these variables to day-to-day execution still require clarification (Rahim et al., 2024).

Although the impact of organizational contexts—such as trust levels, autonomy in safety decision-making, and the quality of leader–member exchange—is widely acknowledged, further research is needed to explain how these factors jointly influence reporting, learning, and accident prevention in culturally specific settings. Migueles and Zanini (2024) suggest that a combination of high power distance, strong uncertainty avoidance, and low trust can erode personal autonomy and commitment to continuous improvement. At the same time, stakeholder theory reminds us that safety failures impose harm on multiple stakeholder groups (employees, contractors, communities, regulators) and therefore create ethical obligations that extend beyond compliance (Freeman, 1984; Mitchell et al., 1997; Parmar et al., 2010). In parallel, contingency theory suggests that effective management practices are contingent on context, implying that safety leadership and safety systems must be adapted to the cultural and operational environment (Ayman et al., 1995; Fiedler, 1964). Despite the widespread use of Hofstede's framework, questions about its relevance across diverse sociopolitical contexts remain (Fougère & Moulettes, 2007). This study therefore examines whether the Brazilian cultural context—often characterized by higher power distance and stronger uncertainty avoidance—contributes to gaps between intended safety systems and actual practices in offshore operations.

Previous studies report relationships between power distance and accident rates (Hämäläinen et al., 2006), yet the mechanisms remain contested. Building on this gap, we examine how configurations of power distance, uncertainty avoidance, collectivism, and trust may contribute to the persistence of deviations and the gap between intended and realized safety performance in Brazilian offshore operations. In doing so, we respond to calls for culturally specific safety approaches that account for hierarchical coordination, communication norms, and locally salient constraints on participation and learning.

This article is organized as follows. Section 2 develops the theoretical foundations, integrating national culture, stakeholder theory, and contingency theory to motivate the research framing. Section 3 describes the research design and analytic approach. Section 4 reports the

seven empirically derived themes and interprets them in relation to cultural and organizational mechanisms that can enable or constrain operational discipline. Section 5 discusses how these findings extend existing work and what they imply for theory and practice. Sections 6 and 7 outline implications, limitations, and directions for future research.

2 THEORETICAL FRAMEWORK

Stakeholder theory highlights that organizational decisions are shaped not only by efficiency considerations but also by ethical responsibilities associated with power, legitimacy, and urgency (Mitchell et al., 1997). In high-risk sectors such as oil and gas, these responsibilities include building and maintaining a safety culture that is credible to employees and contractors and that reduces exposure to preventable harm (Parmar et al., 2010). More broadly, stakeholder approaches emphasize a moral obligation to avoid social injury and to protect well-being through decisions that recognize how risks and benefits are distributed across constituencies (Freeman, 1984; Jamali, 2008). This perspective is particularly relevant to safety management because it reframes safety outcomes as ethically consequential stakeholder impacts rather than as merely technical performance indicators. In summary, stakeholder theory highlights the importance of considering diverse stakeholders' interests, urgency, and legitimacy in organizational decision-making (Mitchell et al., 1997; Freeman, 1984), which raises an ethical dilemma: reconciling operational efficiency with the moral obligation to protect employee safety.

2.1 Organizational Culture

According to Schein (2010), organizational culture is defined as “the pattern of shared basic assumptions that a group has learned through its experiences of external adaptation and internal integration” (p. 33). Moreover, organizational culture is not static; it evolves as groups learn to navigate external and internal challenges. These assumptions influence decision-making and employee behavior. Organizational culture can be understood as the underlying social and cognitive structures that determine how members of an organization perceive, think about, and react to various work-related issues (Alvesson, 2012). Contingency theory (Fiedler, 1964) suggests that cultures with high uncertainty avoidance tend to favor structured safety procedures and strict rule-following to reduce perceived risks (House et al., 2004). Conversely, rigid protocols in cultures emphasizing autonomy and empowerment may be perceived as

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restrictive and provoke resistance (Hofstede, 2001; Migueles & Zanini, 2024), emphasizing the need for management strategies adaptable to the workforce's cultural values and expectations. Operational discipline may differ based on cultural contexts, with strict safety guidelines and structured procedures more readily embraced in societies with high uncertainty avoidance. Power distance can also influence leadership styles, with task-oriented leaders boosting group performance in high-control environments, while leaders focusing on building relationships may achieve better results in moderate-control environments (Fiedler, 1964). An authoritative leadership style may be necessary to enforce safety standards in high-power distance cultures. At the same time, a participative approach involving employees in decision-making is more effective in low-power distance settings.

Building on this contingency logic, we develop three context-sensitive expectations that guide interpretation of the qualitative findings. First, in high power-distance settings, safety communication and escalation are more likely to be effective when leaders visibly assume responsibility for decisions and provide explicit top-down authorization for speaking up and stopping work (while protecting workers from retaliation). Second, in collectivist settings, group-focused safety routines (e.g., team-based pre-job briefs, peer monitoring, and collective decision protocols) may be more readily adopted than purely individual accountability mechanisms, but they can also suppress dissent if conformity pressures are strong. Third, in high uncertainty-avoidance settings, detailed protocols, competence development, and clear planning routines can reduce perceived ambiguity; however, if rules proliferate faster than resources and learning capacity, compliance may become symbolic and increase workaround behavior. These expectations align cultural dimensions with ethical responsibilities to stakeholders (harm prevention) and with the practical requirement—emphasized by contingency theory—that safety systems must fit local patterns of authority, coordination, and risk interpretation.

2.2 Power Distance

Hofstede (2001) conceptualizes power distance as the extent to which less powerful members of a society accept unequal distributions of power. In workplace settings, higher power distance is commonly associated with stronger hierarchical dependency, deference to authority, and reduced upward challenge, which can shape safety communication and escalation. Prior research has linked higher power distance to less favorable safety perceptions among frontline workers compared with managers and, in some contexts, to poorer safety

outcomes (Hämäläinen et al., 2006; Noort et al., 2016). In the Brazilian case, this dimension is particularly relevant for understanding how approval structures, decision centralization, and perceived consequences for dissent can condition operational discipline and learning from deviations.

National culture can have consequential effects on safety performance when strong power asymmetries shape how people coordinate, comply, and respond to problems. In high power-distance contexts, employees may hesitate to question decisions or to escalate hazards, particularly when psychological safety is low. At the same time, operational discipline often depends on autonomy and empowerment at the point of work—especially when time pressure requires fast, informed judgment. In Brazil, organizational relationships are often characterized by visible hierarchical structures and personalistic leadership dynamics, which can create tension between expectations for autonomy and the practical dependence on managerial authorization (Migueles et al., 2007).

3 METHODS

3.1 Research Design and Procedure

Before the primary data collection, we conducted a pilot focus group to pilot-test and refine the discussion protocol and ensure alignment with the research objectives. The pilot session lasted 47 minutes and was included in the final dataset. Following the pilot, invitations were emailed to potential participants across multiple business units (onshore and offshore). Participants were selected based on role relevance to safety decision-making and availability during scheduled sessions. Participation was highest among managers and supervisors and lower among frontline staff, reflecting operational availability constraints. In the second half of 2019, we conducted approximately thirty focus groups, each lasting about 30–60 minutes, using a videoconferencing platform. Discussions followed a semi-structured protocol comprising twelve open-ended questions. Sessions were conducted in Brazilian Portuguese. Focus groups were selected using purposive sampling to capture variation in operational roles (managers, supervisors, technicians/engineers, and contracted personnel) and in unit context (multiple offshore units and an onshore support site). Invitations were distributed through unit leadership to ensure representation of key functions exposed to day-to-day safety decision-making. We considered data saturation to be achieved when successive focus groups no longer yielded substantively new second-layer themes in the coding (i.e., new sessions primarily reinforced

existing codes rather than expanding the thematic structure). In practice, saturation was assessed iteratively during transcription review and coding: after approximately two-thirds of the sessions had been coded, the codebook stabilized and only minor refinements were made, and the remaining sessions served to confirm theme robustness across units and roles.

3.2 Coding

Following Schneckenberg et al. (2019), we applied a two-stage thematic analysis. First, we conducted open and selective coding of each transcript to capture participants' interpretations of problems and their perceived causes (layer 3: social/cultural elaboration). Second, we used a word-frequency screening and grouping procedure to identify higher-level patterns (layer 2: socio-cultural themes), supported by qualitative analysis software. To interpret and label themes, we triangulated emergent codes with the cultural-dimension descriptions developed in the theoretical framework (e.g., power distance, uncertainty avoidance, collectivism/voice, and trust). Finally, we organized themes into broader structural domains (layer 1: cultural conditioning) aligned with Hofstede's dimensions and the trust construct discussed in the literature.

3.3 Ethical Considerations

All participants received information about the purpose of the study, the voluntary nature of participation, and the intended use of anonymized quotations in academic outputs. Verbal consent was obtained prior to recording each focus group. To protect confidentiality, transcripts were de-identified by removing names, unit-specific identifiers, and any information that could reasonably enable participant re-identification; quotations are therefore reported using focus group codes (e.g., FG#12). Audio files and transcripts were stored in access-restricted folders, and only aggregated results are reported. The study followed standard ethical principles for organizational research (respect for persons, beneficence, and confidentiality). Where required by institutional or corporate procedures, the research protocol was submitted for ethics/compliance review prior to data collection; no sensitive personal data beyond work-role context were collected.

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4 DISCUSSION AND RESULTS

The qualitative analysis was supported by qualitative analysis software, which facilitated systematic coding and descriptive word-frequency exploration. Figure 1 displays the word cloud generated from the focus group corpus and provides an initial visual summary of salient terms, with “people” appearing as the most frequent word.

Figure 1 – Word cloud

Source: Created by the author from research data using NVivo (QSR International), 2026.

Next, the transcripts were coded using Hofstede’s cultural dimensions (power distance, voice/individualism, and uncertainty avoidance) and a generalized (social) trust lens derived from Inglehart’s work (Hofstede, 2001; Inglehart & Welzel, 2005; WVS, 2018), and the emergent themes (layer 2) were further analyzed. Here, generalized (social) trust refers to the national-level propensity to trust others (Table 1) and is conceptually distinct from the organizational trust construct discussed as TRU (Section 2.1 and Section 5.4). In these analyses, we set aside the words “safety” and “risk” because they were central to the focus group prompts. As a result, references to “accidents,” “deviations,” and “incidents” were especially salient in the corpus. We also excluded the word “think” from final theme selection because it primarily captured conversational framing rather than substantive topics. Figure 2 presents the distribution of the remaining salient words.

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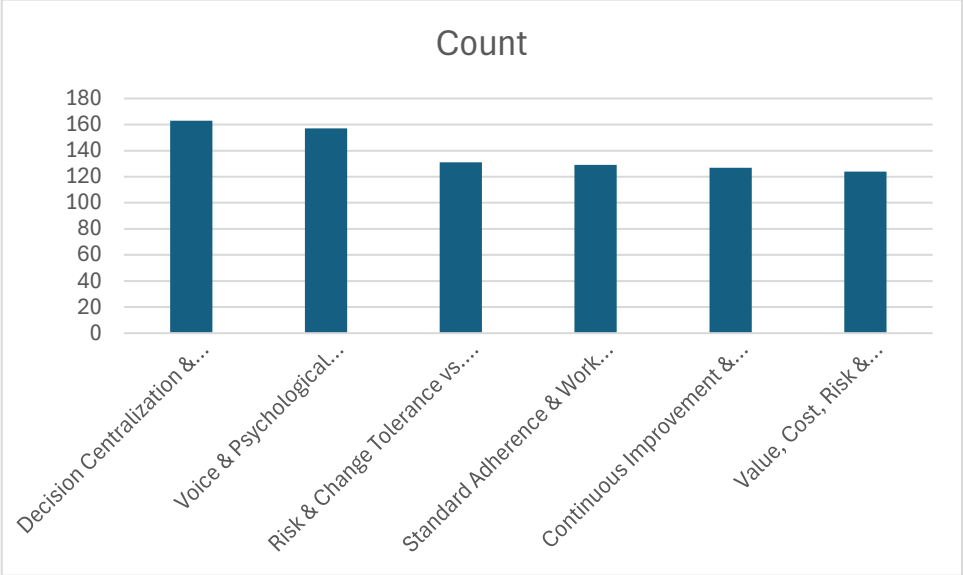
Figure 2 – Word frequency distribution



Source: Created by the author from research data using NVivo (QSR International), 2026.

Finally, after this first screening of the focus group data, seven main themes were identified: Decision Centralization and Upward Dependency (Power Distance), Voice and Psychological Safety (Voice/Individualism), Risk & Change Tolerance vs. Firefighting (Uncertainty Avoidance), Trust & Just Culture (Trust), Standard Adherence and Work Execution Conditions (Operational Discipline), Continuous Improvement & Alignment Mechanisms (Management Systems (MS)), and Value, Cost, Risk & Stakeholder Outcomes (Results). The themes that emerged from the dataset are summarized in Figure 2, which outlines the word frequency distribution after grouping significant words.

4.1 Decision Centralization and Upward Dependency

This theme emerged from the initial lexical screening, in which references to “leadership” and “management” were prominent in the corpus (see Figure 2). In Hofstede’s terms, these statements illuminate power distance as an everyday coordination mechanism: when decision rights are centralized and approvals flow upward, frontline teams may experience constrained autonomy and delayed problem resolution. From a stakeholder perspective, these constraints matter because they can slow hazard escalation and reduce responsiveness to stakeholder-relevant risks (Freeman, 1984; Mitchell et al., 1997). The quotations below illustrate hierarchical dependency, limited participation in decisions, and upward authorization requirements.

"What I feel in this process is that there is a very small participation of the offshore personnel when a new practice is drawn up." (FG# 8)

"It would be interesting to have a return for employees whether it would be possible to deploy or not, this is very aligned with active listening, but it would be a demand that the Manager would approve." (FG# 10)

"A decision made on land without consulting the units and soon after we saw that this was impossible for all units to meet this demand." (FG# 15)

"We talk, and we always try to act with safety as its first pillar, then reliability, then production, and when you look at the hierarchical structures and departments at the firm sometimes, we have focal points for various issues that deal with production, legal compliance." (FG# 10)

"There are sincere people, but they're afraid of the management, which drives people away." (FG# 6)

"There are many people unemployed, many people with low salaries, so there is a very great fear of the contractors, but hardly the leadership can see these concerns." (FG# 15)

"We had a supervisor of a unit who to expedite a process, even lost the function, because his attitude was considered unsafe." (FG# 25)

"Whenever we do a toolbox talk, we (leaders) encourage them (executers) to bring us the situations of deviations that they have found and corrected." (FG# 5)

Overall, these accounts suggest that high power distance can translate into operational bottlenecks (e.g., delayed approvals, limited participation in procedure design) and a perceived cost of speaking up. In the framework developed here, this pattern can weaken management-system learning loops and, downstream, operational discipline by encouraging workarounds when time pressure and hierarchical dependency collide.

4.2 Voice and Psychological Safety

Theoretically, these statements relate to voice and psychological safety—conditions that enable employees to report hazards, question weak rules, and surface latent problems before they become incidents. Under stakeholder theory, voice is ethically consequential because it affects the organization's capacity to prevent harm to workers and other affected parties (Mitchell et al., 1997; Parmar et al., 2010). Under contingency logic, the acceptability of speaking up depends on local norms about authority and dissent (Hofstede, 2001). The quotes

below illustrate both enabling practices (active questioning) and inhibiting conditions (fear of reprimand).

"One thing I noticed here is that there is a freedom to talk and access to people. In another unit I had a lot of difficulty talking to people. Here I think one has much more access with the manager, questioning things and decisions without being afraid." (FG#21)

"We try to have this practice and stay open to the questions and not feel uncomfortable if the questioning comes against what we think. The performers sometimes get shy, they listen more than they talk, but they are given good contributions when provoked to participate in the discussion." (FG#12)

"What bothered me, but we could not get answered was why the procedure was not being followed? Did the employee not understand the procedure, or did he not believe in the procedure, or had not participated in the elaboration and did not trust?" (FG#2)

"Our culture was not to ask, something that came up from school, not to seem that you know less than the other, as if asking a question was a demerit and actually is not." (FG#2)

"People cannot be afraid to expose themselves… when you ask a question it is a sign that you are being intelligent… insecure… the smartest attitude is to ask." (FG# 2)

These observations indicate that voice is not merely an individual trait but an organizational capability that must be legitimized by leadership routines and reinforced by non-punitive responses to questioning. In the framework developed here, stronger voice and psychological safety appear to enable management systems (e.g., feedback mechanisms and learning loops) and, in turn, support operational discipline through earlier detection and correction of deviations.

4.3 Risk & Change Tolerance vs. Firefighting

In cultural terms, the accounts below reflect tensions between uncertainty avoidance (preference for predictability through training, expertise, and rules) and change tolerance (ability to invest time in improvement rather than reactive problem-solving). In safety-critical systems, persistent firefighting can crowd out the resources needed to strengthen management systems—such as structured learning from incidents, competence development, and review of existing procedures (Hollnagel, 2014b). The following excerpts illustrate how participants described overload, constraints, and capability gaps (especially among contractors) that shape day-to-day risk management.

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"But what frustrates me nowadays is you do, do, then you squeeze what you did during the day and the feeling is that today we produce less, we do a lot, we run a lot after problems, but what you've done to move forward, to progress, ends up being less and less." (FG# 3)

"We have innovative ideas and demands coming from the operation, but in practice we are overloaded and constrained (contracts, legal locks, limited resources), so we often want to do differently and improve, yet we can't because we don't have the extra capacity/time to deliver what's needed." (FG# 3)

"This sometimes distresses because the supervisor has to stop what he is doing to teach the performer how to do the task." (FG#25)

"He was embarrassed, and we observed that he could not write, so sometimes we have a labor not so skilled and try to make a differentiated approach with these people, for they are there, like all of us offshore, at risk." (FG#16)

"In practice I ended up not being trained specifically for this role as a client inspector." (FG#9)

"We are having a problem with the current contracts, they are sending people without the minimum qualification required by law, they are sending professionals offshore without necessary qualifications." (FG#8)

"As it was a new person offshore, we put an experienced colleague, next to the professional of this firm, but even so the accident occurred." (FG#8)

Another cultural and organizational dimension is the belief in experts and technical solutions to avoid uncertainty and reduce risk. In contrast, some cultures tolerate more generalists, experienced members, and common sense. Regarding knowledge sharing and learning, some members of the focus groups indicated that they need more experience and training to deal with the challenges of their work. Some answers pointed to the lack of qualifications among contractors, with participants reporting that some contracted individuals were not able to write, which is not recommended by the firm:

Collectively, the quotes suggest that uncertainty is managed not only through formal training but also through informal compensatory work by supervisors and repeated procedural layering after events. In the framework developed here, this pattern implies a risk that management systems become additive (more rules) rather than integrative (learning and simplification), which may reduce operational discipline by increasing complexity and perceived impracticality of compliance.

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4.4 Trust & Just Culture

This theme focuses on trust and just culture—how rules are enacted, how resources are provided to comply, and how incidents are interpreted and responded to. Trust is central to both ethical and operational outcomes: stakeholders expect organizations to avoid harm, but prevention requires credible systems in which workers believe that reporting and compliance will be supported rather than punished (Freeman, 1984; Mitchell et al., 1997; Yorio et al., 2019). The quotations below illustrate perceived gaps between formal safety expectations and everyday conditions (e.g., time pressure, missing resources), as well as how workers interpret the behavioral roots of deviations and the role of leadership reinforcement.

"The issue of the procedure is essential, but also the commitment of people in the execution of activities, considering all aspects and also has an aspect that involves human factors, for example tiredness and mental states." (FG#15)

"I think our firm has the punitive culture on top of accidents. We had a serious incident and the whole chain (the manager, maintenance personnel) were blamed and I do not see how this punitive culture will contribute to reducing accidents." (FG# 14)

"We can't provide the personal protective equipment (PPE), or … comes a product different from the specified, or not came the spare, are issues that we are obliged to live with in everyday life and this can weaken our discourse…" (FG# 16)

"One thing I observe is that the worker needs to be encouraged, because even knowing that he needs to comply with the procedure, some do not feel comfortable because they are afraid that it will cause a delay." (FG# 23)

"Today the supervisor of the contractors is a mere requester of permit-to-work; he does not have time to accompany the team." (FG# 15)

"Often people are not complying with a simple procedure because they are in a hurry or tiredness, so it has a behavioral root." (FG#11)

"I think people end up violating procedures and creating shortcuts because they want to facilitate a certain task." (FG#1)

"Because people did not comply with the procedure the accident occurred, so I think we have to comply with the procedures." (FG#8)

In sum, participants portray trust as contingent on practical feasibility (availability of equipment and spares), consistent leadership messaging, and a non-punitive approach to learning. These accounts suggest that stronger trust and just-culture expectations can support

management-system enactment (e.g., credible investigations and learning from near-misses) and help sustain operational discipline rather than symbolic compliance.

4.5 Standard Adherence and Work Execution Conditions

Conceptually, this theme aligns with operational discipline: the capacity to execute work as intended under real constraints (time, staffing, redundancy, spares integrity) while maintaining standards. The first set of quotations emphasizes material and organizational conditions needed for disciplined execution (e.g., redundancy and supply integrity). The second set illustrates how team-oriented norms (collectivism, mutual care, and consensus) shape how people coordinate, share information, and decide whether to proceed or exercise stop-work authority—features that can either strengthen or weaken disciplined execution depending on how they interact with leadership and standards (Hofstede, 2001; Noort et al., 2016).

"Here we always preach that it is better not to meet a deadline, but not to have any EHS events than to do something very fast and create shortcuts with respect to complying procedures… in doubt stop… it is better to stop and do a better planning even if the deadline is extended." (FG# 1)

"We can not accept to operate on a platform without its redundancy that guarantees the continuity of the process, because when an equipment is missing or a critical item is delayed it creates operational discontinuities and increases risk." (FG# 3)

"Weaknesses in the supply chain—especially around specification and quality control—can introduce nonconforming components, which increases operational risk." (FG# 8)

"In my view one of the things that most collaborates in the development of safety in the facilities is the behavior of leadership—the way it puts safety as a priority… putting the value of safety again first." (FG# 3)

"If the operator when performing an activity feels uncomfortable in performing some activity, he has the prerogative of refusal or talking to a team to decide if he does the task in that condition." (FG#14)

"So today it feels like everyone is informed very quickly, and this can create pressure and competition about who communicates first." (FG#8)

"We have several friends who are really our friends of the chest, so we have to be attentive and diligent, pay attention to each other's, we have to have generosity." (FG#11)

"He is thinking what is happening at home, with the mother, with father, with children, so today one of the strongest factors is the emotional side of people." (FG#15)

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"For example, a problem that the person is going through, a problem with some family member, so this can cause even the person being trained not to have the mind in the situation and end up causing an accident or suffering an accident." (FG#15)

"We try to make them aware at this moment of arrival how important it is to have this collective thinking, that really needs to be transparent all the time, how much a lack of information or an omitted symptom can cause consequences for several people." (FG#17)

"To always have a collegiate decision and not act on impulse, because the mistake is sometimes in trying to solve a problem, it is not intentional." (FG#17)

"Often the person is afraid to say that he is able and ready to do it alone, because no one knows everything." (FG#17)

"The vision was almost as if the machine was more important and if the person did not serve, or if it crashed, it was just to change it, but now the focus is on the person." (FG#17)

"One suggestion I have is that one get recognized, even if it did not make a difference in the level advancement but showed the competence of the colleague." (FG#2)

"But we have to think that it is the people who carry out the processes, that the procedures are made for people to follow and in this sense, we need to involve them." (FG#3)

One important characteristic of certain cultures is the group approach regarding the management of the individual versus groups, tasks versus relationships, and handling of conflicts versus harmony.

These excerpts show that operational discipline is co-produced by (i) the availability and integrity of technical resources (redundancy, spares quality, and functional barriers) and (ii) the social conditions of teamwork, recognition, and collective decision-making. In offshore operations, these conditions are directly relevant to asset safety because degraded redundancy or counterfeit parts can compromise barrier integrity, and they are equally relevant to workplace safety because teams must be able to stop, reassess, and execute tasks to standard. In the framework developed here, execution conditions and team norms shape how management systems (planning, standards, feedback) translate into disciplined work practices at the front line.

4.6 Continuous Improvement & Alignment Mechanisms

This theme corresponds to Management Systems (MS) as an organizational capability: the routines that connect learning, standards, investment decisions, and cross-unit integration so that safety intent becomes repeatable practice. In stakeholder terms, these alignment

mechanisms matter because weak learning loops and slow corrective investment can prolong exposure to known risks, increasing ethical and operational costs (Freeman, 1984; Parmar et al., 2010). The quotes below illustrate both enabling mechanisms (e.g., active listening and learning across units) and constraints (e.g., procurement delays, workload, and limited analytical support).

"We try to learn both from the mistakes of others (other units) and from the active listening of our teams, using that feedback for improvements and review of procedures and standards." (FG# 1)

"We have many practices and the practices themselves are good, but I don't see them acting as a system—things could be better chained up so that one thing would talk to the other." (FG# 1)

"We try to understand the level of safety not only through accident rates, but also through deviations, incidents, and the availability of critical elements… accident rate is just one aspect and needs other parameters." (FG# 2)

"When it takes too long to procure or mobilize what is needed to fix a known issue, we end up operating with degraded redundancy for longer than we should." (FG# 3)

"Sometimes, out of a thousand suggestions, two or three come out with suggestions that we can use to implement some innovation." (FG#20)

"But what I see is that the projects still come with many failures that can generate accidents, especially with regard to people traveling offshore to work." (FG#20)

"We have a lot of infrastructure problems and integrity improvement, but I have limited offshore capacity, so I have to do it in a way that I can improve on safety…" (FG# 1)

"We should always try to understand the root cause, understand what happened and not just what is most apparent." (FG#14)

"Why doesn't the central EHS function deepen the analysis of incidents and deviations? In another unit they studied them and advised us!" (FG#14)

"Some processes that should happen in the onshore support site are taking place offshore… we are inserting new processes and not reviewing the old ones." (FG# 8)

"We have a very large workload. Even so we do not take the focus out of safety, but it is difficult for managers and coordinators to cope with their routine." (FG#8)

In sum, participants describe management-system effectiveness in terms of speed (how quickly problems are corrected), integration (whether practices "talk to each other"), and analytical feedback (how incidents and deviations are studied). For both workplace and asset safety, these routines matter because delays in corrective investment, procurement, and

maintenance planning can leave critical barriers degraded, while weak learning loops can allow hazardous work practices to persist. Taken together, the accounts suggest that more integrated and learning-oriented management-system routines can reduce reactive firefighting and support more disciplined execution, with implications for outcomes that matter to stakeholders (e.g., harm prevention, reliability, cost, and risk).

4.7 Value, Cost, Risk & Stakeholder Outcomes

This theme makes explicit how participants evaluate trade-offs among cost, time, reliability, and residual risk—i.e., outcomes that directly affect multiple stakeholder groups (workers and contractors, the firm, customers, regulators, and surrounding communities). In offshore operations, these results also include asset safety outcomes: reliability and availability reflect asset performance, and chronic underinvestment, delays, or shortcuts can increase exposure to barrier degradation and major-accident risk. These accounts further highlight how bureaucratic load, approval delays, and productivity pressure can create incentive conditions for shortcuts, thereby shaping the realized level of operational discipline and safety performance (Hopkins, 2019).

“To continue is to decide if it is worth taking the risk, because there will always be some residual risk.” (FG# 3)

“I do not know if we can reconcile cost with EHS… because I see that everything costs money.” (FG# 8)

“Increased safety cannot be antagonistic to productivity; we need to improve safety and improve productivity.” (FG# 1)

“The fact is that we have these onshore structures that end up relieving bureaucracy and paperwork that we have to solve and give us more time to be on the front and this generates that energy to solve the activity.” (FG#2)

“The second point I wanted to talk about is bureaucratic overload, but this is sometimes incompatible with what the firm says of presence in the area, because there is rather a large burden on the bureaucratic part, the volume of demand that comes to us as leadership is significant.” (FG#13)

“Everyone expects a document to be approved; you want to bring safety, but it generates so much anxiety for everyone who is waiting for approval.” (FG#6)

“Those rules that do not matter end up in people seeking shortcuts. Often thought that is being pushed for more productivity.” (FG#6)

"We have to think that leadership sometimes wants it fast, or the employee felt cornered that they have to deliver it, put it in the balance and stopped following a rule to do that thing they were asking for." (FG#13)

"There are people with little field experience… [who] send suggestions for ineffective things that loses the credibility of those on the platform." (FG# 3)

In sum, the outcomes' theme illustrates how results are experienced as a bundle of interdependent targets: production and cost pressures interact with risk acceptance, bureaucracy, and credibility of decisions. In this study, Results (RES) refers to a combined set of stakeholder-relevant outcomes that participants repeatedly invoked—workplace safety (harm prevention and safety/environment/community impacts) and asset safety (reliability/availability and the control of major-accident exposure through barrier integrity). The accounts also indicate that perceived outcomes are shaped by Management Systems (MS) and Operational Discipline (ODI): when systems are under-resourced or poorly integrated, barriers can degrade and shortcuts become more likely, with consequences for both asset performance and safety. Because objective performance data (e.g., standardized accounting indicators such as ROA/ROE) may be unavailable or not comparable across heterogeneous units, researchers often rely on participants' perceptions to capture operational performance, reputation, and value dimensions (Galant & Cadez, 2017; Robinson & Pearce, 1983). We also include stakeholder-facing and intangible outcome dimensions (e.g., reputation and customer value), consistent with research linking intangible assets and organizational practices to performance outcomes (Aaker, 2003).

We emphasize how cultural dimensions interact rather than operate independently, and we identify implications for importing safety practices from other contexts—particularly in high power-distance and high uncertainty-avoidance environments such as Brazil. Consistent with the framework developed here, we interpret Management Systems (MS) and Operational Discipline (ODI) as foundational capabilities through which culture shapes both safe work execution and the integrity of critical asset barriers.

Compared with cross-national safety research, our findings are consistent with studies showing that power distance can inhibit hazard escalation and upward communication when voice is perceived as risky (Noort et al., 2016; Yorio et al., 2019). They also align with evidence that psychological safety supports safety voice and learning behaviors (Sun et al., 2022), including recent evidence from high-reliability settings linking upward voice to safety performance via team learning (Silla et al., 2025). In addition, recent work emphasizes that stakeholder priorities shape preferences for safety culture attributes in oil and gas contexts

(Rahim et al., 2024). In the Brazilian case, however, managerial "open door" practices were often described as insufficient when approvals and decision rights remained structurally centralized; under time pressure, workers may still wait for hierarchical authorization before acting (e.g., FG#8 and FG#10, Section 4.1). Accordingly, interventions imported from low power-distance environments (e.g., stop-work authority) are unlikely to become routine when they are imported without adaptation, unless they include explicit top-down legitimization and credible protection from retaliation.

Practically, the results suggest actionable guidance for managers and policymakers in high power-distance and high uncertainty-avoidance settings, including: (i) make escalation pathways (including stop-work authority) explicit, leader-endorsed, and protected from retaliation; (ii) use group-based safety routines that leverage collectivist norms while preserving structured dissent; and (iii) prevent rule proliferation from becoming bureaucracy by coupling protocol changes with resources, competence development, and feedback loops. Across all three, management-system decisions about maintenance, redundancy, spares, and procurement should be treated explicitly as asset safety decisions that also shape workplace safety exposure at the point of work.

4.8 Power Distance

The findings suggest that power distance can undermine coordination and learning by concentrating decision rights and increasing perceived risks associated with dissent. Participants described situations in which issues were surfaced but required multiple hierarchical approvals to resolve, reinforcing dependency and delaying corrective action (e.g., FG#10, FG#15, and FG#6, Section 4.1). Related accounts also highlight limited participation in designing new practices and procedures, which can further weaken ownership and implementation under time pressure (e.g., FG#8, Section 4.1). This pattern is consistent with prior work indicating that power distance can suppress voice and weaken hazard escalation (Noort et al., 2016; Yorio et al., 2019). In practice, it implies that initiatives designed to promote open communication may be insufficient unless they are coupled with structural changes (e.g., clearer decision rights) and credible protections against retaliation.

A related implication is that safety practices imported from other contexts may be interpreted differently in Brazil. Several accounts suggest that workers can articulate the language of autonomy and participation, yet still experience limited discretion in implementation when authorization remains centralized. This disconnect can produce a form of

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"symbolic adoption," in which practices are formally present but weakly enacted under time pressure and hierarchical dependency. The findings therefore reinforce a core contingency argument: effective safety interventions require local fit not only in technical design but also in authority relations, communication norms, and decision structures (see the consolidated practical recommendations in Section 6.2).

4.9 Uncertainty Avoidance

Uncertainty avoidance is frequently used to explain cross-national differences in safety practices because it captures preferences for predictability, planning, and rule-based control under perceived risk (Hofstede et al., 2010; Noort et al., 2016). In our data, participants repeatedly linked risk management to the quality and practicality of procedures, as well as to the availability of training and competence development. At the same time, several accounts suggest that when time pressure is high, rule compliance can become fragile, increasing the likelihood of shortcuts and deviations.

Beyond formal protocols, participants emphasized training and day-to-day task demands as key instruments for managing uncertainty. However, the evidence also points to a paradox: additional rules and controls may be introduced after incidents, yet if these requirements are not matched by time, staffing, and learning capacity, they can increase workload and frustration. In such circumstances, procedural complexity may incentivize informal workarounds, especially when production demands and approval delays compress available time (e.g., FG#3 and FG#25, Section 4.3; FG#11, Section 4.4; FG#6, Section 4.7). This dynamic aligns with research suggesting that excessive bureaucracy can undermine the credibility and enactment of safety rules in practice (Hopkins, 2019).

In high power-distance settings, these pressures may be amplified because problems are escalated upward while frontline teams have limited discretion to resolve them locally. As a result, managers can become absorbed by short-term coordination and administrative demands, reducing the time available for learning-oriented activities. Over time, this can reinforce a familiar loop: adverse events prompt additional rules and documentation, which increases bureaucracy and paperwork burden, weakens trust in the practicality of the system, and can ultimately encourage symbolic compliance or workarounds.

4.10 Collectivism/Individualism

The findings indicate a strong emphasis on collectivist coordination in day-to-day work, alongside comparatively limited reference to individualist mechanisms such as autonomy, assertiveness, and independent voice. Participants frequently described family-like bonds, peer support, and consensus-oriented decision-making, which can strengthen mutual monitoring and shared responsibility (e.g., FG#11 and FG#17, Section 4.5). Related excerpts also emphasize the value placed on collective information sharing and transparency as mechanisms to protect the group (e.g., FG#17, Section 4.5). However, the same group orientation may also inhibit dissent when raising concerns risks disrupting harmony. This helps explain why "speaking up" initiatives imported from individualist contexts may encounter resistance or anxiety unless they are reframed as collective protection practices and explicitly legitimized by leaders.

This dynamic is illustrated by stop-work authority, which grants employees the right to halt an activity perceived as unsafe (Klein et al., 2011; Weber et al., 2018). Such practices often assume that individuals feel sufficiently empowered to act independently of the group and without fear of sanction. In collectivist and high power-distance contexts, however, exercising stop-work authority may remain contingent on group endorsement and managerial support, which helps explain why formal policies can be unevenly enacted in practice (e.g., FG#14 and FG#1, Section 4.5).

4.11 Trust

The findings suggest that low trust is intertwined with uncertainty avoidance and influences how structured processes are interpreted and enacted. Where trust is limited, participants described reduced autonomy and assertiveness, greater fear of blame, and stronger dependence on formal rules and approvals (e.g., FG#14, Section 4.4; FG#6 and FG#15, Section 4.1). Evidence related to training and competence gaps (Section 4.3) further indicates that capability shortfalls can become a source of frustration when the system is not trusted to address them consistently. Prior research shows that trust supports learning, coordination, and the credibility of change initiatives (Doney et al., 1998; Kähkönen et al., 2021). Accordingly, structured safety processes are more likely to be enacted as intended when they are paired with credible leadership behavior, fair incident response, and participation mechanisms that increase workers' confidence that reporting will not lead to punitive outcomes (e.g., FG#14, FG#16, and FG#23, Section 4.4).

4.12 Limits of National-Level Culture Measures

These findings also invite reflection on the limits of applying Hofstede's model as a direct explanatory device in sector-specific environments. Although Hofstede's cultural dimensions offer a parsimonious national-level framework (Soares, 2007), they can oversimplify cultural dynamics in industries characterized by high operational interdependence and heterogeneous workforces. In oil and gas operations, for instance, national-cultural tendencies can interact with organizational subcultures, professional norms, and multinational work arrangements, producing patterns that differ from aggregate national profiles. The focus group evidence illustrates such heterogeneity in practice, including differences in voice climate across units (e.g., FG#21, Section 4.2) and capability gaps across contracted work arrangements (e.g., FG#8 and FG#16, Section 4.3). Moreover, Hofstede's framework tends to treat cultural dimensions as relatively stable and homogeneous within countries, which may understate variation across regions, organizations, and teams and the possibility of cultural adaptation through sustained interaction. Accordingly, research that examines cultural exchange, hybrid identities, and subcultural differentiation may offer a more fine-grained account of how safety practices are enacted in multinational and high-risk settings.

Consistent with this view, Hofstede's national-level emphasis may overlook micro-level cultural variation within organizations and across occupational groups. To address this limitation, future work could use designs that attend to multiple levels of cultural influence (e.g., subnational, organizational, and team dynamics), including comparative qualitative studies and, where appropriate, complementary designs that examine boundary conditions (Olowookere, 2021). In addition, Hofstede's framework is sometimes interpreted deterministically, as if national origin predetermines behavior. In contrast, our perspective emphasizes cultural plasticity: actors can negotiate norms, adapt routines, and develop context-sensitive strategies that reconcile safety objectives with locally salient expectations about authority, coordination, and risk.

5 RESEARCH IMPLICATIONS AND LIMITATIONS

5.1 Theoretical Implications

From a stakeholder perspective, the findings underscore that safety is an ethically salient domain of decision-making because failures impose harm on multiple stakeholder groups

(Parmar et al., 2010). The themes identified here suggest that culturally patterned authority relations and communication norms can shape whether organizations are able to enact their moral responsibility to protect employees and contractors through credible systems for prevention, learning, and responsiveness (e.g., feasibility and resource constraints: FG#16, Section 4.4; punitive response concerns: FG#14, Section 4.4; productivity–rule tension: FG#6, Section 4.7; delays in corrective action and resourcing that prolong degraded barrier conditions: FG#3, Section 4.6).

Contingency theory further suggests that safety management practices should fit the cultural and operational context rather than follow a universal template (Ayman et al., 1995). In this study, the Brazilian offshore setting illustrates how cultural dimensions shape the enactment conditions of management-system routines (e.g., learning loops, escalation pathways, and resource allocation) and thereby condition operational discipline (e.g., centralized approvals: FG#10 and FG#15, Section 4.1; voice norms: FG#12 and FG#21, Section 4.2; firefighting/overload: FG#3, Section 4.3). More broadly, the results help explain why comparable safety interventions may yield different outcomes across countries: national-cultural patterns influence how authority, voice, and uncertainty are interpreted and enacted, changing the effectiveness of communication, enforcement, and improvement routines.

5.2 Practical Implications

The findings indicate that safety-related operational discipline in the Brazilian case reflects a recurring configuration: hierarchical dependency that constrains discretion, collectivist coordination norms that can both support teamwork and suppress dissent, strong uncertainty-avoidance preferences for formal rules and planning, and trust/just-culture expectations that depend on feasibility and fair response (e.g., hierarchical approvals and dependency: FG#10 and FG#15, Section 4.1; collectivist coordination: FG#11 and FG#17, Section 4.5; firefighting/overload: FG#3, Section 4.3; feasibility/just-culture concerns: FG#14, FG#16, and FG#23, Section 4.4). These cultural and organizational conditions shape whether management systems (learning, alignment, and resourcing) translate into reliable work execution and barrier integrity. Accordingly, practical improvements should focus less on importing safety practices from other contexts as-is and more on adapting them to local authority relations, communication styles, and capacity constraints.

More specifically, the evidence suggests that national-cultural dimensions (power distance, collectivism/voice, uncertainty avoidance, and trust) and organizational conditions

(engagement, empowerment, autonomy, and learning routines) jointly shape how safety practices are enacted. Focus-group discussions contained limited spontaneous reference to individualist mechanisms such as autonomy, independence, empowerment, and voice—attributes that are often implicit in Anglo-Saxon safety-management discourse. This difference matters because interventions that presume high individual discretion (e.g., stop-work authority) may be endorsed in principle yet remain difficult to enact without explicit hierarchical legitimation and psychologically safe conditions. To support the responsible adaptation of safety practices across contexts—while avoiding bureaucratic overload—three practical implications emerge. First, escalation pathways (including stop-work authority) appear more likely to become routine when they are clearly communicated as leader-endorsed rights and when organizations monitor for retaliation or informal penalties that undermine voice. Second, group-based safety routines can harness collectivist norms (peer cross-checks, team-based risk reviews) while also protecting structured channels for dissent (e.g., designated "red flag" moments where disagreement is explicitly invited). Third, participants' accounts caution against rule proliferation without parallel investment in resources, competence development, simplification, and feedback loops; otherwise, paperwork burdens may incentivize shortcuts and erode trust. Across these implications, management-system decisions about maintenance, redundancy, spares, and procurement can be treated explicitly as asset safety decisions that also shape workplace safety exposure at the point of work.

5.3 Limitations

This study has limitations related to its qualitative design, including purposive sampling, participant availability, and the focus on a single operator's onshore support site and offshore operations in Brazil, which constrains transferability to other contexts. Although the number of focus groups is substantial for qualitative research, the design does not allow claims about how strongly the identified mechanisms operate across populations or settings. Future research could broaden the evidence base across organizations and countries through comparative qualitative designs and other complementary approaches that help clarify boundary conditions. In addition, future work could further disentangle individualism/collectivism dynamics in safety practice and more clearly differentiate Hofstede's uncertainty avoidance from operational risk constructs as used in safety and reliability scholarship. Overall, the study represents a step toward understanding how national and organizational culture shape management systems and operational discipline in the oil and gas industry.

5.4 Future Research Directions

Future research should focus on three main directions. The first requirement is to empirically validate the proposed framework to demonstrate its effectiveness in retail and consumer environments. The second step involves creating and testing the Design Science Research Effectiveness Scale (DSRES), which functions as a measurement system to evaluate DSR results. The research examines variations in DSR performance between developing and established markets by assessing market characteristics.

6 FINAL CONSIDERATIONS

In conclusion, this study clarifies how national-cultural dimensions can shape the practical enactment of workplace and asset safety in a high-risk, safety-critical setting. Drawing on focus-group evidence from Brazilian offshore operations, we identified seven themes that specify mechanisms linking culture to management-system enactment and operational discipline—particularly through hierarchical dependency, voice conditions, trust/just-culture expectations, and the capacity to sustain learning rather than firefighting. These findings contribute to business ethics by framing safety as a stakeholder obligation that depends on credible organizational conditions for harm prevention, not only on formal compliance. The study also supports a contingency view: culturally "portable" safety practices require local fit in authority relations, group norms, and uncertainty management.

Overall, the contribution of this article is qualitative: it offers a context-sensitive explanation of how national-cultural patterns are enacted in safety-critical work, clarifying when ethical intent is likely to translate into operational discipline—and when it is likely to break down.

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