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**The Impact of Occupational Safety Practices and Their Challenges on Improving the Work
Environment in Oil Refining Companies: An Applied Study in the City of Yanbu**

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عنوان البحث

أثر ممارسات السلامة المهنية وتحدياتها على تحسين بيئة العمل في شركات تكرير النفط: دراسة تطبيقية في مدينة
ينبع

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Introduction

The oil and gas industry is universally accepted as one of the most dangerous industries because of the nature of its productions that entail use of flammable compounds, high pressures and complicated machineries. Occupational health and safety (OHS) has therefore been developed as a very essential aspect in the well-being of employees and sustainable nature of activities undertaken in this industry. The world is now spending a lot on ensuring that there are effective safety measures set in place as a way of curbing the number of accidents and occupational illnesses in the work places. Nevertheless, the industry has maintained several challenges in the complete application and maintenance of these safety measures despite the enhancement in technology and regulation strategies. Kelechi and Faith (2023) argue that although numerous enterprises within oil and gas sector are equipped with well-elaborated risk and management strategies and safety measures, the real-life practice may be underdeveloped because of a number of systematic and operational constraints. Such obstacles comprise the lack of proper training, enforcement tools, deficient safety culture and investment in prevention measures. These challenges do not only put employees at risk of physical injury but it also raises the chances of unsuccessful operations and loss of definite incomes.

In this global scenario, the Middle East and Saudi Arabia in particular is a special case owing to the fact that Middle East is a major producer of oil and is dependent on petrochemical industries. The Kingdom had exerted great efforts to harmonize industrial practice with the international safety standards especially in areas that are considered industrial centers like the city of Yanbu. The Royal Commission for Jubail and Yanbu (RCJY) operates Yanbu Industrial City that consists of some of the largest oil processing refineries and petrochemical plants in the area. This set of facilities functions in an environment, which is characterized by focus on productivity, efficiency and responsibility in terms of environment. Nonetheless, just like it is the case in most other industrial areas across the globe, the topic of occupational safety has become an eminent issue.. Although regulatory bodies and corporate entities have established guidelines for workplace safety, the actual enforcement and adherence to these practices vary considerably across different organizations.

The research conducted by Bo Bo Oo (2022) highlights the influence of occupational health and safety behaviors on employee motivation and performance, according to which, workers, who feel secure in their work environment, are more willing to display a higher level of engagement, productivity, and loyalty. Such correlation is especially important in the so called high-risk industries e.g. oil refining where

employee morale may be directly affected by the inadequacy of safety measures felt. That absence of the adequate means of security may result in lack of motivation, high turnover rates and decreased performance rates. This, in its turn, impacts not only continuity of operations but also image and even reputation of the concerned companies. Hence, to provide safe working environment is not a regulatory requirement but a strategic need that conforms to human, as well organizational outcomes.

The dilemma faced especially in developing countries especially those with high rate of industrialization lies in the aspect of developing the economy as well as ensuring that the safety concerns are well taken care of. Anbessie (2019) states that old safety structures, insufficient training prospects and absence of organized safety review are common issues in numerous industrial enterprises. This is coupled by the fact that managerial attitudes focus more on the production targets than welfare of employees. Although this kind of attitude can lead to short-term gains, then the risks should be kept in mind about workplace accidents, legal liabilities, and worker satisfaction which are considered long-term risks. This can be disastrous in case of oil refineries in which risk factor is itself very high. Among other possibilities, scarcity of safety management may result in fires, explosions, toxic leaks, mechanical failures, and so on.

In Saudi Arabia, the Vision 2030 has taken serious concern in enhancing the quality of life that encompasses the working conditions of different sectors. The initiative aims at promoting companies to arrive at optimal practice in career well being and occupation condition improvement and in modernizing career safety frameworks. As in the case of industrial cities such as Yanbu, this gives a chance to evaluate and improve the existing situation with regard to safety practice, of the oil refining industry. The companies are bearing the assumption of making safety part of their strategic planning as well as their operational routines. This not just includes only the national regulations but also the international ones like ISO 45001 occupational health and safety management systems.

However, challenges discovered during the implementation of these frameworks come up. Some firms will not have the needed technical knowhow and others might not gain cooperation of employees and the employees might consider the new safety measures as being a burden and not necessary. The safety initiatives may also be compromised by budget limits, bureaucratic sluggishness, and disjoint communication pathways. In that kind of situations, it is important to come up with empirical studies that capture the lived experiences of employees and managers of such environments. In this way, researchers will be able to determine the concrete enablers and the barriers of proper safety practice implementation and suggest the specific interventions that can be proposed in accordance with company resources and employees demands.

The proposed study will focus on an area of knowledge that is already established i.e. the study of how occupational health and safety practices are being undertaken in oil refining companies within the Yanbu region, and how the same is impacting on the quality of the working environment. The study will not only be concentrated on finding out the current practices but also go deeper to look at the impediments that are impeding the effective implementation of the practices. In addition, the research shall explore the attitude of the workers towards workplace safety, their involvement in safety programs and how safety aspects have influenced their performance at work and overall well-being. By adopting a case study approach within the unique industrial context of Yanbu, the research aims to provide practical insights that can inform policy development, managerial strategies, and employee training programs.

Finally, the present study aims at outlining the importance of occupational health and safety in determining the working environment in high risk sectors like oil refining. As it could be observed in the past literature, safety, or a priority and well-managed one, generates a domino effect that positively affects numerous other variables such as employee morale, efficiency, and resilience. On the contrary, the impact of ignoring safety may be disastrous that goes beyond the direct physical injury to the workers. Thus, it is crucial to explore how safety practices operate and what complications revolve around them in order to create an environment that is sustainable and productive in the industrial system of Yanbu and other places.

Research problem

Even though in high-risk industries like oil refining, much is understood about the significance of occupational health and safety (OHS) issues, a number of organizations still experience tremendous difficulty in the implementation of the safeguards that help in the protection of employees as well as the improvement of the working environment. In such industrial centers as Yanbu which is the hub of large scale oil refineries where the very core of the local and national economy revolves; this settlement provides a safe and healthy working environment, which is not merely a legal or ethical requirement but also a strategic need. Nevertheless, it is not rare to see the significant difference between the stated safety policies and practices on the field. Lack of enough training, employee participation, enforcement mechanisms and availability of resources is against a successful implementation of OHS measures. Also, the understanding of workers on safety and their participation in achieving that has not been greatly discussed in the Saudi industrial environment.

This study therefore seeks to address the following central research question:
How do occupational health and safety practices, along with their associated challenges, influence the improvement of the work environment in oil refining companies in Yanbu?

Significance of the Study

1. Scientific Significance

- Enhances academic understanding of how occupational health and safety (OHS) practices influence work environments in high-risk sectors, particularly in the oil refining industry.
- Fills a gap in the literature by focusing on the context of Yanbu, a key industrial city in Saudi Arabia, which has not been extensively explored in prior research.
- Contributes to the body of knowledge concerning the relationship between safety management systems and employee well-being in the Middle East.
- Provides empirical data that may support the development of theoretical models linking OHS practices to organizational performance and safety culture.

2. Practical Significance

- Helps safety managers and decision-makers in oil refining companies identify key challenges and weaknesses in current safety practices.
- Supports the design of more effective, context-specific strategies to enhance workplace safety and employee engagement.
- Offers actionable recommendations for improving safety training, communication, and compliance mechanisms within industrial settings.
- Assists regulatory bodies and policymakers in refining national safety standards and enforcement strategies based on real-world data from a strategic industrial zone.
- Contributes to the broader goals of Saudi Vision 2030 by promoting safer, more productive, and human-centered work environments in vital economic sectors.

Objectives of the Study

- To examine the current occupational health and safety (OHS) practices implemented in oil refining companies in Yanbu.
- To identify the main challenges and obstacles that hinder the effective application of safety measures in these companies.
- To assess the impact of OHS practices on the quality of the work environment and employee well-being.
- To explore employees' perceptions and attitudes toward workplace safety protocols and culture.
- To provide practical recommendations for enhancing safety performance and creating safer work environments in the oil refining sector.
- To contribute data-driven insights that support the development of improved safety policies and training programs tailored to the Saudi industrial context.

Research Questions

Main Research Question:

- How do occupational health and safety (OHS) practices, along with their associated challenges, influence the improvement of the work environment in oil refining companies in Yanbu?

Sub-Questions:

- What are the current OHS practices implemented in oil refining companies in Yanbu?
- What are the major challenges that hinder the effective implementation of these safety practices?
- How do employees perceive and respond to the safety measures applied in their workplace?
- In what ways do OHS practices affect employee well-being, motivation, and job performance?
- What strategies can be adopted to overcome existing safety challenges and enhance the overall work environment in the oil refining sector?

Research Hypotheses

1. There is a significant positive relationship between the implementation of occupational health and safety (OHS) practices and the improvement of the work environment in oil refining companies in Yanbu.
2. The presence of safety-related challenges negatively affects the effectiveness of OHS practices in oil refining companies.
3. Employees who perceive their work environment as safe demonstrate higher levels of motivation and job performance.
4. Companies that invest in continuous safety training and awareness programs experience fewer workplace accidents and higher compliance with safety protocols.

Literature review

The correlation between occupational health and safety (OHS) practices and the quality of the work environment has always been of essential concern in industrial-type enterprises, in high-hazard environments, specifically, an oil and gas refinery. Employees in these environments continuously experience the risk factors of unsafe chemical handling, working at high temperatures, large equipment and operating processes that pose a risk not only to the personal safety but also to the operational integrity of the whole facility. In this research, implementation and challenges of occupational health and safety practices can be claimed to be an independent variable and include safety protocols, systems of risk management, training programs, compliance mechanisms, and the organizational safety culture. The dependent variable in its turn is improvement of working condition which is expressed in terms of employee well-being, satisfaction, performance, psychosocial comfort, and physical working environment. As it is evinced in the literature, there is a complex relationship between the two variables in that the relationship between these two variables vary depending on the context and on various external and internal factors.

Various kinds of literature have expanded on the nature and scope of OHS practices particularly in oil and gas industry. Kelechi and Faith (2023) critically analyzed the health, safety, and environmental risk management and identified the industry specific risks of noncompliance given to the regulations, poor emergency preparedness, and inability to consider environmental risks in the safety systems during oil and gas operations. Notwithstanding the fact that the industry has already established some advances in the standardization of safety worldwide, their research indicates that the practice of the real implementation remains highly fragmented in terms of accountability, and under-reporting of the near-misses. On the same note, Bo Bo Oo (2022), in the research conducted at Denko petrol stations, discovered that the most effective practices OHS are those that are embedded within the institutional safety culture instead of being separate policies. The research also highlights the role of leadership interest, constant training and participation of workers in safety promotion, which ultimately yields to better working motivation and morale among the employees. Oo's work further confirms that frontline workers are more likely to comply with safety protocols when they perceive management as genuinely committed to their well-being.

In a study work by Anbessie (2019) focusing on occupational safety and health management of the Chemical Industry Corporation in Ethiopia, his research results indicated that the organisation has systemic weaknesses that are typical of most developing economies. According to the results, safety outcomes were sorely compromised by the lack formal OHS structures, adequate inspection system, and

an evident lack of clear responsibility between managers. Besides, the study notes that where such safety training exists, it is usually outdated, academic and does not incorporate the dangers peculiar to individual plants. The insights are consistent with the general discussion that associates performance of OHS practices with the level of commitments to institutions and local adaptations. This is especially applicable in the area like the Yanbu, where the local policies have to comply with international norms, but also have to take into consideration the specifics of Saudi industrial environment.

On a different level outside the operations, the question on strategic incorporation of safety in organizational operations has been dealt with by scholars. Nwankwo (2020) also proposed a combined approach by creating a new model that combines process safety and climate change adaptation in the oil and gas sector; the author explained that process safety and climate change adaptation planning are not always sufficient because of the absence of long-term risk foresight. He points out that it is common in organizations to embrace short term adherence to safety measures but their systems are not flexible and resilient to general environmental and organizational processes. It is an indication that sustainability of OHS cannot be a minor compliance measure that is added to a company as an extrinsic objective since it is central to an organization strategic goals.

There are also other aspects through which the dependent variable of improvement of the work environment has been investigated. Naji et al. (2022) examined the psychosocial risks of the oil and gas sector and emphasized how inefficient communication within the organization, unsuccessful leadership, and unfavorable working environments become a source of stress, burnout, and mental exhaustion among workers. Their results present a strong argument in favor of a comprehensive view on the safety in a place of work that should address not only the physical safety but also maintain a psychological support. They arrive at the conclusion that the work on a better working environment should be directed towards the improvement of communication patterns, the load balance, the empathy of leadership of working individuals, the emotional safety, particularly, at the environment characterized by high pressure such as refineries.

The other main working environment is the design of the physical and an organizational working environment. When studying the issue of sustainability in Yanbu industrial city, Qaisaran and Al-Qurashi (2012) described a situation when the element of the environment, including water consumption, waste management, and overall infrastructure planning, plays a significant role in influencing the quality of industrial life. They may be more biased towards environmental sustainability in the context of their work, but they are important to look at in terms of generalizing the outside and inside factors influencing

each other. An industrial city which is clean and well planned has high probability of promoting organizations that value safety and well-being leading to a vicious circle of health and productivity.

Ajmal et al. (2022) explored the links between occupational accidents and safety management practice. The researchers discovered that the compliance of employees with safety procedures is greatly mediating the occurrence of accidents, and that this is influenced by the clarity of operational processes, the rate at which the training on these procedures is conducted and on perceived fairness of methods of enforcement. Their studies validate the fact that compliance does not only represent the effect of having a presence of a policy, but a consequence of active, engaged and informed employees. This association further highlights the fact that, although safety practices may result into improvements in the work environment being automatic by-products, they are contingent on the efficiency of the given practices and quality levels of the employee involvement.

Knowledge and attitude as determinants of safety outcomes were examined in a large study conducted by Quaigrain et al. (2022) with oil and gas employees in Ghana. The paper is an original experiment that proves that the knowledge of OHS standards and the attitudinal disposition of employees towards safety have a direct influence on their behaviours of complying with them. Those who still had no basic knowledge about hazards or considered safety measures useless were much more likely to break the procedure endangering themselves and others. Such results indicate the need to have sustained safety education campaigns by which the education must be accessible to the people and also culturally acceptable by the people, particularly in cultures that are multicultural as in the case of Yanbu.

Regarding the regulatory results, Acheampong and Kemp (2022) discussed health, safety, and environmental controls in the sector of offshore oil and gas located in the UK. In their longitudinal examination printed out a trend of positive attitude towards safety performance because of enhanced regulatory oversight, creation of privacy safety bodies and open reporting mechanisms. Nevertheless, they are also advising that regulation itself is not enough unless there is an internal organization change. This encompasses transition to proactive instead of reactive safety measures, growing funds devoted into stopping the hazards and increasing safety ownership culture across each echelon of the labor pool.

The use of digital systems to handle safety has not been left behind as far as the scholarly attention is concerned. AlMarri et al. (2025) examined how the enterprise resource planning (ERP) systems can be used to achieve improved health, safety, and environment (HSE) management. Digital solutions were proven to help real-time tracking of data, the automation of safety audits, and communication between departments, according to their study. They, however, indicated user adoption, training and accuracy of

data, and thus implied that the technology should be supplemented with human capacity-building activities. According to their research, although technology has the potential of improving the safety practices, its efficiency is subject to the organization preparedness and employee competencies.

A synthesis of the above literature is that there is a multi-faceted examination of the connection between OHS practices and the enhancement of the work environment. On the one hand, successful OHS practices, which are defined by the guidance-oriented leadership style, well-guided procedures, continuous educational activities, and the incorporation of the culture, act as catalysts in the construction of safe, healthy, and supportive working environment. Conversely, weak enforcement, employee reluctance to buy into the practices, inefficiency of existing systems, and shortages in resources are some of the hurdles that prevent the extent of positive influence that the practices can make. Another important information provided in the literature is that employee opinion is a mediating factor; the employee who feels safe and supported has higher chances to make a positive contribution to the workplace climate, whilst the one who feels neglected or unsafe is likely to disengage, which results in negative consequences.

To conclude, the currently available research body has rather strong grounds to state that occupational health and safety activities well organized and adjusted to the organizational and cultural environment may have a considerable improvement effect on the quality of the work environment in the oil and gas environments. Nevertheless, the mentioned arrangements only become advantageous in case the implementation opportunities are overcome, the engagement of people is addressed, and the safety will be associated with the overall organizational values and strategies. Yanbu is an industrial city with its strategic role and concentration of oil refining companies, and therefore, there is perfect ground to conduct empirical research that relates international best practices to local conditions. This study will contribute to an existing body of the literature in the sense that it shall expand on the available research material by giving a refined study on how safety practices and issues affect the working environment in Yanbu, which are academically sound and practically relevant.

Commentary on Previous Studies and Research Gap

The literature reviewed has given a clear picture of occupational health and safety (OHS) practices and ways in which they can affect the work places of different situations especially in the oil and gas industry. All these studies are helpful in providing explanation, on technical, organizational, and behavioral aspects of safety management. As a case in point, Kelechi and Faith (2023) have pointed out the intricacy of inclusive application of risk management structure within oil and gas activities, whereas Bo Bo Oo

(2022) has noted the impact of OHS on the formation of employee motivation and work engagement. Here other studies like Ajmal et al. (2022) or Quaigrain et al. (2022), discussed the combination of compliance, attitude, and the behavior of the organization in composite shaping the safety outcomes and operating employee behavior.

Also, studies by Naji et al. (2022) and Acheampong and Kemp (2022) highlight the importance of more significant psychosocial and regulatory factors that influence the OHS effectiveness, whereas AlMarri et al. (2025) presented the recent value of digital platforms in managing health and safety data. The combination of these works provides a strong basis of knowledge as to how OHS can be conducted in a manner that will improve the workplace results. Nonetheless, a majority of the researches are either hypothetical or on other located areas other than the Saudi region. In addition, most of them are focussed on the detail part of OH procedures like adherence to safety, training, or regulation rather than looking at it as a whole and having a situation-oriented analysis that would have a direct connection to enhanced workplace by means of OH practices and issues.

The obvious weakness in most of the available literature is the absence of a particular study on the industrial cities such as the Yanbu city which are major processing and refineries of oil as well as chemicals in Saudi Arabia. Although some research works such as that of Qaisaran and Al-Qurashi (2012) have imbibed a slight element of environmental sustainability in Yanbu, there is still a gross absence of empirical studies that explore the working environment of such industrial set up as Yanbu, in terms of the application of occupational safety practices that are on the ground. Moreover, there is the impact of contextual problems

Therefore, in the present study, a gap in the research topic is evident as the research is concerned with the overlap between the OHS practices and work environment enhancement of oil refining organizations located in Yanbu. It aims at rendering a domestic and operational insight in regard to the strategies of implementing safety, what the challenges are to it and the impact that all of it has on the health and performance of the staff. Through empirical observation of the real-world experience, the study would highlight new perspectives that prove to be valuable to scholars and the operations of industry leaders and policymakers.

Theoretical Framework of the Study

1. Understanding Occupational Health and Safety in the Oil and Gas Industry

Occupational health and safety (OHS) is one of such key pillars in the high-risk industries like oil and gas, where the daily activities of the industry subject workers to a great number of hazards, e.g. hazardous chemicals, flammable compounds, heavy-duty equipment, and high-pressure schemes. Safety in this context yields not only as a compliance issue but also as a strategic issue to the well being of employees as well as continuity of operation. Safety management systems in the oil and the gas production are complicated, where the risks are sought to be reduced and avoiding accidents. Nonetheless, as Acheampong and Kemp (2022) in their examination of UK Continental Shelf note, the conformity with regulatory recommendations does not inevitably lead to the decline in the rate of incidents. Although regulation is important to set the basic expectations and processes to follow, it rarely reflects cultural differences in organization and its leadership style as well as individual obedience. Their effort stresses that efficient safety performance is the product of a combination of regulation, monitoring, internal policy, and human interaction, which have to be theoretically taken into consideration within the area of investigation of OHS in the Kingdom of Saudi Arabia at the oil refineries.

2. Regulatory Models and Institutional Safety Frameworks

Regulatory-wise, the practice of health, safety, and environmental (HSE) in the oil and gas sector is bound to both international and local regulations that provide certain mandates on identifying the hazard, preventing the strains, training, and reporting the accidents. According to Acheampong and Kemp (2022), the regulatory institutions usually compose a mosaic of prescriptive and goal-setting methods. The former directs on certain procedures, whereas the latter focuses on results and accountability of the organization. In their work about safety of offshore oil, they discovered that although tighter control did induce certain performance advances, there was diversity in the way that such regulations were understood and applied between companies. This shows the necessity of the theoretical models which are flexible up to the extent of accepting the variety in the organizational reaction to regulation. In Saudi Arabia, such dynamics can be found, especially in industrial towns such as Yanbu where a mixture of national regulations regarding labor and international regulations in the field of safety are in effect. The theoretical framework of this research thus presupposes the assumption that the external regulation creates a structural background on which the organizational and human factors are deployed and influence the process of introducing and efficiency of the safety practices.

3. Safety culture and climate in the organization

The increasing amount of theoretical literature focuses not on the aspect of regulation but on the organization behavior, in particular, on the notions of safety climate and safety culture. Safety climate can be defined as the perceptions safety has in an organization by the workers, whereas safety culture can be described as deeper rooted shared values and norms that shape human behavior. The latter two of the constructs are imperative in considering safety practices as either vital or cosmetic to the work force. Naji et al. (2022) discuss such dynamics, investigating the impact of organizational communication and actions of leadership behaviors on the experience of psychosocial hazards among employees working in the oil and gas sectors. Their results indicate that individual employees tend to experience psychological security, respect and motivation when the leadership actively promotes safety programs, and promotes communication that is not only effective but also coherent and frequent. In theory, this implies that organizational climate plays the role of a moderating factor to interrelate formal safety systems with employee attitudes and behaviors. Safety climate and leadership behavior in conditions of the current study will also be core issues to the study of the impact of occupational safety on the general workplace.

4. Leadership and its Competence in Formulating Safety Practices

The importance of leadership theory in this process is the explanation of the adoption and maintenance of safety initiatives within organizations. Specifically, transformational leadership has been found to be a potent safety engagement driver because it stimulates proactive action, empowers workers, and cultivates a sense of the collective responsibility. Naji et al. (2022) asserted that visible safety commitments such as modeling the right behavior, providing rewards to the safe practice, and punishing unsafe behaviors make safety an organizational commitment that is shared by its leaders. They have pointed out the centrality of the communication as the means of supporting safety messages and building trust through their research. As far as this is concerned, leadership does not merely imply the issuance of orders but rather the establishment of psychological circumstances, where employees would feel competent and emotionally compelled to focus on safety. This theoretical approach forms an important input to the work environment, as witnessed in the oil refineries located in Yanbu, in which the hierarchical structure of the organization, whether it favors or opposes employee involvement in the safety systems.

5. Knowledge, Attitudes, and Individual Compliance

Organizational structures and leadership are only thought to be a precursor to individual behavior that then brings the strength of success or the failure of the safety intervention. The Theory of Planned

Behavior (TPB) presents a practical perspective with which one can gain insight on how individuals comply with OHS practices. This theory assumes that behavior has the shape of intention and due to intention, it is dependent on attitudes, subjective norms and perceive behavioral control. Quaigrain et al. (2022) used this theory in their research of oil and gas workers in Ghana, where the authors considered the influence of knowledge and attitudes on compliance. According to their findings, highly OHS-educated workers of positive safety-minded attitudes have high chances of following with protocols. On the other hand noncompliance tends to break rules when they feel that the safety measures are either not necessary or inconvenient. Such findings advocate the use of a theoretical approach that employs cognitive and motivational influences to the conceptualization of employee behavior. In the present case, the TPB model will assist in describing the influence of individual associations, planned by organizational communication and past experience, in the execution of the operations of safety practices in practical circumstances.

6. Quality of work environment and Psychosocial Hazards

Although the improvement of work environment, which is the dependent variable, in this study, is concerned with physical manifestations of the job environment, it also covers the psychosocial aspects of the kind of job, such as stress, job satisfaction, autonomy, and interpersonal relations. These constructs are theoretically based upon Job Demands-Resources (JD-R) model that proposes that work outcomes apply to the interaction between job demands (e.g., workload, pressure of time, hazards) and job resources (e.g., support, feedback, safety measures).

Naji et al. (2022) take this model to explain psychosocial hazards in the oil and gas industry and conclude that stress and mental fatigue among workers are exacerbated by weak leadership styles and poor communication as well as high pressure of operations. According to their study, strong safety systems should could be used to act as the job resources providing protection against negative impacts of job demands. Theoretically, this confirms the convention that safety is not only about avoiding accidents but rather, it is also about ensuring psychologically-facilitating work environment. This model fits well on the industrial sector in Yanbu considering that the work in oil refining is very competitive where small mistakes have a huge price.

7. Interplay between the safety practices and work environment

After aligning the multiple strands of theories, that is, regulatory frameworks, organizational culture, leadership theory, behavioral models, and the JD-R framework, it might be clear that the same relationship between OHS practices and quality of work environment is dynamic and multifaceted.

Sound safety practices can not just eliminate physical risk but also lead to trust building, better communication, and the development of the feeling of stability among the working population. On the other hand, the inability to adopt or practice such behaviours may result in an atmosphere of tension, detachment, and low morale. Given the high correlation between encompassing safety systems and a larger organizational focus on the well-being of the employees, it would seem that the former is often an indicator of the latter, which subsequently leads to higher performance and retention. Systems-thinking approach is the foundation of this study in theoretical terms, but its application is regarded as a complex behavioral, biological, and social environment. This view is particularly applicable in event such as oil refineries which are sensitive, risky environments where a little bit of loss of safety means huge losses to the individual involved, as well as to the organization at large.

8. Applicability to the Saudi Industrial Context

Although the above-mentioned theories have been crafted and applied at various domains within the international environment, they must be exercised in Saudi Arabia and more so in Yanbu with sensitivity. Industrial City of Yanbu is a socio-economic and regulatory environment that is fast industrialized, multicultural, and also undergoing an economic transformation under Vision 2030. Such contextual factors may persuade the safety practises understanding, acceptance, and realisation. As an example, organizational cultures can create a hierarchical culture which can influence the comfort level of employees to report hazards or recommend an improvement. Also, language and cultural differences may become the source of unfavorable training and communication. Consequently, albeit the theoretical questions above constitute a sturdy base, local adjustment of the employment models will be one of the main characteristics of this research. This study will allow creating a sophisticated view of the influence of OHS practice on the working environment of the Saudi oil refining firms by combining specific field observations with local data.

Methodology

The research method applied in the study is descriptive-analytical researches, and this type of research is suitable in studying the nature, trends and association between the occupational health and safety (OHS) practices and their roles in the improvement of the working environment. The descriptive part of the work aims at defining the existing pattern of the OHS practices of the oil refining firms operating in Yanbu region, and the analytical aspect will attempt to interpret the extent to which the practice of adopting techniques, and countering issues related to implementation lead to a difference in the work environment underpinning the objectives.

The use of descriptive-analytical research is prevalent in organizational studies where one aims to generate a deeper-structured insight of a complex problem in a particular situation. In the study, the approach allows conducting a detailed review of the views of the employees related to the availability and appropriateness of safety measures, the level of employee participation and whether practices had an impact on the situations at the workplace.

The research can be placed as a quantitative research initiative with cross-sectional survey as the main research tool designed to collect data. The selected method in the form of a questionnaire enables systematic and standard data gathering of a wide range of participants to assure the quantifiability of responses, the ability to compare it and finally analysis using statistics.

Population and sampling of studies

The study sample will consist of employees of companies which produce oil refineries in Yanbu Industrial City in Saudi Arabia. These businesses are an inherent component of the national industrial sector that feature complicated operational setting and high safety standards. The target population consists of representatives of different levels of organization who are directly or indirectly involved in the work of occupational health and safety systems, not to mention safety officers, operations employees, supervisors, and ordinary workers.

As this study is large and exploratory, purposive sampling technique was used. They were sampled according to the topic of study that is; whether they were a subject expert on the subject or whether they were involved with the OHS practices at their place of work. With this non-probability sampling technique, one will be able to collect information only by the individuals that are most probable to have something important to say about the process and outcome of safety measures.

The last sample will be obtained by a total number of 50 study participants who represent various departments of oil refineries in Yanbu. A sample size with this size is suitable to conduct a small scale exploratory study as it still has some depth in measuring the data interpretation and is also manageable in terms of the survey process and data analysis procedures.

Data Collection Tool

To collect the necessary data, a structured questionnaire was developed and distributed among the 50 selected participants. The questionnaire was designed in English and divided into three major sections, with a total of 20 questions that cover the key variables of the study.

- **Section 1: Demographic Information (3 Questions)**

This section gathers basic background data to help classify responses and identify possible trends across different demographic categories. Questions include:

- Gender (Male / Female)
- Position in the company (e.g., technician, supervisor, safety officer, etc.)
- Years of experience in the oil and gas sector

- **Section 2: Main Survey Items (15 Questions using Five-Point Likert Scale)**

This section includes the core items of the study and is based on a five-point Likert scale ranging from (1 = Strongly Disagree to 5 = Strongly Agree). The items are designed to measure:

- Perceptions of current OHS practices
- Perceived effectiveness of safety training and communication
- Leadership commitment to safety
- Challenges and obstacles to implementing OHS practices
- Impact of OHS on the quality of the work environment (e.g., physical safety, psychological comfort, motivation, and job satisfaction)

- **Section 3: Open-Ended Questions (2 Questions)**

Study Limitations

1. Spatial Delimitation:

This study is limited to **oil refining companies located in Yanbu Industrial City**, Saudi Arabia. Yanbu represents one of the most important industrial zones in the Kingdom, hosting major oil refining facilities, which makes it a relevant and strategic setting for examining occupational health and safety (OHS) practices and their impact on the work environment.

2. Temporal Delimitation:

The research was conducted during the **year 2025**, specifically between **June and September**, during which the questionnaire was distributed, responses were collected, and data analysis was completed.

3. Human Delimitation:

The study sample is restricted to **50 employees** working in Yanbu-based oil refining companies. Participants include individuals who have either direct or indirect involvement with occupational safety procedures, such as technicians, safety officers, supervisors, operations staff, and other relevant personnel.

4. Thematic Delimitation:

The scope of this research is focused exclusively on examining the **impact of occupational health and safety practices and their associated challenges on the improvement of the work environment**. It does not address other related topics such as public health or environmental protection. Additionally, the study is concerned only with **internal workplace conditions** and does not extend to external influences such as national policy or macroeconomic factors.

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