

## CHAPTER V

### DISCUSSIONS AND CONCLUSION

#### 5.1 Overview

This chapter contained discussion of the findings, as well as the theoretical, practical, and methodological contributions of the study. The shortcomings of the study were also highlighted. Policy recommendation for improving the work environment satisfaction and ameliorating the risk perception were addressed to improve the employees' performance, and conclusion was finally made.

#### 5.2 Summary of the Study

This study aimed at answering the research questions on the determinant factors of the employees' performance at Skikda Oil and Gas Refinery and to determine whether risk perception mediates the relationship between work environment satisfaction and employees' performance. This study was conducted among the employees of Skikda Oil and Gas Refinery in Algeria. The unit of analysis was at individual level and the questionnaires were addressed to various departments and units of the refinery. The underpinning theories of this study are protection motivation theory and social exchange theory. In order to achieve the research objective, the study developed direct and mediating effect models.

For the dependent and independent variables, both direct and mediating impact models used the identical sample sizes and data sources. When the risk perception is added, the sole difference between the two happens. Primary data and the same theoretical framework were used in both direct and mediating impact models. The results showed distinct outcomes for both direct

and mediating impact models, which were addressed in more detail in the next paragraph. The p-value estimate is used to evaluate if there is significant relationship between the constructs in the direct effects. On the other hand, mediating effects utilize p-values, direct and indirect paths to determine if mediation happens and what kind of mediation it is.

### **5.3 Discussions of Result**

The study has four research objectives with four hypotheses. The objectives are discussed thus:

#### **5.3.1 Objective One**

The first objective was assessed by determining the effect of employees' risk perception on their performance among staff of Skikda oil refinery in Algeria. However, the findings revealed that risk perception has negative effect on employees' performance. This result is consistent with Aven and Renn (2010); Ferrer and Klein (2015); Karau and Williams (2019) that perceived vulnerability such as expected fatalities could have unfavorable consequences on employees' performance. This was also supported by Benmecheta and Belkhir (2016) findings that the risk levels in Skikda Oil Refinery are very significant. Although Benmecheta and Belkhir (2016) findings were rather suggestive, however, the empirical analysis has been shown in this study. This result is also consistent with Garcia et al. (2004) who reveal that workers who have exposed themselves to more risks were less likely to perform effectively.

The negative effects of the tricks of oil and gas industries have been a key risk on health and safety of the employees in case of accidents, gas leakages, fire, as well as environmental factors such gas emissions, waste generated during drilling, greenhouse effect and water contamination. The top oil industries have implemented the procedures of environmental, health

and safety, operational dependability. In the place of work, risk assessment is a vital means of improving safety and health, consequently improving performance.

### **5.3.2 Objective Two**

The second objective was to evaluate the extent to which work environment satisfaction have an effect on the employees' performance among staff of Skikda Oil and Gas Refinery in Algeria. The findings revealed that the work environment satisfaction has negative and significance effect on the employees' performance. The result revealed that the work environment satisfaction has negatively affected the productivity of the employees at Skikda oil and gas refineries in Algeria. This result is supported by previous studies such as Clements-Croome (2006) and De Croon (2005). The previous studies support this result, that, discomfort and dissatisfaction at workplace has a very strong impact on the health of the workers, facilities and employees' performance, which might result to long term impact on the performance of the employees. However, the challenges of work environment satisfaction are top concerns for stakeholders in oil and gas industries. The uniqueness of the result is that it is empirical in nature rather than suggestive.

Naharuddin and Sadegi (2013) supported this result that employee's performance depends on the work environment satisfaction as such when the work environment is inappropriate, the productivity and the performance of the employees also decrease. This result also supported by a study carried out by Al-Omari and Okasheh (2017) that employers should take initiatives to trigger off employees by improving their work environment. As employees are motivated, their performance will increase, and they will achieve the desired outcomes and goals of the job. This result is one of the little empirical evidence between work environment satisfaction and employees' performance.

### **5.3.3 Objective Three**

The third objective is measured by examining the effect of the employee risk perception on work environment satisfaction among staff of Skikda oil refinery in Algeria. The findings revealed that there is positive and significant relationship between the levels of employee risk perception and the work environment satisfaction among staff of Skikda oil refinery in Algeria. This implies that if risk is low, the employees will be satisfied with the workplace environment. This supported the result of Jafari et al. (2019) that an increase in the risk perception resulted into an increase in the occurrence of occupational accidents in the workplace environment. However, this study found a significant relationship between the variables, while Jafari et al. (2019) result found no significant relation between the risk perception level and the work environment satisfaction. However, the result does support Hashiguchi et. al. (2020) that risk perception affects work environment satisfaction, and that work skills and proactive work behaviors affect perceptions regarding team performance. However, Hashiguchi et. al. (2020) showed negative effect on the feeling of safety and proactive work behavior and feeling of safety. Thus, in this regard, the risk perception and the work environment satisfaction is rarely measured empirically especially in relations to oil and gas industries and that is one of the uniqueness of this study.

### **5.3.4 Objective Four**

The fourth objective is to assess the mediating effect of the risk perception on the relationship between work environment satisfaction and employees' performance among staff of Skikda oil refineries in Algeria. In order to achieve this objective, the direct effects and indirect effects of the constructs are considered. The direct effect result is between work environment satisfaction and employees' performance and the finding showed negative relationship.

However, after the introduction of the mediating variable-risk perception, the effect reduces the impact of the relationship between work environment satisfaction and employees' performance.

By implication since both the direct effect and indirect effect are all significant, this shows that partial mediation occurs. This result is supported by Arezes and Miguel (2008), that risk perception in workplaces can influence employees' performance and, consequently, their exposure to some occupational risks. This study confirms Chettouh, et. al. (2016) study that employees at Skikda oil refinery still lacked safety awareness around fire accident and they did not have the broad understanding to effectively lead themselves to safety in the event of accident.

The risk perception has rarely been used as a mediator as the researcher discovered. Most studies have normatively examined work environment and employees' performance. However, this study is one of the few studies that empirically linked the work environment satisfaction and employees' performance, by considering risk perception as mediator.

#### **5.4 Contributions of the Study**

This study has contributed to the body of knowledge theoretically, practically and methodologically as follow:

##### **5.4.1 Theoretical Contributions**

This study has contributed to behavioral theories such as Protection Motivation Theory and Social Exchange Theory by coining together risk perception, work environment satisfaction and employees' performance in its research framework. The study linked both nature of the environment risk and cognitive in relation to work environment satisfaction towards employees' performance. The discussions of the linkage of the constructs are relatively rare in the literature.

The word "satisfaction," as employed in this research, has opened the path for a new theoretical framework and contributed to the body of knowledge. Furthermore, the phrase "perceived degree of risk" has only been used in a few prior researches.

With the addition of risk perception as a mediator, this research also added to the theoretical framework. Most previous research, particularly in the oil and gas sectors, seldom utilized risk perception as a mediator of working environment satisfaction and employees' performance. Even though risk perception has been used for various purposes in the previous study, risk perception as a mediator will pave new way for academic body of knowledge especially in oil and gas industries.

In addition, the study combined work environment satisfaction and risk perception to develop the triangle of employees' performance in oil and gas industries. If all these constructs are combined together employees' performance will improve.

#### **5.4.2 Practical Contributions**

Work environment satisfaction is essential in contributing to the economic development of any country and can increase productivity among employees, particularly in the oil and gas sectors, which are the foundation of national budgets. Many industries have started seeing the impact of work environment satisfaction in relation to the productivity of such industry and performance of its employees. If satisfactory work environment is provided to employees, then it can spur the emergence of a sense of satisfaction in the employees and can ultimately give a positive influence on their performance. The thesis has contributed on how performance can be improved among employees of oil and gas industries by putting in place risk perception measures and work environment satisfaction so that other sectors can learn from them.

On the one hand, putting risk assessment measures, consistent training and retraining of staff on safety and security can reduce accident threat in oil and gas sectors and improve workers' performance. On the other hand, within large refineries, there is a need for improved safety measures such as improving the HSE department in order to cater for workers' health risk as at when due.

#### **5.4.3 Methodological Contributions**

Previous research has explored several aspects of risk perceptions ranging from definitions and literature review. However, the mediating relationship of the risk perception on the relationship between the work environment satisfaction and employees' performance is rarely measured in the past. Most of the past discussions on the risk perception are rather suggestive. This study is one of the few study that that has measured the risk perception empirically in relation to employees' performance in oil and gas industries. However, there are major methodological issues with the risk perception that are addressed in this research, rendering previous results suggestive rather than definitive. This is one of the study's distinguishing features.

Furthermore, prior studies on work environment satisfaction and employees' performance in the oil and gas sectors had major methodological flaws. Because most studies are fairly speculative in nature, this study happened to be one of the few empirical investigations on work environment satisfaction and employees' performance.

The structural equation model employed in this research has also added to the academic body of knowledge, providing deeper insight models. Ordinary Least Square (OLS) has been used in most research as part of a hierarchical regression strategy. As a result, this study has

opened the way for academic research on how to quantify the mediating effects of risk perception using a structured model.

## **5.5 Policy Recommendation**

### **5.5.1 Employment and Social Justice Policy**

- The management should recognize their duty by managing with proper regard to the environment and for the health and safety of workers who may be affected, directly or indirectly, by its operations. The Environmental Policy should be planned to ensure that every employee shares responsibility in the environment. The management should maintain a high degree of merit in respect of all HSE issues, including emergency preparedness for accident threat. An effective HSE System should be established to monitor this process.
- Management needs to put in place safe and satisfactory working conditions and environment. I.e. respect for the workers, regardless of origin, age or gender. The management should recruit, train and promote employees from within the places of operation. Through training and appraisal, employees should be encouraged to develop their own professional skills to the mutual advantage of both the individual and company.

### **5.5.2 Health, Safety, Environment and Security Policy**

- There is a need for government to strongly focus on safety measures through-out the productive activities. The oil industry is becoming more employee-centered and must make effort to improve performance. They should pay great attention to the issue of risk

management and to ensure the corporate confidence in the sustainable development despite the negative impact factors.

- There is a need to have a defined collaborative regulatory approach for accident prevention and risk management between employees and the management by seeking feedback information from staff in setting regulatory targets.
- There should be Safety Policy Manual adopted by the management setting out the Company's environmental, safety and health practices and responsibilities.
- The management should use ALARP approach in ensuring the level of risk in productive activities in oil and gas industries.

#### **5.5.3 Internal Control, Monitoring and Compliance Policy**

- Management should ensure clear line of the system of internal control, monitoring compliance against the requirements of the risk management system and reviewing the adequacy of controls. This will not only reduce the accident threat but will also improve effective compliance with risk measures and employees' performance.
- There should be effective close oversight by senior management. This could be achieved through risk committee set up with a view to unifying risk management approaches and drive in risk cultures among employees. The committee should chart their approach on work environment satisfaction, health safety and employees' related matters.

#### **5.5.4 Forward and Backward Linkage Policies**

- Oil companies are also increasingly establishing backward linkages in the areas where they operate irrespective of skills. Where infrastructure is weak, industrial, technological,

or human capacity will be scarce and tendency for higher risk is plausible. There is a need for improving refineries and infrastructure. Government needs to take proactive measures of rebuilding and reshaping the oldest refineries in order to improve work environment satisfaction. Thus, there is need for more experienced employees in the industry.

- Governments, donors, and international financial institutions are increasingly committed to encouraging mechanisms and infrastructure developments to enhance forward and backward linkages between the oil and gas industry and economy in the oil areas. Oil installations in producing areas typically consist of a series of prefabricated units, often disconnected with the personnel. The infrastructural development should be tailored towards employees' performance and more experienced workers should be employed in order to reduce accident threat.

### **5.6 Limitations of the Research**

Despite the fact that this research has added value to the body of knowledge, it has certain limitations. This limitation, on the other hand, opens the door to fresh study. The first dimension of the limitations of the study is that the results could not be completely extended outside the ideas of the study, which were discussed in the preceding chapter. Other conceptual components may be found for testing the hypothesis, although perhaps more of the examined variation might have been explained if more of these conceptual variables had been included. More of these variables might have suggested a more complete network of connections and given additional marginal insights if they had been included. Due to time and other resource limitations, a thorough examination of a wide variety of variables was not feasible. The scope of

the research had to be planned, and the variables utilized had to be deemed suitable for the evidence sought in terms of the exercise's goals and hypotheses.

Another drawback of this study is that the findings of a long-term investigation of the examined connections in this work might have given a deeper understanding. However, the cross-sectional research methodology employed in this study has a research drawback in that causation cannot be proved (Bryman, 2004). As a result, inference must be utilized in connection to theory (Bryman, 2004). However, due to time and resource limitations, a research design like the cross-sectional type used in this study was required.

Furthermore, this research relied exclusively on quantitative data and techniques. In the future, qualitative techniques such as interviews and unstructured questionnaires may be utilized as well as triangulation methods that integrate qualitative and quantitative data. As this study was unable to visit all the refineries, future studies should focus on the other refineries.

## **5.7 Conclusion**

The purpose of the study is to investigate the determinant factors of employees' performance in Skikda Oil refinery in Algeria and to establish whether risk perception mediates the factors. The findings showed how risk measures control can be the key drivers in improving work environment satisfaction and employees' performance in Skikda Oil and Gas Refinery. This study showed that risk perception could be controlled with effective safety procedures implementation and proper training of staff which could result to better productivity in the refinery. The study showed that the risk perception could entail having safety policy manual on health, safety and environment matters as exploration, development and production of oil and gas involves risks which may affect the health and safety of employees and the environment, and if not managed, could significantly affect the employees' performance. Having satisfactory work

environment will not only motivate and improved performance and productivity but will reduce risk perception and accident rate in the future.

The findings of this study added to the literature on the perceived level of employees' performance, particularly at the individual level, where there is little empirical research in the oil and gas industry, particularly in Algeria. The research showed that the theory was applied at the business level. As a result, it is anticipated that this research will be very useful in guiding future research in these rapidly developing areas. The findings of this research will be helpful to the government in developing future policies and giving more assistance and incentives to encourage more performance and productivity.

Although most academics would say that risk perception is still relatively new, there has been a tremendous amount of study on various aspects of risk, and more is on the way since the majority of economies are moving toward risk mitigation among employees in the oil and gas industries.

This study represents an attempt to improve employees' performance due to the level of risk involved in their work and nature of work environment. The model presented here started with the job satisfactory and the entrepreneurial desire, then added training, the type of environmental hazards, and the cognitive variables to design the result, in order to create a high level of employees' performance.

The three best practices to help prevent accident threat include: active monitoring for hydrogen-sulfide gas; good planning; and training programs for workers. Oil and gas employees exposed to chemicals in oil and gas industry and may suffer occupational diseases of lungs, skin and other organs at levels relying on the amount and length of exposure time. Those exposed to hazardous noise levels may suffer noise-induced hearing loss (NIHL). Other hazards include

confined spaces that may injure or threaten life of untrained employee. The aim of occupational safety and health risk management is to identify and assess safety and health hazards existing at the workplace and to define appropriate control and retrieval steps. There is a need for proper risk assessment framework that consists of a process of identifying hazards, analyzing and evaluating the risk associated with the hazards identified and determining the appropriate manner to eliminate or control the hazard. The study's implications serve as a policy guideline for Skikda Oil and Gas Refinery in putting proactive measures in place to improve productivity by focusing on safety and a satisfactory working environment. It is very important that the Skikda Refinery's employees should be well catered for, and the work environment should be satisfactory and conducive for employees to improve their performance.

