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**INNOVATIVE WORK BEHAVIOR AMONG EMPLOYEES IN
THE ALGERIAN PETROLEUM SECTOR: THE MEDIATING
ROLE OF LEARNING GOAL ORIENTATION**



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**INNOVATIVE WORK BEHAVIOR AMONG EMPLOYEES IN THE
ALGERIAN PETROLEUM SECTOR: THE MEDIATING ROLE OF LEARNING
GOAL ORIENTATION**



By
HEBBAZ ANES

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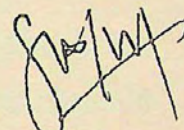
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Nama Pelajar
(Name of Student) : Hebbaz Anes

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Nama Penyelia/Penyelia-
penyelia
(Name of
Supervisor/Supervisors) : Assoc. Prof. Dr. Siti Zubaidah Bt. Othman



Tandatangan

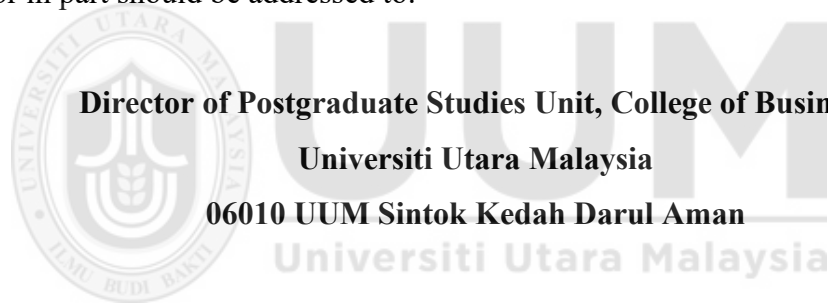


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Abstract

Given the uncertainty, instability and turbulence in today's economic environment, highly innovative employees are essential to the success and competitiveness of an organization. Innovation is increasingly recognized as a key source for sustainable competitive advantage that organizations can use to cope with the rapidly changing economic environment. Therefore, this study was conducted with the intention to investigate the effect of leader-member exchange, team climate for innovation, job demands, and learning goal orientation on innovative work behavior among employees from the production division in Sonatrach Corporation in Algeria. The study also examined the role of learning goal orientation as a mediator in the relationship between leader-member exchange, team climate for innovation, job demands, and innovative work behavior. The study adopts Social Exchange Theory (SET) to support the theoretical framework in the context of individuals innovative work behavior. A total of 535 questionnaires were personally distributed to full-time workers at the production division of Sonatrach Corporation in Algeria. 268 questionnaires were returned, representing a response rate of 50%. However, only 225 questionnaires were usable for further analysis. The hypotheses for direct and indirect effects were tested using Structural Equation Modelling (SEM) - Partial Least (PLS) method. The results indicate that there was significant effect of leader-member exchange, team climate for innovation, and learning goal orientation on innovative work behavior. Learning goal orientation was also found mediates the relationship between leader-member exchange, team climate for innovation, job demands and innovative work behavior. However, learning goal orientation did not mediate the relationship between team climate for innovation and innovative work behavior. The present study has also highlighted the implications

Keywords: Innovative work behavior, leader-member exchange, team climate for innovation, job demands, learning goal orientation

Abstrak

Memandangkan ketidaktentuan, ketidakstabilan dan pergolakan dalam persekitaran ekonomi masa kini, pekerja yang sangat inovatif adalah penting untuk kejayaan dan daya saing sesebuah organisasi. Inovasi semakin diiktiraf sebagai sumber utama untuk kelebihan daya saing yang lestari yang boleh digunakan oleh organisasi untuk berhadapan dengan perubahan persekitaran ekonomi yang pantas. Oleh yang demikian, kajian ini dijalankan dengan tujuan untuk mengkaji kesan kepemimpinan LMX, iklim pasukan untuk inovasi, tuntutan kerja, dan orientasi matlamat pembelajaran terhadap tingkah laku kerja inovatif dalam kalangan pekerja dari divisyen pengeluaran Sonatrach Corporation di Algeria. Kajian ini turut mengkaji peranan orientasi matlamat pembelajaran sebagai perantara dalam hubungan antara kepemimpinan LMX, iklim pasukan untuk inovasi, dan tuntutan kerja terhadap tingkah laku kerja inovatif. Kajian ini menerima pakai Teori Pertukaran Sosial bagi menyokong kerangka teoretikal kajian dalam konteks tingkah laku kerja inovatif individu. Sejumlah 535 borang soal selidik telah diedarkan secara peribadi kepada pekerja sepenuh masa di divisyen pengeluaran Sonatrach Corporation di Algeria. 268 borang soal selidik telah diterima dengan kadar maklum balas sebanyak 50%. Walau bagaimanapun, hanya 225 borang soal selidik sahaja yang boleh digunakan untuk analisis seterusnya. Hipotesis untuk kesan langsung dan tidak langsung diuji menggunakan kaedah *Structural Equation Modelling (SEM) - Partial Least (PLS)*. Dapatan kajian menunjukkan bahawa terdapat kesan yang signifikan bagi kepemimpinan LMX, iklim pasukan untuk inovasi, dan orientasi matlamat pembelajaran terhadap tingkah laku kerja inovatif. Dapatan kajian juga mendapati bahawa orientasi matlamat pembelajaran memainkan peranan sebagai perantara dalam hubungan antara kepemimpinan LMX, iklim pasukan untuk inovasi, dan tuntutan kerja terhadap tingkah laku kerja inovatif. Walau bagaimanapun, orientasi matlamat pembelajaran tidak memainkan peranan sebagai perantara dalam hubungan antara iklim pasukan untuk inovasi dan tingkah laku kerja inovatif. Kajian ini juga mengenengahkan implikasi kajian, cadangan kajian masa akan datang dan limitasi kajian.

Kata Kunci: Tingkah laku kerja inovatif, kepemimpinan LMX, iklim pasukan untuk inovasi, tuntutan kerja, orientasi matlamat pembelajaran

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CHAPTER 1

INTRODUCTION

1.1 Background of Study

Innovation is “the process and outcome of creating something new which provides value in terms of profit and beneficial to the organization” (Schumpeter, 1934, p.19). It is very important to any organization as it augments the organization’s strategic position and provides competitive advantage (Farrukh, et al., 2023). In the competitive environment, the value of innovation is considered as well establish criteria to identify the organization success. As argued by Metaiche et al. (2013), innovation cannot be separated from the strategic and competitive environment. For sustaining in the competition, organizations need to develop the innovation process, continuous improvement, and individual’s innovativeness. According to Balle et al. (2016), operational excellence is not achieved by just applying the so-called “lean” practices but also requires cultivating an aptitude and an expectation for continuous improvement within every employee such as innovative work behavior.

Because of today’s uncertainty, instability and turbulence of the economic environment, employee innovativeness has become crucial for organizational success and competitiveness (Montani et al., 2014; Afsar et al., 2019). Innovation is increasingly recognized as a key source for sustainable competitive advantage that organizations can use to cope with the rapidly changing economic environment (Yeh-Yun Lin & Liu, 2012). One way for organizations to become more innovative is to capitalize on their

employees' ability to be innovative (De Jong & Den Hartog, 2007). As argued by Katz (1964), an organization that depends solely upon its blueprints of prescribed behavior is a very fragile social system. In this context, individual level of innovation helps to attain organizational success. This is agreed by Ilgen et al. (2005) where they believed that innovative organizations often depend upon individuals' behavior and teamwork.

Similar arguments were also found in other writings. For example, Scott and Bruce (1994) argued that the foundations of all innovations are novel initiations and ideas, and it is individuals or groups who initiate, promote, modify, and ultimately realize those ideas. Other authors such as Martins and Terblanche (2003) and Slåtten (2011) also have similar believe that innovation has largely emphasized the fundamental role of employees to innovate in organizations. To succeed, organizations need to promote innovative work behavior among employees. Therefore, innovative work behavior among employees were highly encouraged, and became the main agenda for many organizations.

Innovative work behavior refers to employee behavior that create, introduce, and apply new ideas intentionally within a work role, a group, or an organization that are beneficial to performance (Janssen, 2000). To strengthen employee's innovation performance, the organizational environment of innovation is essential in supporting the innovative work behavior (De Jong & Den Hartog, 2007; Veenendaal, & Bondarouk, 2015). Nonetheless, innovative work behavior is widely claimed to be crucial for the effective functioning and long-term survival of organizations (Amabile, 1988; Oldham & Cummings, 1996; West & Farr, 1989, 1990). Odoardi (2015) acknowledged that organizations that foster a proactive, innovative, and flexible innovation climate to beneficial of its success by promoting innovative work processes which encompass

challenging goals for employees learning orientation to equip with new knowledge, skills and abilities which ultimately leading to innovative work behavior. Innovative behavior can be performed by part of organizational individuals or group/team of individuals in the organization settings to achieve benefits and performance that is suitable for wider society. Therefore, managerial research on innovation behavior should emphasize on human perspective rather than technological perspective of innovation (Yuan & Marquardt, 2015). Hence, individual innovative behavior is an essential factor in the performance and competitiveness of work groups, organizations, and societies (Oldham & Cummings, 1996).

According to Afsar and Masood (2017) and Jyoti and Dev (2015), leaders are one of the most important predictors of innovation in the workplace. Hence, they must be able to foster an environment that fosters innovation (Tierney & Farmer, 2011). However, it has been suggested that the relationship between leader-member exchange and creative outcomes is dependent on a host of factors and is likely to be more complicated than previously thought (Schermuly et al., 2013; Wang et al., 2015). Number of academics and scholars have found that leader-member exchange is particularly effective in promoting employees' innovative work behaviour. Previous studies on employee innovative work behavior have discovered that organizational determinants like leader-member exchange is able to significantly determine employees' innovative work behavior (Atitumpong & Badir, 2018; Saeed et al., 2019).

Organization does face challenges on how to develop learning environment in which individual learning orientation may enhance creativity and innovation. Employee learning has a key role in providing organizations with an advantage in today's competitive environments (Eldor, 2017). But learning climate lacks empirical on its

implications for employees' innovative behavior. In developing the attitudes and expectations in employee's performance, organization faced difficulties in adopting the change and improving workplace conditions in the implementation of new or novel ideas which are carried out in the constraint organization settings. Therefore, the goal of this study is to understand the factors that influence employees' innovative work behavior.

1.2 Overview of the Petroleum Industry in Algeria

Sonatrach is a State-Owned Enterprise (SOE) and very dominant in the Algerian Petroleum sector. It is the largest company in Africa, and the 11th largest oil consortium in the world. Apart from oil exploration and production, Sonatrach is also well-known for its' fertilizer production and sales, construction and engineering, seawater desalination, air transportation, and shipping which make Sonatrach the largest locomotive company in the country's economy for more than 50 years.

This study seeks to enhance the innovation process among the employees related to the contribution of knowledge in the Algerian petroleum industry. Therefore, the petroleum industry has the potential to boost the economic growth of many countries such as Algeria. Specifically, this sole industry contributes 95 percent of total exports in Algeria (Arezki, 2019), 20 percent of Algerian Gross Domestic Product (GDP), and accounting for 60 percent of the country's budget revenues (OPEC, 2017) which makes its importance for innovation in terms of organizational productivity and employee innovative work behavior to the economy in general, and petroleum company in particular. National petroleum corporation, Sonatrach, holds about 80 percent of total

petroleum production and exports in Algeria (International Trade Administration, 2016). The petroleum industry has become more knowledge-intensive and thus, it requires greater innovative behavior among its employees which in turn lead to sustainability such as competitiveness improvement and innovative work behavior (Khalifaoui & Ouchalal, 2006).

In fact, media such as Reuters has recognized that the petroleum company of Sonatrach's performance is key to the Algerian economy. A study from the World Economic Forum (2017) reports that Algeria has a low position in innovation. Specifically, innovation in Algeria is ranked 104th from 138 countries. In addition, the Global Competitive Index (2018) also reports Algerian low competitive position in its 11th pillar of growth of innovative companies which is at 126th and in 12th pillar innovation capability of the workforce stood at 102nd out of 140 countries, respectively.

In fact, the poor employee's capability of innovativeness is also reflected in the Global Innovation Index 2021. According to the Global Innovation Index (2021), Algeria ranks in the lowest quarter of 110th out of a total of 126 countries. The ranking was worrying as it was far behind compared to other African countries like Tunisia (66th), Morocco (76th) and Egypt ranks (95th). This is an indication of the difficulty the country has in converting national resources into knowledge resources and human capital innovativeness (Djefflat & Lundvall, 2016).

This lack of innovation in Algerian economy provides the reason why the production division of Sonatrach is not able to employ innovative work behaviors in its organizational settings (Djefflat & Lundvall, 2016). Hence, it is important to zoom into the innovative work behaviors among employees in the production division of Sonatrach.

Within Sonatrach, the production division is seen as crucial in gearing its level of innovation implementation. This particular division responsible for the primary function of exploration-production of hydrocarbons which accounts for 75 percent and these include crude oil, condensate, liquefied petroleum gas (LPG) and natural gas (Sonatrach Annual Report 2014). Its further copes with operational activities to maintain its innovative development policy based on the growth of its production while considering the evolution of the market.

Given the dependency of the Algerian economy on the petroleum industry coupled with the declining productivity have further induced for greater importance of employees' innovative behavior. Thus, a study to understand how to steer innovative work behavior among the employees' production division is needed.

Although large expectations are placed on employee work behavior, little is devised about how to enhance, evaluate, and direct it in practice (Hasu et al., 2014). Hence, the employee's role in innovative work behavior has become a challenge in the production division of Sonatrach which is currently facing deteriorations in productivity (Djefflat & Lundvall, 2016).

1.3 Problem Statement

Poor and less effective employee's innovative work behavior, productivity and exports have been deteriorated and consequently become a challenge for petroleum sector growth in the Algerian economy (Reuters, 2017). According to Abdelmoumene Ould Kaddour, the Chief Executive Officer (CEO) of SONATRACH, the company is moving towards innovation to improve efficiency and boost production. As he declared

that “*find solutions for raising its reserves, including innovation and using technologies to reduce costs and optimize its output.*” He further added “*We want our employees to be innovative in doing business, instead of relying on administrative and bureaucratic procedures*” shedding insight on how crucial innovation is to the success of the company (Henni, 2018).

Due to poor innovative work behavior, overall petroleum productivity and exports had been decreased in an adverse level. Therefore, innovating new technologies to offset production decline and optimize output, as the company lags in deploying the latest technologies in its fields should be a priority (Henni, 2018). Djeflat and Lundvall (2016) argued that one of the reasons for the drop in the productivity level was due to the poor innovative work behavior by the production division employees of Sonatrach. This has further alarmed the management of Sonatrach to gear up the petroleum production by concentrating on the employee innovative work behavior in particular the production division.

The practical issues are aligned in the employee’s innovative activities of the petroleum sector. Although all sectors are important in economic development, petroleum sector is highly influenced by severe competition in the world oil market. This sector is a major source of Algerian revenue has faced an acute decline in its productions due to low innovativeness and total exports (Bank of Algeria, 2017).

Studies on the status of petroleum production has documented low innovation rate undertake in production division was not significant enough to convert its natural resources into knowledge intensified resources, weak training and development of the workforce, low scientific and technological policy, by the national owned company- Sonatrach production division and its confined labor-intensive exploration-production

operations (Djefflat & Lundvall, 2016; Khalfaoui & Ouchalal, 2006; Metaiche et al., 2013).

On the other hand, Algeria is one of the largest importers of oil derivatives destined for its export of crude oil. Therefore, the cost of imported fuel is very high that Algerian economy had to bear especially in the hydrocarbon utilitarian for economic activities. According to Mostafa Magidiche, vice-president of the Economic and Social Council of Algeria, Algeria's energy deficit in fuel estimated at US\$ two billion per annum are equivalent to Algeria's exports other than the hydrocarbon sector (Echorukonline, 2018). Furthermore, the statistics reveal that Algeria imports are more than two million tons of fuel per annum to balance its energy shortage in this area (Djazairiess, 2015). According to Farrukh et al. (2023), most researches on innovative work behavior are conducted in developed economy, The emerging economies such as Algeria is less focused, and 80% of the world's population lives in these emerging economies.

Based on the above discussion on innovative work behavior issues and its' impact on the organization, the main question is how to increase employees' innovative work behavior? What factors influence employees' innovative behavior in the organization? In the past many studies have been conducted to understand factors that might influence innovative work behavior. For example, researchers such as Chen and Huang (2019), Ma Prieto and Pilar Perez-Santana (2014) have tested the influence of HR practices on employees' innovative behavior.

However, the above discussions have pointed out the practical issues on declining productivity and exports by the part of low employees' innovative work behavior in the production division. Based on past literature, there are theoretical issues

found related to innovative work behavior. Thus, this study is focusing on obtaining high level of employee innovative work behavior in Sonatrach through the presence of leader-member exchange, team climate for innovation, job demands, and learning goal orientation.

There are also researchers who have considered the innovation issues at the individual level. Several studies have investigated the measurements and determinants of innovative work behavior (De Jong & Den Hartog, 2010; De Spiegelaere et al., 2014; Janssen, 2000; Kanter, 1988; Potočnik & Anderson, 2016; Ramamoorthy et al., 2005; Scott & Bruce, 1994). However, innovative work behavior required examination of individual in the organizational environment (Dediu et al., 2018). Though numerous narrative reviews related to innovation in work organizations have been published, very few quantitative reviews have been conducted in this context (Matsuo et al., 2019).

Given the importance of organization conditions and environment that have a severe impact on organizations performance and individuals working practices, employees are required to meet higher workloads with constraint settings that influence oppositely to the employees' innovative work behavior (Dediu et al., 2018; James, 2014). Thus, considering the role of the employees in the petroleum production division and its competitiveness on the organizational level, it is important to understand the complexities that govern the employees' innovative work behavior.

The theoretical issues show the paucity of previous findings with regards to the relationship between leader-member exchange and innovative work behavior. The leader-member exchange has been much disputed subject within the field of innovative work behavior. Empirical results from the past research have shown that organizational determinant such as leader-member exchange has a significant effect on employee's

innovative work behavior (Atitumpong & Badir, 2018; Alsughayir, 2017; Bernerth et al., 2016; Shunlong & Weiming, 2012). However, there is a conflicting finding in some studies which concluded that the influence of leader-member exchange was not significant on employees' innovative work behavior (Taştan & Davoudi, 2015; Lee, 2008). According to Saeed Afsar et al. (2019), research on how leader-member exchange can foster and enhance the innovation of employees is still limited.

This outcome thus necessitates a need to re-examine the leader-member exchange among employees in the oil sector in Algeria. The importance of how employees perceived they have rewarded have found to have effect on the innovative work behavior. When the perception that they have been fairly rewarded by their leader occurred, employees tend to react more innovatively in a higher level of job demand situation (Janssen, 2000). This resulting outcome occurs simply because employee view the existence of distribution equity with regards to the rewards thus encouraging them to engage in innovative work behavior greater (Sanders et al., 2010).

Despite the crucial role of employee innovative work behavior in enhancing organization innovativeness, the extent of this activity is enhanced through the existing of job demands. Job demands precipitate employees to respond with higher levels of innovative activities to cope with the intensified job requirements (Janssen, 2000; Martín et al., 2007). Employee-driven innovation has become a vital factor in the unstable job demands of modern society, where workplaces are becoming increasingly complex and competition is becoming fierce (Koroglu & Ozmen, 2021). Taking into consideration that argument, job demands show an ambiguous relationship on how often people engage in innovative work behavior where job demands are high, innovation is low (Huhtala & Parzefall, 2007; King et al., 2007). However, the paucity of consonance in

literature evidence, whether job demands do affect innovative work behavior or the link between the two is still not clear (Dediu et al., 2018).

Another issue that has grown is how team climate for innovation strongly influences innovative work behavior. It has been argued that the most important contextual determinant of employee innovative is team climate for innovation (Xu, Jiang & Wang, 2019). In fact, a significant omission in most empirical research on team climate for innovation is the lack of evidence testifying to the validity of climate scores as a measure of the team climate for innovation as against merely a measure of the perceptions of employees within a team (Mathisen et al., 2006). Odoardi (2015) has focused on fostering team climate for innovation to benefit from promoting innovative work processes which encompass challenging goals for employees learning orientation to equip with knowledge and abilities ultimately leading to innovative work behavior. Thus, organizations can facilitate the team's innovative work behavior by stimulating team climate for innovation (Eisenbeiss et al., 2008). However, there is a need to further explore to what extent the perceptions of employees within team climate for innovation predict innovative work behavior (Mathisen et al., 2006; Somech & Drach-Zahavy, 2013; Xu et al., 2019).

Following the arguments, there is lack of empirical study which involved the mediating effect of learning goal orientation framework. In related studies, employee work engagement promotes individual innovative work behavior by raising employees' learning orientation but learning goal orientation has not predicted individual innovation (Chughtai & Buckley, 2011; Maden, 2015). Reviewing the literature indicates relatively little research has been conducted to identify the effects of learning goal orientation on individual innovative work behavior (Montani et al., 2014). Hence, to increase the

knowledge of learning goal orientation as the mediator factor, this research intends to test the mediating role of learning goal orientation in explaining the impact of team climate for innovation, job demands, leader-member exchange on innovative work behavior.

In addition, focusing on the team level of analysis, academic research has largely neglected the role of individual-level innovation within work teams (Walter & van der Vegt, 2013). Hirst et al, (2009) identified the combination of learning orientation with constraints of individual motivations and team context to promote learning as a possible route to enhance innovation. This study is conducted with the intention to fill this gap to explain the nature of learning goal orientation and innovative work behavior relation. It is noted that from all Sonatrach departments, production division has been identified as a vital role in enhancing the productivity growth by increasing its exploration and productions and this can be achieved with employee innovative work behavior.

Hence, this research intends to provide theoretical and empirical understandings of the antecedents and contextual determinants based on Social Exchange Theory. This study generally aims to investigate the relationship between leader-member exchange, team climate for innovation, job demands, learning goal orientation and innovative work behavior within the context of employees in Sonatrach production division. Also, to examine the mediating effect of learning goal orientation on the relationship between leader-member exchange team climate for innovation and job demands towards employee innovative work behavior.

1.4 Research Questions

Based on the problem discussed above, the main research question presented in the study addresses factors that might influence innovative work behavior. The following research questions are specifically addressed:

1. What is the effect of leader-member exchange, team climate for innovation and job demands on innovative work behavior?
2. What is the effect of leader-member exchange, team climate for innovation and job demands on learning goal orientation?
3. What is the effect of learning goal orientation on innovative work behavior?
4. Does learning goal orientation mediate the relationship between leader-member exchange, job demands, team climate for innovation, and innovative work behavior?

1.5 Research Objectives

This study aims to investigate factors that could influence innovative work behavior among employees in the petroleum sectors. Specifically, the study aims to:

1. Examine the direct effect of leader-member exchange, team climate for innovation and job demands on innovative work behavior;
2. Examine the direct effect of leader-member exchange, team climate for innovation and job demands on learning goal orientation;
3. Investigate the direct effect of learning goal orientation on innovative work behavior; and

4. Investigate the mediating effect of learning goal orientation on the relationship between leader-member exchange, job demands, team climate for innovation, and innovative work behavior.

1.6 Significance of the Study

This study is significant, given the empirical findings that emerge from the study could enrich the existing literature on innovative work behavior. The study which focuses on the direct effect of leader-member exchange, team climate for innovation and job demands on innovative work behavior, and the mediating effect of learning goal orientation on the relationship between leader-member exchange, team climate for innovation, job demands and innovative work behavior should contribute to both theory and practice.

From a theoretical perspective, the potential findings from this study will contribute to the current body of knowledge on innovative work behavior in a way of providing empirical support on the role of leader-member exchange, team climate for innovation and job demands in mitigating innovative work behavior. By integrating learning goal orientation as mediator in the study, it will help researchers in identifying whether learning goal orientation is an important factor to be considered when considering on leader-member exchange, team climate for innovation and job demands as an effort to encourage innovative work behavior among employees. Thus, this study will provide empirical support on the interaction between the individual level variables like leader-member exchange, team climate for innovation, job demands, learning goal orientation and innovative work behavior.

The study also adopting Social Exchange Theory (Blau, 1964) in explaining the relationship between the variables proposed in the theoretical framework. Based on the ideas of social exchange theory, if employees, through their perceptions of job demands, conclude that innovative ideas are required and will be rewarded, and that the work environment through imposing team climate for innovation is focused on generating and championing new ideas, they will reciprocate with innovative work behaviors. Social Exchange Theory suggests that employees are likely to engage in innovative work behavior when they perceive that team climate for innovation, job demands and learning goal orientation is effectively imposed in the organization. As such, the present findings validated and extended the Social Exchange Theory by portraying that innovative work behavior is determined by team climate for innovation, job demands and learning goal orientation.

Practically, the findings of this study will provide directions and guidelines for development of innovative work behavior among the employees at petroleum sector. There is a need to investigate what makes employees are not innovative. Thus, the findings of this research are useful in giving some understandings to the employees, on how to be innovative to deal with the competitive advantage. The findings may provide effective contributions to petroleum companies, especially in Algeria, on the mechanisms to increase employee innovative work behavior. This study will also provide empirical evidence on the role of leader-member exchange, team climate for innovation, job demands and learning goal orientation on innovative work behavior. In fact, helping the management to identify the most important factors that can encourage innovative work behavior among petroleum employees. This study should also benefit

both scholars and practitioner and provide broader contribution that extends beyond the petroleum setting and Algerian context.

1.7 Scope of the Study

The main aim of this study is to investigate factors that might influence innovative work behavior among employees in the organization. Three independent variables, namely leader-member exchange, team climate for innovation and job demands were tested against innovative work behavior. The study also investigates the mediating effect of learning goal orientation on the relationship between leader-member exchange, team climate for innovation, job demands and innovative work behavior.

The proposed theoretical framework was tested on employees who are currently working in one of Sonatrach Corporation's nine regional directorate of production that located in South and Middle region in Algeria. Employees from production division are chosen as respondents for this study because they are directly responsible for all the production and operational activities which required them to be innovative in their work to increase the production of oil and gas.

The study adopted a quantitative approach, where the data were collected through the distribution of questionnaire to the respondents. A cross-sectional study was employed, which involved data collection at one point in time. The data collected was analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). This statistical software is suitable for dealing with complex models that involve many variables.

1.8 Definition of Key Terms

The study reports some definitions for the terms which it is used. Based on previous studies the definitions are explained.

- **Innovative work behavior**

The behavior of an individual that is intended to intentionally create, introduce, and apply new ideas, processes, or products (Janssen, 2000)

- **Team climate for innovation**

The team innovation is encouraged in a team climate where creative ideas are valued and supported, can be presented without fear of reprisal, and where team members are focused on achieving both organizational and task objectives (West, 1990).

- **Job demands**

Refer to having to work fast and hard, having a great deal to do and having too little time (Janssen, 2001)

- **Learning Goal Orientation**

Its' refers to a desire to develop the self by acquiring new skills, mastering new situation, and improving one's competence (Vandewalle, 1997).

- **Leader-member exchange**

Leader-member exchange (LMX) can be defined as a unique exchange relationship that develops between a supervisor and their subordinate which will influence the subordinate's work behaviors and attitudes (Breevaart, Bakker, Demerouti, & Heuvel, 2015).

1.9 Organization of the Thesis

This chapter is the first of five chapters in this thesis. This chapter discusses on the background and aim of the study. Discussions then continue with the issues of innovative work behavior among employees in petroleum sector in Algeria. This chapter also includes of problem statement, research questions, research objectives, significance of the study, and the scope of the study. Chapter 1 ends with the definition of key terms.

Chapter 2 gives a general review of the literature on the concept of innovation and innovative work behavior. The concepts of leader-member exchange, team climate for innovation, job demands and learning goal orientation are also presented. Discussion in Chapter 2 continues with past empirical findings on the relationship between variables tested in this study, underpinning theories, and the proposed theoretical framework. The chapter concludes with the development of hypotheses.

Chapter 3 describes the method for the study, namely the research design and procedure. The chapter reports the selection of participants, sample types and size, and the development of questionnaire for the research. Chapter three ends with a brief description of the strategies and procedures that were used to analyze data collected from the survey.

Chapter 4 reports result of the study. This includes descriptive statistical analysis of the respondents and the measurement model such as assessment of the individual item's reliability, internal consistency reliability, convergent validity, discriminant validity, the significance of path coefficients, the amount of R-squared value, effect size and predictive relevance of the model. The results are summarized in number of tables to facilitate interpretation.

Chapter 5 discusses the interpretation of the research findings for the study. The findings are compared to those found in the past research reviewed in Chapter 2. New findings are also discussed. The chapter ends with a discussion on the implications for both researchers and practitioners, limitations of the study and some suggestions for future research.



CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter sets out issues related to innovative work behavior as presented and discussed in past literature. These issues are reviewed to provide a theoretical foundation for the research. The chapter begins by describing the concept of innovation and innovative work behavior and followed by findings from past studies on innovative work behavior. The chapter then reviews how leader-member exchange, team climate for innovation, job demands and learning goal orientation related to innovative work behavior. The chapter concludes by discussing the underpinning theory, the theoretical framework, and the development of hypotheses.

2.2 Innovation and Innovative Work Behavior

2.2.1 Concept of Innovation

In 1934, Schumpeter has introduced the concept of innovation in terms of economic development in defining a mixture of new productive resources (Hidalgo & Albors, 2008). For social development and economic aspects of innovation, it consists of adoption of a change that is newness for an organization and encompass the relevant environment (Knight, 1967). Therefore, the term innovation provides the idea of novelty and change in an organization products, process, and systems. In one writing, Damanpour (1991) has put forward the concept of innovation as the adoption that appeared from new ideas or behaviors in the favored of products or services, technological advancement in production process, structure or

administration layouts, plans, or procedures of the management of adopting company. Therefore, innovation can be postulated with differing sorts of economic activity, new manufactured products, and services, marketing the products, production and exploration procedures, development of new markets, supply chain-logistics and new way of organizing by an organization (Johannessen et al., 2001; Parthasarthy & Hammond, 2002).

The innovation system model developed by Galanakis (2006) has focuses on the creation of new products, processes, knowledge, or services and imply that the existence technology can enhance the novelty to the enterprise, sector/state, or the economy to be successful in the world marketplace. In Johannessen (2009) opinion, innovation is any idea, practice or physical artifact that is perceived to be new by the related adopted unit of individual, group, or organization. In other writing, Jain (2010) asserted innovation concept to be intentional generation, acceptance, and implementation of novelty of things, products, and processes in benefiting the economic or social value. Hence, innovation domains hold a bigger picture of actions in related to creativity.

The part of creativity is the generation of idea (Mumford & Gustafson, 1988), whereas innovation covers wide range of sequential aspects, inclusively of idea development, promotion, and realization (Kanter, 1988; Scott & Bruce, 1994; Van de Ven, 1986). Innovation literature emphasized that innovation is a multistage process where creativity is the initial point that start the multistage process of innovation (Clark & Wheelwright, 1995; Janssen, 2000; Kanter, 1988; Van der Vegt & Janssen, 2003). In alternative manner, innovation is a unit of intermittent actions/ activities, rather than a discrete or consecutive process (Schroeder et al., 1989). Innovation can also promote in any amalgamation of these activities at any point of time (Scott &

Bruce, 1994). Jain (2010) for example, believed that innovation is considered as a social phenomenon of communication and interaction between those who innovate and those who are influenced by the innovation.

Kanter's model of innovation has illustrates how the individual engage in work behaviors in each part of the innovation activities, outlining the distinct actions involved. First, they involved in generation or development of idea and innovation driver's activation. Then, they develop alliance and acquirr the essential power to make the idea into a real phenomenon. Next, is the idea realization and production outcome, converting into a model, a product, plan, or program model or system that can be actualized through implementation. Finally, the dispersion or circulation of the model-spread and commercialized the product and its adoption.

The definition of innovation is further explained based on the level of analysis, innovation orientation and types of innovation. In the literature, there are authors who have proposed different level of innovation. For example, Gupta et al., (2007) proposed that innovation can happen at individual, group or organization, environment, and geographic areas level. Gopalakrishnan and Damanpour (1997) also have similar view where they proposed the industry/sector, organizational level, and subunit level of innovation. While Jain (2010) proposed innovation at the individual level, group level and organization level. In the context of competitive grounds, innovation is the vital force to capitalize issues on quality, quantity, and speed to offer a new value proposition. To maximize the value proposition, innovation should be facilitated through leadership, employee innovative work behavior, participation of customers and related stakeholders (Dervitsiotis, 2010). Therefore, this study undertakes the individual level of analysis which is based on interactive orientation.

Based on the initial studies on innovation by Schumpeter's theory of economic development and innovation, there is growing evidence that support the concept that innovation is powerful force for an organization performance. Thus, many studies have been conducted to understand what drives and provides the strength to firms to become more innovative, mainly at the organizational level (Eisenhardt & Martin, 2000; Rothaermel & Hess, 2007). One thread of research development in the literature has emphasized on individuals, their characteristics, beliefs, and behaviors as the main force of organizational performance. This development has becoming more evident in the field of strategic management and organization perspectives (Eisenhardt et al 2010; Grigoriou & Rothaermel, 2014).

More importantly, new trend has been evolved focusing on employee's innovative work behavior which is vital for organization success and without employee's innovativeness, an organization cannot be documented as innovative. As implies by Abstein and Spieth (2014), employees innovative work behavior is an important element/asset for organization success and competitiveness in today's fast-changing business environment. Singh and Sarkar (2012) argued that innovative work behavior consists of both generation and implementation of ideas where support is needed to implement the ideas. However, DeJong and Den Hartog (2007) believed that innovative work behavior encompasses not only the instigation of an idea but also the promotion, realization, and implementation of that idea. An individual may be good in creativity aspect of innovation, but innovative work behavior demands employees to be more proactive and collect all the available resources to implement the ideas as well.

2.2.2 Innovative Work Behavior

Innovative work behavior is vital in daily routines and job tasks for a company or organization to keep competitive edge and its survival in modern business competition settings (Herrmann & Felfe, 2013). Thus, employee knowledge is essential for organization if they want to be innovative and gain competitive edge in the environment. As argued by Singh and Sarkar (2012), innovative work behavior envisages in term of idea generation and implementation, and therefore, individuals support for realizing such ideas to implementation is required.

There are authors who argued that individuals who indulge in innovative work behavior normally involved in three interrelated behavioral tasks: the generation of ideas, the promotion of ideas, and the realization of ideas (Janssen 2000; Van der Vegt & Janssen, 2003; West & Farr 1989). In this essence, ideas promotion and realization are associated with innovative behavior where creativity is part of the ideas generation phase. The subject of creativity components and the constituents of innovative work behavior are extensively explored in the innovation literature. For instance, Scott and Bruce (1994) determine the impact of leadership, work group relation and employees' characteristics on innovation. They report potential high influence of supervisor-employee relation, supervisor role expectation and individual's problem solving on the degree of innovative work behavior. Likewise, Yuan and Woodman (2010) assessed the impact of expected performance outcomes or expected image gains on employee innovative behavior and acknowledged a significance contribution to the individual's innovation.

The literature on innovative work behavior has attempted to enhance our knowledge about innovative work behavior and its level of measurement.

Researchers have conflicting views regarding the measurement of innovative work behavior as a single parametric while the theoretical model proposed its measurement as multi-parametric approach. De Jong and Den Hartog (2010) argued that inter correlations between different behaviors of innovations, conjecturing innovative work behavior may be one-dimensional and endorsing Janssen's (2000) evidence that the dimensions would combine additively to create an overall measure of innovative work behavior.

Innovative work behaviors are discretionary behaviors that are not included in formal role and job description. Thus, applicability cannot be ensured, and there is no recognition based on organizational reward systems that confirmed such extra role behaviors intend to increase team and organization better-effective performance (Janssen, 2000; Ramamoorthy et al., 2005). Based on the assumption that innovative work behavior supports positively in work outcomes, numerous scholars have provided great attention towards the organizational and individual attributes that theoretically influence innovative work behavior (Janssen, 2000; Janssen et al, 2004; Mumford et al., 2002).

Innovative work behavior characterizes the innovative ideas (i.e., creation and implementation) to address the related problem / issues to improve workplace conditions or related tasks (Major & Lauzun, 2010; Yuan & Woodman, 2010). Meanwhile, Mishra et al. (2019) argued that the positive perception toward workplace settings amplify the creativity process and innovation in the organization. Thus, innovative work behavior demands individuals to overcome the existing norms and status quo and departs from routine process of doing tasks. For instances, employees may spend time on browsing internet, interacting, and communicating with colleagues, getting feedback and support of new ideas, finding suitable solution

to work related problems. For this purpose, employees can easily understand the proactive productive way of utilization the time, resources towards solution-oriented work behavior.

There are also academicians who argued that innovation that results from employee behavior are predefined up to certain levels by different contextual constructs and personal attributes (e.g., Naglieri & Kaufman, 2001). Therefore, several authors have examined the individual level in the context of innovative work behavior and characterizes multilevel and multi process activities that incorporate both the initiation and the intentional introduction of new problem-solving ideas and solutions that enhancing a product, service, or process (Baer, 2012; Černe et al., 2017; Shipton et al., 2016).

In conclusion, to develop innovative work behavior, employees need to work more than their daily job tasks and think differently to create new and practical ideas in order to enhance present organization products and processes. In this way, employees require freedom to express their views to explore creative abilities in the organization settings (Atitumpong & Badir, 2018). As a result, these interrelationships have significant important to balance the organization effectiveness with related to organizations adoptability of fast changing market conditions and workplace environment. This can be achieved through implying the process of innovation. For this purpose, organization taking effective measures to boost up individual's competence to stimulate innovative work behavior over time to remain in competitive landscapes. Importantly, researchers have been long sought about the subject, trying to identify the factors that make effect on individuals' capability of innovative work behavior (Ma Prieto & Pilar Pérez-Santana, 2014).

In the literature, there are variant measurement of innovative work behavior employed by the scholars where some developed a unit dimension (Afsar et al., 2018; Agarwal et al., 2012; Janssen, 2000; Odoardi, 2015; Scott & Bruce, 1995) while others adopted a multi-dimensional construct in their approach (De Jong & Den Hartog, 2010; Dorenbosch et al., 2000;). This study adopts the single unit dimension construct in measuring the innovative work behavior suggested by Janssen (2000) with nine items.

The following sections explained various contextual and behavioral constructs that impact individual innovative work behavior in different situations, settings, and countries

2.3 Past Studies on Innovative Work Behavior

In the past, many studies have been conducted to examine factors that might influence innovative work behavior among employees in organizations. It has been emphasized by past researchers, the importance of innovation in the context of human resource and organizational behavior. For example, Chen and Huang (2009) have conducted a study on HR practices and employee innovative behavior in terms of value creation in the Taiwanese organizations. In their study, they found that human capital and employees work behavior are important sources to initiate the process of innovative value creation. These findings were strengthened by Ma Prieto and Pilar Perez-Santana (2014) when they tested human resource practices on innovative work behavior involving 198 employees in a Spanish company. The results indicate that ability-enhancing and opportunity-enhancing human resource

practices are positively related to innovative work behaviors with the mediation of two work environment variables: management support and co-workers' support.

Research on innovative work behavior has also focused on a variety of factors as antecedents to individual's innovative behavior where mostly focused on contextual characteristics. To investigate whether there is a relationship between job demands and innovative work behavior, a study underpinned by the person-environment fit theory and social exchange theory was carried out by Janssen (2000). In this study, perceived fairness moderates the relationship between job demand and innovative work behavior when tested on 170 non-management employees from Dutch food industry. The study also revealed that job demand is positively related to innovative behavior when effort is perceived rewarded fairly.

In other study, Ramamoorthy et al. (2005) have formulated different integrated constructs to predict the relationship between organizational justice, job design and psychological contract with innovative work behavior among 204 employees of Irish manufacturing firms. The results showed that psychological contract construct and job autonomy envisaged individual-level employees' innovative work behavior. The findings further indicate a good support for the integrative model and provide support for the crucial role played by psychological contract in influencing innovative work behavior. Another contextual construct, commitment was studied by Jafri (2010) in order to test the relationship between commitment (affective commitment, continuance commitment and normative commitment) and innovative work behavior among the sample of 80 executives from the retail sector. In his study, he found that affective commitment and continuance commitment were significant predictors to innovative work behavior with positive

and negative relationship respectively. However, there is no significant relationship found between normative commitment and innovative work behavior.

To develop understanding of individual innovative work behavior, Yuan and Woodman (2010) have examined how employees' innovative work behavior explained by expectations for such behavior affect job performance (expected positive performance outcomes) and image inside their organizations (expected image risks and expected image gains) among 287 employee and 84 direct supervisors from four US companies in several different industries. The results showed that the expectations for potential performance and image consequences significantly affected employee innovativeness after controlling for individual intrinsic interest and capabilities.

Shih and Susanto (2011) investigate the impacts of innovative work behavior on conflict with co-workers and turnover intention and moderating effect of perceived distributive fairness on these relationships among 460 employees (a pair of team-supervisor and subordinates) at manufacturing and pharmaceutical companies in Indonesia. The outcomes indicate that innovative work behavior had a positive and significant relationship with conflict with co-workers and turnover intention respectively. While, perceived distributive fairness negatively moderated the relationship between innovative work behavior and both conflict with co-workers and turnover intention.

In other study, Shih and Susanto (2017) have tested the relationships between employee perceived identifiability, shared responsibility and innovative work behavior in a team context involving 142 ward heads and nurses in Indonesian hospitals. The results showed that perceived identifiability positively related and perceived shared responsibility negatively related to team pair of ward heads and

nurses innovative work behavior. Also, employee perceived co-worker trust moderates the negative relationship between perceived shared responsibility and innovative work behaviors.

Montani et al. (2017) investigated the role of proactive goal generation on individual innovative work behavior with the help of high organizational affective commitment and support for innovation among the respondents of 442 municipal employees from the administrative division of an Italian city hall. The study found that proactive goal generation positively enhance municipal administrative employees' innovative work behavior. In Agarwal's (2017) study, he found that leader-member exchanges and perceived organization support relate to psychological contract breach, which in turn, relates to affective commitment, intention to quit and innovative work behaviors when tested on 1302 managers working in eight private Indian organizations.

Černe et al. (2017) investigate the multilevel interplay among team-level, job-related, and individual characteristics in stimulating employees' innovative work behavior based on the theoretical frameworks of achievement goal theory (AGT) and job characteristics theory (JCT). A multilevel two-source study involved 240 employees and their 34 direct supervisors in two medium-sized Slovenian companies. The results report a significant level of interactions among employees and supervisors with multilevel interplay of mastery climate, task interdependence, and decision autonomy moderated the relationship between knowledge hiding and innovative work behavior. In the absence of one of these job characteristics, knowledge hiding prevents higher levels of innovative work behavior even in the case of strong team mastery climate. They argued that multiple job design

antecedents are necessary to neutralize the negative influence of knowledge hiding on micro-innovation processes within organizations.

In other study, Yasir and Majid (2019) have investigated the influence of boundary integration (BI) on innovative work behavior among 786 nurses and 144 doctors (nurse-supervisors) through self-administered questionnaires in Pakistani public hospitals. Results of the study indicate that BI among nursing staff is positively related to doctors' rating of innovative behaviors and observed that employee initiation of innovative work behavior become important for organization strength. Furthermore, the results also confirmed that the relationship between BI and innovative work behavior is stronger among nurses who frequently received support from co-workers and supervisors. Leontev (2018) focuses on the personal and socio-psychological characteristics of innovation such as employee attitudes toward innovations, the degree of employee involvement in innovation activity, personal motivation, and incentives in Russian construction firms. The findings of the study report that workers' innovative work behavior is highly impacted by number of factors like participative leadership style, management support, innovative outcomes, external business contacts and successful practice of innovation.

Saeed et al. (2019) examine how leader-member exchange relates to subordinate's innovative work behavior through core self-evaluation (CSE), domain knowledge and creative process engagement from 323 employees and their immediate supervisors (121) in Thailand's automotive industry. The results confirmed that leader-member exchange primarily strong and positively influence subordinates' innovative work behavior and creative process engagement mediated this relationship when CSE and domain knowledge were both high. The results showed that leader-member exchange, CSE and domain knowledge interacted to

affect employee innovative work behavior in such a way that leader–member exchange had the strongest positive relationship with innovative work behavior. In an interview-based study conducted by De Jong and Den Hartog (2007) on 12 Dutch managers and entrepreneurs found that there were 13 relevant leadership behaviors. They argued that leaders influence employees’ innovative behavior both through deliberate actions enhance employee’s idea generation and application as well as by their more general, daily behavior.

Another researchers, Afsar and Umrani (2019) investigate the effect of transformational leadership on employee’s innovative work behavior, and the mediating role of motivation to learn, and the moderating role of task complexity and innovation climate on the relationship between transformational leadership and innovative work behavior. Based on the survey conducted on 338 employee–supervisor working in 35 firms of service and manufacturing sectors in Pakistan, they found that transformational leadership is positively related to individuals innovative work behavior and mediate by motivation to learn. In other study, Karin et al. (2010) proposed two models to identify the LMX and satisfaction with HR practices and innovative behavior using 272 Dutch and German survey in four technical companies. They found that there was a positive relationship between leader-member exchange and satisfaction with HR practices and employees’ innovative work behavior.

Atitumpong and Badir (2018) examine the effects of leader–member exchange and employee learning orientation on employee innovative work behavior through creative self-efficacy. Data was collected from 337 employees and 137 direct managers from manufacturing industry in Thailand. The findings report that there is a positive relationship between leader–member exchange (individual-level

employees) and innovative work behavior mediates the relationships between employees' perceptions of high-involvement human resource (HR) practices, their levels of work engagement and learning goal orientation, and their proactive behaviors provided by creative self-efficacy.

In a study conducted by Maden (2015), he found that employees work engagement significantly predict individual innovativeness and increase proactive behavior through learning orientation in workplace environment when tested on 240 employees from major industries in Turkey. Schuh et al. (2018) in their study discovered that with high quality interactive influence of leader-member exchange, employees tend to be more innovative with supervisory performance ratings. The study involved 143 employees and 29 leaders in Chinese engineering firm. In addition, Aggarwal and Bhargava (2010) have conducted a study to determine whether psychological contract which comprised of transactional and relational psychological contract have effects or not on the innovative work behavior and psychological ownership among 307 employees working in four organizations in India. The results indicate that transactional psychological contracts were significantly related to both innovative work behavior and psychological ownership while innovative work behavior was not significantly predicted by relational psychological contract.

The importance of innovative work behavior in service delivery was examined by Slatten (2011). In his study, he found that it is important to assess the emotions of employees as it had been found to affect the innovative work behavior which is paramount when service is offered to customers. The study was conducted on 279 frontline employees working in the hospitality industry.

De Jong and Den Hartog (2010) developed measurement of innovative work behavior that consists of four potential dimensions: the exploration, generation, championing, and implementation of ideas to enhance the interactional aspect of individuals' innovative work behavior. The study was conducted on 703 matched dyads of knowledge workers and their supervisors in 94 knowledge intensive services companies in Netherlands. The evidence showed that the distinctiveness of the four dimensions was weak. They found some high inter correlations, suggesting that innovative work behavior may be one-dimensional, and supporting Janssen's (2000) earlier conclusion that the dimensions would combine additively to create an overall measure of innovative work behavior.

Tierney and Farmer (2011) study provide a longitudinal examination of the development of creative self-efficacy in an ongoing work context among the chief executive, supervisors, and members of the Human Resources department of a state-sponsored welfare organization in USA. This study conducted in two time zones of 6-month lapse such as at Time 1, 278 employees and 51 supervisors were surveyed and at Time 2, 225 and 42 supervisor responses were collected. Results of the study showed that increases in employee creative role identity and perceived creative expectation from supervisors over a 6-month period were associated with enhanced sense of employee capacity for creative work (innovative work behavior) and increases in creative self-efficacy corresponded with increases in creative performance as well.

In another longitudinal study, Ng and Lucianetti (2016) testified that organizational trust and perceived respect in self-efficacy beliefs enhance the individuals' innovative work behavior when tested on 267 employees of Italian

companies. The results suggest that organizational trust and perceived respect in self-efficacy beliefs stimulate the employees' innovative work behavior.

By integrating social networks and leader–member exchange theory, Wang et al. (2015) explore the effects of three types of social relationships on employee innovative behavior: weak ties outside the group, leader–member exchange, and strong ties within the group. The study surveyed 135 employees in a high-tech / entrepreneurial firm in China and interviewed with seven personnel: the CEO, three supervisors, and three staff members. To obtain a complete picture of the organizational social network, they administered an online survey to all 135 employees. The results indicate that social relationship effects the employee innovativeness and leader–member exchange shows a positive significant relation and fully mediates the relationship between social networks and innovative behavior in a high-tech Chinese company.

Underpinned by the Social Exchange Theory, Kheng et al. (2013) attempts to determine the relationship that may exist between pro-innovation climate, leader–member exchange, and social capital with the innovative work behavior among 1520 employees in knowledge workers in the knowledge-intensive business service (KIBS) sector in Malaysia. The findings suggest that pro-innovation climate, social capital, and leader–member exchange have a significant impact on the workers of Malaysian knowledge-intensive business service sector. In another study, Ren and Zhang (2015) attempt to examine the influence of job stressors and organizational innovation climate on employees' innovative behavior among the 282 employees of R&D teams of different firms in four cities of China. The result reports that job stressors and organizational innovation climate influence the employees innovative work behavior among the employees of R&D teams. Job stressors such as challenge-

motivational (hindrance) have positive (negative) effect on the phase of idea generation whereas the benefits of organizational innovation climate show a weak impact on idea implementation stage of innovation process.

Thus, innovation becomes vital for organization to cope with environmental challenges, employees' innovative abilities and sequential behavior are the basic elements of organization long term competitive survival, renewal, success, and growth (Agarwal, 2017; Chen & Chen, 2012; De Jong & Den Hartog, 2007; Jansen et al., 2006; Martinez-Conesa et al., 2017; Shalley et al., 2004; Zhou & Hoever, 2014). With growing competition, firms require to indulge in innovative process to produce and deliver products or services in gaining competitive advantage and to lead the change-oriented process (Ramamoorthy et al., 2005). It could be concluded that for organizations to become innovative need to rely on the individual employees. Hence, to get benefits from innovation process, employees require to involve in innovative activities. Particularly, organization effectiveness comes from creativity at work (new ideas generations), and innovation (to practically execute these ideas).

Reviewing past literature on innovative work behavior indicate that there is a paucity in research on the part of team climate for innovation, job demands, learning goal orientation perspective and their influence on employee's innovativeness especially, in the petroleum sector organizations in Algeria.

2.4 Leader-member Exchange

According to Afsar and Masood (2017) and Jyoti and Dev (2015), leaders are one of the most important preconditions for innovation in the workplace. Yulk (1998) and Scandura (1999) defined leader-member exchange as the interactions

between a leader and a subordinate that are characterized by reciprocal influence and interdependencies. The fundamental tenet of the leader-member exchange theory is that leaders forge higher-quality exchanges with some of their followers while relying more on the employment terms with others.

According to the leader-member exchange theory (Graen, 1976; Graen et al., 1982; Graen & Uhl-Bien, 1995), subordinates will be given more resources and discretion when making decisions when there are good relationships between them and superiors (Cotgrove & Box, 1970; Pelz & Andrews, 1966). The ability to generate and test new ideas depends on the availability of resources, time, and freedom (Kanter, 1988), which also improves the likelihood that innovative work behavior will be successful (Yuan & Woodman, 2010). When there are healthy connections between superiors and subordinates, the faith in the importance of innovative work behavior in performance and efficiency benefits grows (Yuan & Woodman, 2010). Using Social Exchange Theory, managers and subordinates formed interpersonal interactions where both parties had to provide something of value to foster an environment of equality (Sparrowe & Liden, 1997)

In the past, there were many researches who investigate the relationships between leader-member exchange and work innovative behavior as an attempt to identify those leadership behaviors that would likely be able to develop innovative work behavior in terms of idea generation and application behavior among employees. A study of managers and entrepreneurs who worked in knowledge-intensive service firms was conducted by De Jong and Den Hartog in 2007. The study was able to identify 13 leadership traits that had 64 direct effects on employees' innovative behavior, whether idea development, concept implementation, or both. They discovered that, in addition to the thirteen behaviors they had previously

identified, employees' innovative work behavior can also be influenced by their managers on daily basis.

Suhaimi and Panatik, (2016) conducted a conceptual paper on literature review on relationship between leader-member exchange and innovative work behavior. After reviewing extensive literature, they were found that the relationship between leader-member exchange and innovative work behavior is not always significant as there are inconsistencies in the findings of previous studies. Moreover, he found that relationship between leader-member exchange, innovative work behavior and work engagement is significant.

In addition, a study was conducted by Schuh et al. (2018) on interactive effects of employee innovative work behavior, and leader-member exchange on supervisory performance ratings. This study showed that employees receive more favorable performance ratings by engaging in innovative work behavior when they have high-quality leader-member exchange relationships.

Meanwhile, Sanders et al. (2010) conducted empirical research on innovative work behavior of employees. In their study, aspects related to idea such as creation, introduction, and implementation of idea for performance improvement purpose were all regarded as the important elements in organizational effectiveness. In order to carry out the study, samples of 272 respondents were collected from four Dutch and German technical organizations. The purpose of the study was to investigate the relationships that may exist between leader-member exchange, with innovative work behavior. Satisfaction was assessed based on employee influence, flow, rewards and work content. It was discovered that employee innovation in the workplace was significantly positively correlated with leader-member exchange and HR satisfaction. At the same time, the study also found that the relationship between leader-member

exchange and innovative work behavior was mediated by HR satisfactions while no the relationship between leader-member exchange and HR satisfaction were found to be insignificant.

Even though the above reviews revealed leader-member exchange can result in many attitudinal outcomes, nevertheless there are limited studies that have researched on the effect of leader-member exchange on innovative work behavior. Thus, it is necessary to review the potential influence of leader-member exchange on innovative work behavior.

2.5 Team Climate for Innovation

A team climate for innovation, creates flexibility, expressiveness in employees and desire to learn and develop their skill set. In highly innovative climate, team members provide unbiased opinions about novel ideas and follow proper procedures to accept or reject new ideas (West, 1990). Moreover, team climate for innovation is helpful to achieve goals on time and enhances employee's capabilities (West & Farr, 1990). Innovative team efforts are helpful to gain new ideas and to realize them due to team harmony (Chen & Hou, 2016). Thus, team climate for innovation is useful to develop or implement the creative ideas successfully.

The organizational climate is defined as a set of shared perceptions regarding the policies, practices, and procedures that convey messages regarding what is rewarded, supported, and valued in an organization (Charbonnier-Voirin et al., 2010, p. 705). Anderson and West (1998) developed Team Climate Inventory Scale (TCI) which measures group or team climate. They proposed four dimensions; vision,

support for innovation, task orientation, and participative safety. Hülsheger et al. (2009) proved through meta-analysis approach to predict individual or team creativity using these dimensions.

Schneider and Reichers (1983) defined team climate as shared perceptions of organizational environment about practices, organizational procedures, and reward policy. Team climate depends upon the behavior of leaders and team members. Thus, interaction among team members depicts their team values which conveys their messages, what is acceptable or not acceptable inside the group or team. Van Knippenberg (2017) further describes climates as having descriptive alongside normative elements in which organizational culture explains how we do things and how we believe things will be done.

West (1990) and other scholars proposed the four dimensions of team climate. Shared objectives and vision (team members have same objectives and vision to achieved combined goals), task orientation and climate for excellence (team members motivated to enhance their productivity and performance), support for innovation (team members support and encourage innovation) and participation safety (all members have equal chance to participate in decision making process). Some scholars crafted measurement on the team climate inventory TCI (Anderson & West 1996, 1998). These propositions are supported by existing literature and meta-analysis approach (Bain et al., 2001; Burningham & West, 1995; Hülsheger et al., 2009; Pirola-Merlo 2010; West & Anderson 1996). In innovation studies, the team climate perspective is considered as major perspective in understanding climate for innovation. The second important perspective is that the team members have shared objectives and vision to achieve innovation. Hence, innovation in team or group[s] is define as the intentional introduction and application within a role, group or

organization of ideas, processes, products, or procedures, new to the relevant unit of adoption, designed to significantly benefit role performance, the group, the organization, or the wider society (West & Farr, 1990).

This definition creates a situation that innovation is confined to intentional attempts to achieve desired benefits from existing change which anticipate broader perspective of development instead of narrow perspective (economic benefits). In broader context, a firm may get efficiency in administrative affairs, well-being of team, satisfaction of employees, group coordination, effective communication, personal development, enhanced productivity, and some economic benefits. Furthermore, team climate for innovation is not restricted to individual, group, or firm level, it also welcome new technological, social development in the organization and welfare of the society. Finally, organization keep their ears and heart always open towards new and novel ideas. So, idea applied by other organization may also be an acceptable idea for this team and considered as innovative idea (West & Anderson, 1996).

Team climate for innovation elements represent as a shared perception of team members behavior how team perform different tasks and functions in the workplace environment. Agrell and Gustafson (1994) study the elements of team climate inventory, asserting that the “four-factor version” of team climate inventory is an effective instrument to facilitate team innovative capacity. West and Anderson (1998) investigate both the four-and five-factor versions of team climate inventory, supporting an effective measure of the team climate inventory elements. Kivimäki et al. (1997) report that the elements of innovation vary based on the job complexity and provide a self-report instrument of group innovation climate using team climate inventory (four and five sub-scales factors) with job complexity. Anderson and West

(1998) reports the development and psychometric validation of a multi-dimensional measure of facet-specific climate for innovation within groups.

The analysis provides initial support for the utility of the measure as a self-report measure of facet-specific climate within work groups and organizational teams. In addition, team climate inventory was, later, testified by several studies provide supportive outcomes of team climate for innovation foster innovation among different teams and groups in the organizational environment.

Proximal work group is suitable level of analysis to study perceptions of innovative climate (Anderson & West, 1998). Members of this group are familiar with group norms and values. Effective communication among group members will develop consensus on different novel ideas. Attraction, selection, attrition, and socialization in team climate for innovation is helpful to reduce variation in perceptions and experiences (Kozlowski & Klein, 2000). Consequently, positive individual's climate perceptions can be considered as coherent group phenomenon.

Team climate inventory measurement of Anderson and West (1998) and Kivimaki and Elovainio (1999) are used to investigate team climate for innovation. Chen and Hou (2016) argued that "climate for innovation" may be considered as unidimensional construct instead of multidimensional construct. In empirical support by Somech and Drach-Zahavy (2013), confirmatory factor analyses were conducted on all items of climate for innovation to determine the suitability of scale. Somech and Drach-Zahavy (2013) compared four, three, two and one factor models and recommended that one factor model is more appropriate to investigate climate for innovation.

2.6 Job Demands

Job demands refer to those physical, social, or organizational aspects of the job that require sustained physical or mental effort and are therefore associated with certain physiological and psychological costs (Dediu et al., 2018; Demerouti et al., 2001; Martín Hernández et al., 2007; Trépanier et al., 2013). Jobs demands can have both positive and negative effect on employees behavior in the workplace settings. Employees put their energies to fulfill the job demands (Bakker & Demerouti, 2008; Schaufeli & Bakker, 2004). However, demotivated, and exhausted due to excessive job demands will deteriorate employees' motivation, and engendering feelings of burnout and exhaustion. Consequently, employees might lower their innovative work behavior (e.g. reluctant in adopting new process, decreasing their work tempo, reducing capabilities) in an attempt to protect their resources and energy level. These changes may be due to "job demands" become stressors in particular conditions and settings.

The Job Demands-Resources Theory proposed the processes through which job attributes or elements may influence functioning performance of employees (Hackman & Oldham, 1976). More importantly, the JD-R model differentiates between an energetic process linking job demands to burnout, and a motivational process accounting for the job resources-work engagement relationship (Bakker & Demerouti, 2007). According to the Job Demands-Resources Theory, there are two major parts (job demand and job resources). These two factors are seen in specific tasks (i.e., interruptions in performing tasks, tasks feedback), work (workload on employees, autonomy to do different activities), social interaction (support from co-worker) and team (work pressure while performing group activities). It normally

holds general job characteristics and job-related tasks. On the contrary, job demands increase motivational effect of job resources (Bakker & Demerouti, 2007). When job demands are high, job resources boost the work engagement, well-being of employees. The JD-R model holds the active learning hypothesis which proposed that active jobs (high demanding and control) are challenging which will improve the skill set of employees (Karasek, 1979).

Literature on the JD-R model got huge response and attention from scholars that how different job characteristics effect individual and organizational outcomes (Van den Broeck et al., 2013). Generally, plentiful literature validated the JD-R model and verify its predictive power. Consequently, Job Demands-Resource Model is well-established and attract different scholars on employee well-being and innovativeness.

Sonnentag and Bayer (2005) defined the workload as a high amount of work and implies that an individual has too much to do in too little time. Individual can utilize personal capabilities to perform tasks. Workload can be defined as the degree to which individual utilize personal resources to complete the job tasks. Workload contains different aspects; amount of work and number of tasks to be done; time and the particular aspect of time one is concerned with, and, the subjective psychological (mental workload) experiences of the employees (Cain, 2007).

Work pressure is an important element of job demands. Psychologically, it is consider as cognitive energetic state of mind of a person. On job a person perform different tasks regularly which produce stress which will convert into pressure. While performing any task a person shows his psychological and phisiological symptoms. Karasek and Theorell (1990) defined work pressure as that an individual has more work to do in less time. Further, time pressure is another aspect of job

demands, defined as the level of stress perceived by individuals due to time hurdles (typically deadlines) while performing the job tasks (Kelly & Karau, 1999).

There are mixed evidence in the literature where job demands can be considered as good or bad job stressors (Breen, 2004; Cavanaugh et al., 2000; Hennessey & Amabile, 2010; Podsakoff et al., 2007; Roskes et al., 2013). Though it is suggested that job demands might provide challenges in work, Steenland, et al. (1997) argued that job demands may also become stressors in situations that require high effort to sustain an expected performance level, and this might elicit negative responses such as burnout. Cavanaugh et al. (2000) found that job stressors such as role conflict, role overload, and role ambiguity involve high level of undesirable constraints and inhibit an individual's capabilities to achieve desired work. On the other hand, good stressors like high workload and time pressure are also become challenger stressors in enhancing innovation activities and rewarding work experiences (Podsakoff et al., 2007).

Literature on the JD-R Model got huge response and attention from scholars that how different job characteristics effect individual and organizational outcomes (Van den Broeck et al., 2013). Generally, plentiful literature validated the JD-R model and verify its predictive power. Consequently, Job Demands-Resource Model is well-established and attract different scholars on employee well-being and innovativeness. The importance of how employees perceived they have rewarded, found to have effect on innovative work behavior. In a higher level of job demands situations, the employees' perception that they are rewarded with fairness by the leaders, become more innovative (Janssen, 2000).

2.7 Learning Goal Orientation

The concept of goal orientation emerged in 1980s from a study conducted by Carol Dweck and her colleagues with grade level students. The study examines individuals' approach to, engagement in, and responses to their academic work. The why and how they strive to accomplish different objectives. The reasons can vary among individuals such as being interested in learning or doing better than others.

Dweck proposed two classes of goals that individuals carry in achievement situations which are learning goals and performance goals. Research has shown that these goals reveal implications for the task's students choose, how they approach these tasks, how they react to the outcomes, and in the end, what they learn (Elliot & Dweck, 1988). Learning oriented students are more attracted in enhancing their level of competence. As highlighted by Kaplan and Maehr (2007, p.151) learning orientation refers to "a purpose of personal development and growth that guides achievement-related behavior and task-engagement." On the other hand, performance-oriented students are more interested in demonstrating their competence. Studies showed that performance-oriented goals foster avoidance of challenging tasks due to anxiety about failure (Dweck & Leggett, 1988).

Dweck (1992, p.166) states that the study of goals has given us a new and useful way of understanding personality and individual differences, and of conceptualizing the interplay of personality and situation. Numerous lines of research now speak to the utility of goal concepts for understanding personality. That is, the study of people's goal tendencies (i.e., their tendencies to pursue certain types of goals and goal strategies) has yielded evidence of relatively consistent and enduring

patterns of behavior, ones that play a clear role in the individual's psychological functioning and that are predictors of important life outcomes.

According to Dweck (2000), learning orientation means an individual behaviour towards learning skills, knowledge, competence, and capabilities. In the institutional setting, individual learning depends on the organizational interaction among employees and in result of observing different behaviours. Employees having more learning orientation accept challenges and learn through those opportunities (Fenwick, 2003; Gong & Fan, 2006). Individuals accept challenge of learning orientation will control their mistakes, gain knowledge of unknown situations (Janssen & Van Yperen, 2004). For example, a person with a strong learning orientation continuously searches for ways to improve knowledge and skills. Hence, Atitumpong and Badir (2018) acknowledged that employees innovative behaviour depends on the employees learning to improve their competences.

When task is approached from a learning goal orientation, individuals strive to understand something new or to increase their level of competence in given activity (Button et al., 1996). Button et al. (1996) and Dweck (1986) argued that learning goal orientation is relatively stable dispositional trait that individuals bring with them into relationships with other. It is believed that learning goal orientation motivate individual employees' behavior which will increase their productive capacity. Dweck and Leggett (1988) believed that individuals with different learning goal orientation have different preferences to achieve their goals.

Organizational success majorly depends on the learning orientation and innovative behavior of employees (McGuinness & Morgan, 2005). Since learning orientation is also related with a favorite for challenging and demanding tasks, employees with a powerful learning orientation likely to be more intrinsically

inspired to request out innovative activities (Ellström et al., 2008). According to Janssen and Van Yperen (2004), learning orientation is expected to improve innovative work behaviors by engendering the growth of relevant skills. These skills offer the important background information and the basis for development and creation of something novel.

In other writing, Ames and Archer (1988) argued that individuals with a learning orientation seek challenges that provide them with learning opportunities. Consequently, learning goal orientation enhance self-competence which is an important part of innovative work behavior, However, Bandura (1997) has highlighted this situation hold uncertainties, risks and failures. When employees are confident then they control their fear of failure and uncertainties. Thus, the literature has posited that as learning-oriented employees enjoy working on complex and new tasks, they are more expected to seek out innovative activities.

With learning goal orientation, individuals seek to develop their competence by acquiring new skills and mastering new situations. Elliott and Dweck (1988) argued that exploration of learning goal orientation to enhance employees motivation behavior towards innovative tasks, it is worth remarking that, as proposed by goal orientation theory, individuals having learning goal-oriented are more prone to challenges, to enhance their skill set and capabilities.

Supporting this idea, Montani et al. (2014) also believed that employees who involved in learning goal orientation they accept challenges as opportunities which will further enhance their desire to accept more challenges. In short, learning goal orientation attached with skill development and intrinsic motivation and its result is innovative work behavior.

2.8 Underpinning Theory

The study adopts Social Exchange Theory (SET) to support the proposed theoretical framework in the context of individuals innovative work behavior. SET is developed based on multidisciplinary area comprised of economics, psychology, and sociology to understand human behavior in the dynamic relationship cycle (Homans, 1958). Economic exchange is considered as selling and buying particular goods, or resources, to satisfy personal needs or wants. On the other hand, social exchange is seen as a form of activity where two or more persons will engage in a tangible or intangible activity that can be either rewarding or costly (Blau, 1964). The exchange of those materials is conducted with reciprocal expectation and with no mechanisms to enforce particular benefit.

Following the individualists' tradition, Blau (1964) exchange theory attempted to strengthen Homans's conceptualization of the economic basis of social exchange. Blau suggested that social exchange will occur when an individual expects what is associating with him to be in some way rewarding for himself, and his interest in the expected social rewards draws him to the other. The theory is suggestive of calculating individuals attempt to maximize their gains from social interactions. It is important to note that the exchange occurred between employees and others go well beyond simple economic exchange. Although some exchange may be purely instrumental with the payoff involve monetary, social exchange elicits positive affect, trust, and kinship. As argued by Blau (1964, p. 94), "only social exchange tends to engender feelings of personal obligation, gratitude, and trust; purely economic exchange as such does not." Social exchange (which had previously been called psychological exchange in early social exchange literature-e.g., Homans,

1961) involves obligations that are unspecified and lacking a standard of value. Thus, in a social exchange, participants are not prioritizing equivalencies in value, as opposed to economic exchange, which clearly defines what will be exchanged and at what time reciprocation will occur (Liden et al., 1997).

SET is among the most influential conceptual paradigms for understanding workplace behavior (Cropanzano & Mitchell, 2005). Social exchange comprises actions contingent on the rewarding reactions of others, which over time provide for mutually and rewarding transactions and relationships. As such, social exchange involves interactions that generate obligations, resulting in a mutually rewarding exchange or transaction between two mutually contingent parties (Emerson, 1976). Such exchanges may include an exchange of activity, tangible, or intangible, that is more, or less rewarding, or costly for at least one party (Homans, 1961).

Social balance between reward and cost will affect the development, maintenance, and the dissolution of an exchange relationship (Thibaut & Kelly, 1959). The exchange relationship can be thought of as a form of exchange among the participants that involves valued resources, the rewards and cost in which the participants can either receive a profit or loss in such exchanges (McDonald, 1981). In 1901, Chavannes argued that exchange lies at the base of all relations of men to each other and is the groundwork on which society is built (Nakonezny & Denton, 2008, p.59). In other words, he believed that exchange embraces all the possible transactions between human beings, from the largest material business transaction to the exchange of love and affection.

In fact, social exchange facilitates the foundation of norms of responsibility in assisting knowledge provider, which eventually leads to reciprocity (Cropanzano & Mitchell 2005). Thus, this kind of responsibility is considered as voluntary

because there are no mechanisms that can enforce receivers to respond reciprocally. In such scenario, sense of trust, obligation and commitment play a significant role (Blau, 1964; Cropanzano & Mitchell 2005). It is absolutely difference from the economic exchange, where commitment is no more significant once exchange is already done. Therefore, it is claimed that social exchange is determined by an individual's positive anticipation and psychological obligations which are considered to start slowly, and when there is frequent exchange, there are equilibrium and rationale (Molm et al., 2000).

Social exchange relationships are different from purely work relationships (e.g., reporting relationship between employee and manager) because such relationships are neither dictated by organizational policies nor based on purely economic exchange. Rather, social exchange relationships are a result of employees' perceptions of their relational environment (Blau, 1964). Management research has focused extensively on the nature of employees' social exchange relationships in the workplace. Seers et al. (1995) emphasized on these reciprocity-based exchanges are predictive of employees exhibiting positive work behaviors.

Drawing on SET, the relationships are evolved over period of times into trusting, loyal, and mutual commitments. SET outlines that such relationships will only be fostered under ideal conditions (Cole et al., 2002). Organizational behavior is framed based on certain exchange rules or principles. To facilitate an environment that fosters workplace relationships, employees need to follow the rules and norms of exchange, as guidelines to the exchange process. Whenever individuals contribute their skills, expertise and knowledge to the co-workers or group members, it draws out a sense of obligation and reciprocal expectation from the others who will share

their knowledge, skills, and expertise in the future (Brock et al., 2005; Tsai & Cheng, 2012).

In the past, SET has been commonly used by many scholars to underpin innovative work behavior (Brunetto, 2013; Cropanzano & Mitchell, 2005; Khaola & Coldwell, 2018; Xerri, 2013; Xerri & Witte et al., 2014). For example, a social exchange model of creativity was developed by Khazanchi and Masterson (2011) and the focus was on perceived organizational support and leader–member exchange. Janssen (2000) has explicitly links the quality of the social exchange relationship to determine employees' innovative work behavior in the organization. Based on the social exchange relationship, he found that employees are willing to reciprocate by discretionary behaviors like innovative work behavior that go beyond contractually determined job demands. The extent to which workers respond innovatively to higher levels of job demands is contingent upon the quality of the social exchange relationship with the organization. Cropanzano and Mitchell (2005) also found how SET explains the association between job demands and innovative work behavior, as it is an influential paradigm concerning organizational behavior.

In performing innovative work behavior, it could be contingent upon employees' perceptions of the social exchange relationship with the organization and this prototype of relationships characterized as either economic or social exchange in value (Young, 2012). SET explains that employees in return reciprocate through higher engagement, effort, in-role performance, and positive work outcomes (Schermuly et al., 2013).

Though SET has been widely used to describe interpersonal relationships in the work setting, the question of how individual employees build an interactive relationship with the team climate for innovation, job demands, learning goal

orientation and innovative work behavior is still under study. SET provides insight into the social exchange interactions between employees and team members within the organization environment to explain the mechanisms that lead to innovative work behavior (Schermuly et al., 2013; Young, 2012; Xerri, 2013). SET explains the relationships that are evolved over period of time into trusting, loyal, and mutual commitments (Blau, 1964; Cropanzano & Mitchell, 2005), and employees to reciprocate good behavior by engaging in innovative work behaviors (Janssen, 2000).

SET provides guidelines to the concept of team climate for innovation in the workplace settings. West (1990) defined team climate for innovation as the regular interaction of group member to perform and exchange work related tasks within a proximal team group. Employee innovation is the outcome with the reciprocal of team climate for innovation in diffusing the clarity of vision and commitment to objectives, decision making and participative safety, task orientation-climate for excellence of quality of task performance and support for innovation in the workplace environment. When employee/ individual of team member participated in decision making, they have influence and free to express their ideas and have higher commitment and tend to invest more energy in innovative ideas with trust and mutual support (West & Anderson, 1996). Support of innovation is the expectation, approval, and practical support to introduce new ways of doing things in the work environment (West, 1990). Teams high on this dimension are striving for the highest standards of performance achievable. In fact, these team process variables emerge clearly as the most powerful agents of innovative work behavior (Hülshager et al., 2009).

As suggested by Van Knippenberg, (2017), team innovation has a valuable importance both in organizational psychology and organizational behavior, as well as employee's innovative behavior at the level of organizational practice. The use of the team climate for innovation can be a powerful diagnostic and performance management tool for innovation (Loewen & Loo, 2004)

Furthermore, the literature on SET provides findings that job demands in better suitable workplace conditions can motivate individuals to participate in innovative work behavior with other employees (Janssen, 2000). Job demands can be located at the level of specific tasks (e.g., task interruptions, feedback from the task), work (e.g., workload, autonomy), social relations (e.g., social support from colleagues), and team (e.g., group work pressure) (Van den Broeck et al., 2013). According to SET, innovative work behavior may help the individual to improve his or her fit with higher job demands by generating, promoting, and realizing ideas for modifying oneself or the work environment (Janssen, 2000). It has empirically demonstrated that workers consider innovative behaviors as an effective way of dealing with a heavy workload (Bunce & West, 1994; West 1989).

Moreover, Janssen (2000) supports the relationship between job demands and innovative work behavior using SET framework. That is, higher job demands are assumed to precipitate employees to respond with higher levels of innovative work behavior (Bunce & West, 1994; West, 1989)

SET is based on a central premise that the exchange of social and material resources is a fundamental form of human interaction (Blau, 1964). Lemon and Sahota (2004) also proved that learning goal orientation (mastery of knowledge) can increase the capacity for innovation and is increasingly recognized as a key resource for innovation. SET provides support to understand the relationship between learning

goal orientation and innovative work behavior. Learning orientation is process of inputs that employees put effort to acquire new skills, abilities, and knowledge to reciprocate the outcomes of innovative work behavior in the organizational workplace settings. This theory suggests that when individuals face with difficult and challenging work environment and their organizations support them in term of learning new skills, abilities, and knowledge, they will have opportunities to benefit from learning to develop innovative work behavior with co-employees and team members. Thus, high level of learning orientation enhances the employee's competence and capability for innovative behavior for organizational competitive advantage and success. It is concluded by Amara et al. (2008) that learning is a factor that directly affects innovation.

In relation to SET with supportive role of learning goal orientation, innovation work behavior is central to employees learning with outcomes of innovation performance with others organizational employees. In view of learning orientation, SET facilitates the foundation of norms of responsibility in assisting knowledge provider, which eventually leads to reciprocity (Cropanzano & Mitchell, 2005). Thus, this kind of responsibility is considered as voluntary because there are no mechanisms that can enforce receivers to respond reciprocally. Consistent with SET, employees in return reciprocate through higher engagement, effort, skills, in-role performance, and positive work outcomes (Schermuly et al., 2013).

Employee learning goal orientation is chosen as the predictor of employees' IWB and learning orientation influence employees' innovative work behavior. It is related to actions intended to improve an individual's ability, knowledge, skills, and competence by obtaining and sharing information (Atitumpong & Badir, 2018).

The leader-member exchange builds on social exchange theory (Blau, 1964) and assumes that supervisor has a unique relationship with each employee (Graen and Uhl-Bien, 1995), which is negotiated over time as a result of role expectations and fulfillments between leaders and members. High leader-member exchange means that subordinates perceive their immediate supervisors as supportive, caring, trustworthy and loyal. Consistent with social exchange theory, employees in return reciprocate through higher engagement, effort, in-role performance, and positive work outcomes (Schermuly et al., 2013). Employees engaging in innovative work behavior are expected to spend more time on non-routine tasks to think out of the box and propose novel and practical ideas to improve existing organizational processes, and they want freedom and less restricted environment to flourish their creative abilities. High leader-member exchange ensures these characteristics. Innovative work behavior involves not only the initiation of an idea but also the realization and commercialization of that idea (De Jong & Den Hartog, 2007). An individual may be good in proposing new ideas but innovative work behavior needs employees to come forward and gather all the resources to implement ideas as well.

Based on Social Exchange Theory, the theoretical basis of the leader-member exchange model provides an alternative approach to the study of leadership (Graen & Scandura, 1987). Leader-member exchange posits those leaders and members engage in number of exchanges and interactions over time, thus affecting the development of the relationship between two parties involved (Sparrowe & Liden, 1997). Drawing on Social Exchange Theory, interpersonal relationships evolve between supervisors and subordinates, where both parties must offer something valuable to create an atmosphere of fairness and equity (Sparrowe & Liden, 1997). In a study conducted by Scott and Bruce (1994), they found that there was a direct relationship between

quality of the exchange relationship with the supervisor and innovative work behavior

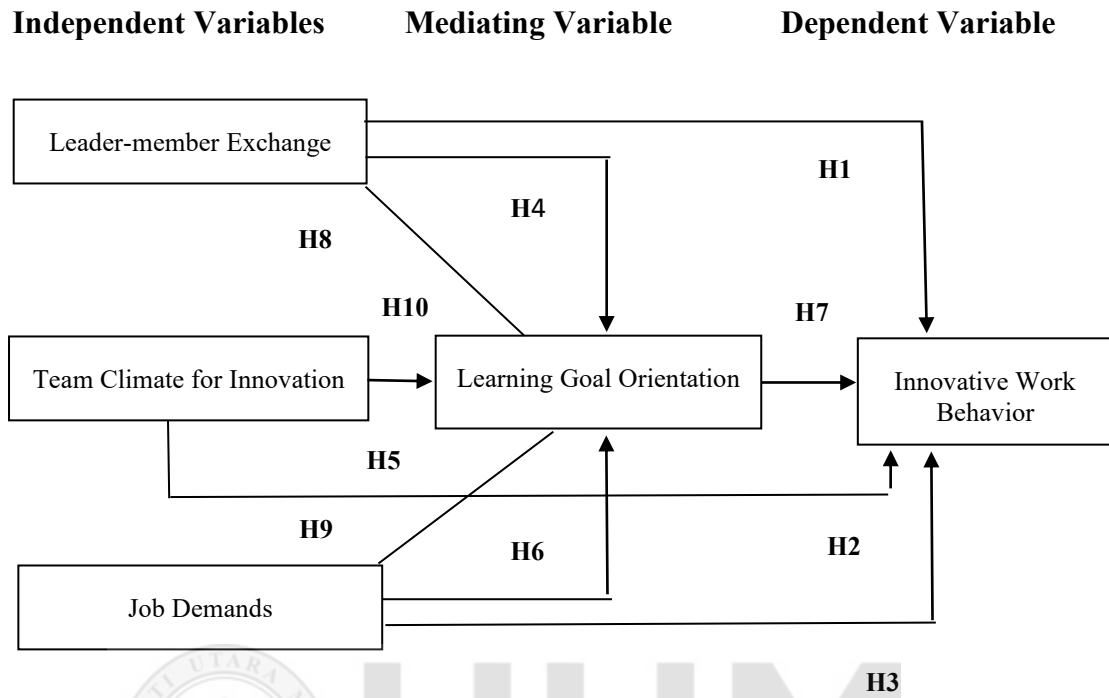
Reviewing the literature showed that there are limited studies employing SET to understand and explicate underlying factors of innovative work behavior among employees in the petroleum sector. The study adopts SET to support theoretical framework in the context of individuals innovative work behavior.

Hence, the study focusses upon SET with the intricate synergy between leader member exchange, team climate for innovation, job demands and mediating role of learning goal orientation on the relationship with employee innovative work behavior.

2.9 Theoretical Framework

Figure 2.1 shows the proposed theoretical framework tested in this study. The proposed theoretical framework was developed based on the gap in the literature on innovative work behavior and based on the Social Exchange Theory (SET). In this study, leader- member exchange, team climate for innovation and job demands are the independent variables. While innovative work behavior is the dependent variable. The study also tested learning goal orientation as a mediating variable in the relationship between leader-member exchange, team climate for innovation, job demands and innovative work behavior. In this study, leader-member exchange, team climate for innovation and job demands are proposed to have direct influence on innovative work behavior and learning goal orientation. While, learning goal orientation is expected to mediate the relationship between leader-member exchange, team climate for innovation, job demands and innovative work behavior.

Figure 2.1
Theoretical Framework



2.10 Development of Hypotheses

2.10.1 Relationships between Leader-member Exchange and Innovative Work Behavior

Employee innovative work behavior has been found affected by the leader-member exchange in previous researches (Atitumpong & Badir, 2018; Alsughayir, 2017; Bernerth et al., 2016; Shunlong & Weiming, 2012). The importance of how employees perceived they have rewarded, found to have effect on innovative work behavior. In a higher level of job demands situations, the employees' perception that they are rewarded with fairness by the leaders, become more innovative (Janssen, 2000). This outcome occurs as employees see the presence of distribution equity and rewards, thus encourage them to higher engagement in innovative work behavior (Sanders et al., 2010; Atitumpong & Badir, 2018).

The Social Exchange Theory can also explain the social interactions between leader-member exchange and innovative work behavior (Atitumpong & Badir, 2018; Sparrowe et al., 1997). The theory suggested that a higher quality of relationship between leaders and followers can lead to innovativeness. Carnevale et al., (2017) support this prediction where their study have reported that high-quality exchange relations and interactions among leaders and subordinates lead towards innovative work behavior. A number of earlier studies has suggested the outcome of leader-member exchange construct which elaborate the link with employee innovation and creativity at workplace settings. Initially, Tierney *et al.* (1999) found a positive relationship between high-quality leader member exchange relationships and employee creativity. Later, Janssen and Van Yperen (2004) strengthen the initial findings, provide outcome of a positive impact of leader-member exchange on employee innovative work behavior.

High leader-member exchange means that subordinates perceive their immediate supervisors as supportive, caring, trustworthy and loyal. Consistent with Social Exchange Theory, employees in return reciprocate through higher engagement, effort, in-role performance, and positive work outcomes (Schermuly et al., 2013). Employees engaging in innovative work behavior are expected to spend more time on non-routine tasks to think out of the box and propose novel and practical ideas to improve existing organizational processes, and they want freedom and less restricted environment to flourish their creative abilities. High leader-member exchange ensures these characteristics.

Organizations are characterized by employees since employees are the dominant entity and involved in all activities in organizations and supervisors are viewed as the direct agent of organizations (Sanders et al., 2010). Therefore, any

actions by the supervisor as argued by Carnevale et al. (2017) are viewed as the actions of the organization by the employees and they will engage in expected behavior as a reward for those actions of the supervisor were deemed to be favorable. In a high-quality exchange, involvement by both leaders and followers played a crucial aspect. As the consequences of this involvement from both sides, ideas can be generated freely since opportunities for information exchange has increased through high quality exchanges. However, some of the recent studies explain insignificant relation between both variables, leader-member exchange and innovative work behavior.

A study conducted by Taştan and Davoudi (2015) found that non-significant relation between leader-member exchange and innovative work behavior and the quality of leader-member exchange had no impact on employee innovative work behavior. In addition, Lee (2008) conducted a study on research and development professionals, he found that quality of leader-member exchange did not affect the employee innovative behavior. It stated that research and development professionals were more open to independent work and confident with their expertise, ability, and skills. Hence, high quality leader-member exchange does not help in innovativeness.

The empirical research on leader-member exchange and employee innovative work behavior is still emerging that supports a positive relationship between both leader member exchange and innovative work behavior (Atitumpong & Badir, 2018). With providing the critical analysis of literature that have shown inconsistent findings between leader-member exchange and innovative work behavior, and there is paucity of empirical research in the context of oil and gas sector in Algeria.

Based on the above discussions, the following hypothesis was proposed:

H1: There is a positive relationship between leader-member exchange and innovative work behavior

2.10.2 Relationships between Team Climate for Innovation and Innovative Work Behavior

Team climate for innovation is the proximal group either permanent or semi-permanent work team where team members are individually assigned tasks relating to their work jobs and tasks (Anderson & West, 1998). Innovation at work may be influenced by the work relationship, intrinsic work factors and climate of organization (West & Farr, 1989) and other important factors such as size of team, group members heterogeneity, vision of group and style of leadership differentiate between high- and low-level teams. Cohesiveness of group and participation in different tasks show innovative work behavior of individuals and groups (Anderson & West, 1994).

The question of what factors affect or support in predicting employee innovative work behavior is still an empirical issue. The paucity of empirical outcomes that are presented by individual and group level factors may enhance team innovation. Therefore, there are limited studies in literature on team climate for innovation and innovative work behavior on comparative contribution of group level climate for innovation (Burningham & West 1995). West and Wallace (1991) testified that team climate for innovation, asserting that team climate for innovation elements or constructs are important predictors in relative to individual level factors. Burningham and West (1995) reported, in greater detail of team level components analyzing the team innovation, that team climate for innovation elements; support for

innovation, communicated vision, and quality of task orientation consistently predict team innovative work behavior.

Bain et al. (2001) found that team climate has strongly associated with research teams' innovation relative to development teams, and team climate significantly promote innovation in knowledge teams. Mathisen, et al. (2004) confirmed the validation of team climate inventory and team level innovation, their findings accept the team climate inventory connection between customer satisfaction in fostering innovative work behavior.

In another study, Mathisen et al. (2006) found that team climate inventory supports a better measure of team level innovation as compared to individual level since the team climate for innovation model or team climate inventory is team level model. Ragazzoni et al. (2002) find consistent validity of team climate for innovation measure. However, the results attribute some lower scores in five scale dimensions of team climate inventory. The outcomes assert that individuals within work groups have low participation in decisions, scant participative safety, less acute way of task orientation and are less significant manners in vision and objectives.

Hülsheger et al. (2009) documented factors of creativity and innovation of team in the organization. Team level constructs of support of innovation, vision, and task orientation show significant positively impact on innovation. Moreover, Somech and Drach-Zahavy (2013) analyze the "team innovation" process in two-step dimension (idea generation and idea implementing). They envisaged that fostering creativity into implement required high level team climate for innovation and team climate for innovation is vital parameter of team values and norms for team innovation.

This study has investigated the “team climate for innovation” that foster innovative work behavior among team members and integrate the findings into a comprehensive model. Although the value of individual level structural antecedents in forecasting innovative work behavior and productive performance, team climate for innovation may be potential construct of employee innovative work behavior. The literature also has documented in stimulated innovative work behavior at individual and team level.

As a result, there is further research and practice required from academics and practitioners on the establishment of team climate for innovation for adaption and employees innovative work behavior in organizational structures. Thus, researchers prove theoretical and empirical evidence that team climate stimulates for innovation in higher degree innovation performance at the team level (Anderson et al., 2004; Hülshager et al., 2009). To better understanding the multilevel phenomenon of innovation climate, there is still need to explore the primarily issues; whether team climate-team level innovation motivates individual level innovativeness, and whether team members engaging in individual innovative behaviors also indulge team-level innovation (Anderson et al., 2004; Chen et al., 2013).

Bain et al. (2001) recommended that it is necessary to comprehend how team climate might change over time and the mutual impacts between team climate for innovation and actual innovation. However, the association between organizational team climate for innovation and innovative work behavior is still largely unexplored in the workplace setting of oil and gas sector. The prior approaches dearth an underlying conceptual model between team climate for innovation and innovative work behavior (Shanker et al., 2017).

In short, this study attempts to fill the underlying gap in investigating the relationship of team level innovation climate construct with employee's innovative work behavior. After reviewing past literature, it indicates that there is still lack of study that examine the relationship between team climate for innovation and innovative behavior in Algerian petroleum context. Based on the above discussions, the following hypothesis is proposed.

H2: There is a positive relationship between team climate for innovation and innovative work behavior

2.10.3 Relationships between Job Demands and Innovative Work Behavior

The organizational psychologists have long emphasized on job motivation by focusing on individual and organizational-level job factors (Hackman & Oldham, 1980). Csikszentmihalyi (1997) pioneered the principles of positive psychology which studied about creative aspects of individual and social behavior (Delle Fave et al., 2011). One of the attributes of positive psychology is optimal flow that focused on task and committed work behavior (Bakker & Demerouti, 2008; Fullagar & Kelloway, 2009). In this context, the greater degree of innovative work behavior takes place when employees have high involvement, share ideas, support, get expected resources and harmony among employees that mainly foster human innovation activities.

However, with growing economic uncertainty, many organizations face severe adverse effect in the situation of foreclosure and / or disband their activities and some struggling to sustain in the environment. This influenced the work

conditions and job environment in workplace. As a result, employees need to achieve higher work tasks (job demands) with low reward which in the employer perspective as a way of cutting extra cost or face the likelihood of job lost (James, 2014).

Reviewing the literature has showed that there are different outcomes presented between job demands and innovative work behavior. Initially, a study by Janssen (2000) identified that job demands were related to innovative work behavior and moderated by fairness perception. He found a positive connection between job demands and innovative work behavior with high level of fair effort-reward perception. Therefore, scholars (e.g., Bunce & West, 1994; Karasek, 1979; Theorell & Karasek, 1996) acknowledged that higher level of job demands stimulate arousal and motivate employees in workplace settings which help them in coping by adapting oneself to extremes demands or modifying the tasks according to the context. To be adaptive, one needs to equip with new skills, abilities, and knowledge to meet intensified job demands; in adapting workplace environment; and in modifying the nature of work/task, objectives, input process, job design/ techniques, resource allocations, facilitation conditions and interactive communication (Janssen, 2000).

In other study, De Spiegelaere et al. (2012) work on job demands-resources model (JDC) to identify the links between demands (time pressure and emotional pressure), resources, job engagement and innovative work behavior. Their study showed that there is a positive link between job demands and innovative work behavior when job control is less effective. In testifying the Karasek's model with active jobs-high demands and resources, Martín et al. (2007) explored a positive association between active jobs and individual innovation at workplace.

However, King et al. (2007) found contradictory and unclear findings, though job demands show weak connection to innovation climate in the organizational settings. Job demands work as stimulator and increase the state of arousal for individual workers and motivate them to modify their working patterns and behavioral adaption which aligned with such demands (Moya et al., 2005). Thus, employee innovativeness is a source of problem-solving strategy that make possible to adjust active jobs/ demands accordingly.

Furthermore, job demands such as long workhours may impact employee innovative work behavior in the workplace and work life balance. James (2011, 2014) argued that overloaded and extended duty hours are key constraints of individual innovation which resulted in stress burden, disturbing the communication and cooperation that curtailed employees' health and productive performance in IT industry. Both studies conclude that work life balance should be opted (i.e., time flexibility, less working days, division of job) to make employees healthy, work better, learn new skills, and ultimately equip with innovativeness. Dediu et al. (2018) explore the relationship between job demands and employee innovative work behavior. The findings showed that job demands has a positive relationship with idea generation rather idea implementation (to work speedily with strict schedules) and job design characteristics related to well-being can also foster employee innovation.

The previous literature with meta-analyses conjectured regarding jobs that are greater in demands and have low control and support for innovation, potentially elevate amount of stress and thus, deteriorate learning capability and well-being (Rodríguez et al, 2001; Van der Doef & Maes, 1999). There were studies that investigate the link between job demand-control (JDC) to innovation which predict innovation and well-being. For example, Daniels et al. (2011) suggested that the

relationship between JDC model and innovation needs further assessment to comprehend how supportive behavior motivate individual employees enhance their innovation. Scott and Bruce (1994) argued that problem solving is an important element to be innovative and with given support, employee implement their prevalent abilities as problem appears, comply with fully challenges, and develop better solution for difficult situations.

In other study, Amabile et al. (2002) reported that job demands create time pressure which resulted in differences in employee's performance. However, Kelly and Karau (1999) and Ellis (2006) found the opposite effect where time pressure enhances work groups and individual's efficiency as to meet deadlines, time limit drives individual to do urgent work tasks on priority basis. Ohly et al. (2006) found in their study that time constraint (pressure) in moderate amount instigate fully activation of creative capabilities in idea generation and implementation the whole innovative work behavior.

Amabile et al. (2002) suggested that efficiency may be achieved on the cost effectiveness and innovation creativity because of time constraints for analyzing information-process and novelty in ideas. In fact, employee's productivity increase under time pressure if more attention is given to the problem. In contrast, the conformity of deadlines (just on and few days after) can potentially reduce the degree of innovativeness (Breen, 2004). Another studies conducted by Hennessey and Amabile (2010) and Amabile et al. (2002) showed that innovativeness destructively got effected by time pressure which become hinderance of work outcomes, while its constraints on individual motivation levels, as a result of low productive performance, and innovative work behavior

In fact, time pressure as a potential job demands construct can stimulate or impede in both ways on employee innovative work behavior in particular organizational perspectives. To comprehend the true factors of job demands and its nature of relationship with innovative work behavior, Maqbool et al. (2019) put forward further research to be extended to acquire clear evidence of innovative work behavior rather directly predictors of time pressure. Specifically, perceived time constraints also contribute in resolving obstructions. By providing support for interactive communication and exchange information among subordinates/employees can enhance both idea creation and application. The lesser amount of time pressure and constrains excite individuals to apply their skills with adequate lapse time to provide innovative solutions to the confronted problems (Baer & Oldham, 2006; Roskes et al., 2013), idea to be flourished and reciprocated in exchanging information and thus, employees engross in innovative work behavior.

In short, the literature has shown how job demands affecting innovative work behavior. However, the relationship between the two is still not very clear and need further investigation. Besides, there is limited study that focus on petroleum sector especially in Algeria where further research is required to analyze the relationship with different constructs and varied settings and conditions for generalizing the evidence. Based on the above discussion, the following hypothesis is proposed:

H3: There is a positive relationship between job demands and innovative work behavior

2.10.4 Relationships between Leader-member Exchange and Learning Goal

Orientation

Effective leadership acts as a catalyst to foster employees' creative outcomes. Previous literature has identified various leadership theories that can foster innovation process, but less attention has been given to leader-member exchange and learning goal orientation (Atitumpong & Badir, 2018; Lan, et al., 2023; Schermuly et al., 2013). A learning goal orientation refers to an individual's dedication to, and concern for, developing one's ability, knowledge, skills, and competence (Atitumpong & Badir, 2018). Although the relationships between leader and subordinates, as well as employees' motivation to develop competency through learning goal orientation, matter in enhancing creative outcomes, the empirical examination of such effects is scant in the current literature.

The leadership quality concept based on leader-member exchange theory is incorporated into the framework to identify the key leadership aspects that affect the formation of employees' learning goal orientation (Atitumpong & Badir, 2018; Graen et al., 1990). Learning goal orientation can be considered as a resource differently valued by leaders. To improve the relationship quality between leaders and employees, management can arrange leadership training programs for supervisors so that they know how to respect the employees, give proper feedback, and identify the development potential and employee's need. Moreover, managers know the importance of employees' base on their learning orientation. Learning orientation is an eminent strategy to develop the full potential of employees so they can cope with globalization and the increased rate of competition and changing markets and technologies (Atitumpong & Badir, 2018). However, leaders should

understand that innovative work behavior cannot be engendered only through positive relationships but building employees' learning goal orientation plays an essential role.

Supervisors who are engaged in higher-quality leader-member exchange relationships will provide subordinates with added support, feedback, work-related resources, and opportunities, forming strong exchange relationships, enhancing members' performance (Kasemsap, 2013; Wayne et al., 1997). From the theoretical standpoint, and based on Social Exchange Theory, subordinates who are involved in higher-quality of leader-member exchange will enjoy a special advantageous relationship with their supervisors, operate within an environment of greater autonomy, and feel the obligation to return the benefits, by engaging in a learning goal orientation to develop their skills and improve their outcomes (Paparoidamis, 2005; Kasemsap, 2013). Lan et al. (2023) recommend for future scholars to extend the research findings in the relationship between learning goal orientation and leader-member exchange. Based on the above discussions, the study proposed the following hypothesis:

H4: There is a positive relationship between leader-member exchange and learning goal orientation

2.10.5 Relationships between Team Climate for Innovation and Learning Goal Orientation

Team climate for innovation is a group level innovation encompassing four team process that foster innovation at team and individual level which includes vision/objective, participative safety, support for innovation, and task orientation (West & Anderson, 1996). The team climate for innovation factors showed significant positively impact on innovation at workplace settings (Hülshager et al., 2009).

Goal orientation is a concept of adapting behavior and learning new skills to equip with change, creativity, and innovation (Alexander & Van Knippenberg, 2014). With learning opportunities, the purpose of individuals learning orientation is to enhance their capabilities while getting new skills/abilities and mastering new concepts in different conditions. In this situation, a well learned-oriented employee, will able to perform better, accept new challenges or execute difficult behaviours and learn from experience at workplace (Janssen & Van Yperen, 2004; Parker & Collins, 2010).

Therefore, in such a highly composition learning-goal orientation, members of the group will likely to develop a climate that centered to expand and enhance new set of skills and knowledge which effectively direct to encompasses complexity and unusual tasks. In such an “innovative climate” and relevant adaption of team, group members develop their competencies and mastery tasks (Lepine, 2005).

In contrast, the uncertain climate hinders members to share the ideas and to communicate their opinion which affect innovation and learning as well as team effective performance are become restrained (Edmondson, 2002). On the other hand,

team integration that involves sharing of ideas with group members, and psychological safety increase employee “learning orientation” and working performance (Kumako & Asumeng, 2013; Shah & Breazeal, 2010). Kumako and Asumeng (2013) assert that a non-threatening and favorable climate provides better way of engendering new idea rather than work conditions that impedes communication, succumbs employees’ views, stifles new ideas, suppresses, or rebukes and disregards. Alternatively, psychological safety climate instigates learning-oriented behavior among team members. Moreover, there is positive connection between team innovation climate and learning behavior (Carmeli & Gittell, 2009; Kumako & Asumeng, 2013).

Chi and Huang (2014) investigate the framework of transformational leadership and team performance in employing mediation effect of team learning orientation and group affective. The result indicates that a better learning goal orientation among teams leads to a positive response of affective group and team members developed new norms, skills, and competences in realizing difficult goals in favor of better performance.

Yang et al. (2016) studied team structure to identify the relationship between team learning goal orientation and innovative behavior on 334 employees in 75 teams of 13 Chinese companies. Team learning goal orientation is a collective construct and is defined as a shared understanding of the extent to which a team emphasizes learning (Gong et al., 2013). The findings showed that innovative behavior has positive relationship with high learning goal orientation and performance increase with incorporating team structure of innovative climate where its’ positively influence higher team competences.

Team learning goal orientation is a collective construct and is defined as a shared understanding of the extent to which a team emphasizes learning (Gong et al., 2013). Yang et al. (2016) found that innovative behavior has positive relationship with high learning goal orientation and performance increase with incorporating team structure of innovative climate and positively influence higher team competences.

Furthermore, organization's innovation is mainly structured with motivated teams (Barczak et al., 2009) and their management become essential for innovativeness (Hülshager et al., 2009). According to team innovation studies, West's (1990) model has been highly used which focus on team climates that fostering innovation process (Burningham & West, 1995; West & Anderson, 1996). Therefore, to explore the motivational factors, Alexander and Van Knippenberg (2014) suggested that team climate pursuit goals with motivational orientations that are captured by learning goal orientation (to enhance knowledge, develop capabilities and to avert failure). They suggest that team climate pursuit goals with motivational orientations that are captured by learning goal orientation (to enhance knowledge, develop capabilities and to avert failure).

Moreover, a learning orientation mostly related with enhancing team outcomes and high-level team climate impact learning with positive group task performance. The evidence implies that high team climate develops high learning orientation that encourage the acquiring of new skills and accomplishing difficult work tasks (goals). In fact, innovation is a goal-directed process (West, 2002) and, therefore, largely motivational (Locke & Latham, 1990). For innovation, the process of getting knowledge and learning skill mastery are vital elements for team performance, and team climate for innovation is a function of discovery and learning.

Accordingly, Tett and Burnett (2003) assert that goal orientation creates an individual's interpretation of team context climate that empowers individual members to adopt learning goal orientation. They further assert that goal orientation creates an individual's interpretation of team context. In other study on team empowerment, Liu, Wang and Yao (2019) found that individual goal orientation shapes the effects of team motivation climates and learning orientation moderates the relationship between team empowerment and creativity. Individual with high learning-goal orientation exhibit higher creativity.

Based on the above discussions, the study proposed the following hypothesis.

H5: There is a positive relationship between team climate for innovation and learning goal orientation

2.10.6 Relationship between Job Demands and Learning Goal Orientation

Job demands has been elaborated in the literature as working fast and hard, has huge work to do, and has too little time (Janssen, 2001). Job demands basically are stressors that involve in working conditions and organizational settings. High work pressure leads to high work-rate due to greater time pressure that concern with the amount of work that demand efforts and time that is essentially available. Therefore, job demands in the context of work and time pressure required individuals to accomplish huge work task with constraint of time (Witte et al., 2007).

With the reference of goal achievement model, goal orientation has mainly categorized into two aspects: a performance orientation and learning orientation. Performance orientation refers to someone accomplished the goals that are superior

over the other individuals. Therefore, learning orientation refers to the aims of enhancing capabilities, acquiring knowledge, finding new skills and provide the best designated efforts. Hence, there is an integrated relation that has been recognized between job demands and learning orientation in an organizational environment. As such, learning model theorizes the higher learning occurrence with more demanding nature of job task (Skule, 2004). This integrated and interactive relation develop learning prospects with high job demands.

Furthermore, in managing difficult job demands, employees develop learning goal-oriented behavior to acquire new things, knowledge and to develop mastery skills. In this way, individuals consider a positive perception regarding potentially high job demands to be good prospects for further improvement. Karasek's (1979) job demands control model is primarily explained organizational learning orientation which is widely used and well immersed in highlighting the value of job characteristics (e.g., job demands and job control) (Gijbels et al., 2010; Gijbels et al., 2012). Taris and Kompier (2004) reported that job demands are positively related with learning behavior with adequate level of opportunities provided for the challenging tasks.

Van Yperen and Janssen (2002) argue that weaker learning-oriented environment has a negative relation between job demand and employee job satisfaction. They found that high job demands develop learning adaptability among employees in managing difficult tasks while, working hard in limited timeframe for challenging and greater workloads. Kyndt et al. (2014) found that there was positive link between job demands and student learning behavior. However, the effect of job demands is quite restricted when come to student learning orientation behavior. Raemdonck et al. (2014) reported that both constructs, job demands, and self-

directed learning behavior strongly affects the employee learning orientation behavior at organizational settings.

Kyndt et al. (2014) were interested to investigate the value of learning goal orientation in the workplace. Thus, they conduct a study on 464 students in the teacher education sector. Using structural equation modelling (SEM), they found that there was positive link between job demands and student learning behavior. However, the effect of job demands is quite restricted when come to student learning orientation behavior.

Raemdonck et al. (2014) investigate the determinants of employee's workplace learning orientation using job demand control support and self-directed learning-oriented behavior on 830 employees. The study reported that both constructs, job demands, and self-directed learning behavior strongly affects the employee learning orientation behavior at organizational settings.

In conclusion, reviewing past studies have shown that there has been limited studies carried out to investigate the relationship between job demands and learning goal orientation in the Algerian context particularly in the petroleum sector. Based on the above discussions, the following hypothesis is proposed:

H6: There is a positive relationship between job demands and learning goal orientation

2.10.7 Relationship between Learning Goal Orientation and Innovative Work Behavior

In the past two decades, management scholars have applied the concept of goal orientation as an important motivational factor to explain employee job performance, contextual performance, leadership, well-being and innovation (Vandewalle et al., 2019).

The contextual aspect of learning goal orientation captures both facets - skill acquisition and intrinsic motivation. Learning goal orientation motivate individuals to make solicitation and consider feedback for skill enhancement and indulge in innovation process. Innovation process and creativity concern with the developing and orginating something noval ideas. To acomplish such innovations, new and requisite knowledge, skills and competence, realization and implementation of new ideas have yet to be learned (Janssen & Van Yperen, 2004). Thus, for individual to seek knowledge, skills and innovative behavior, they must go through some learning process. This learning process promote the related advancement of competence for mutual benefits of learning goal orientation.

Janssen and Van Yperen (2004) have conducted a study to identify the relationship between learning orientation and innovative work behavior using a sample of 170 individuals from Dutch company. They found a positive direct link between learning oriented employee and his/her innovative work behavior. Hirst et al. (2009) in their study found that learning goal orientation related to creativity component (idea generations) and innovativeness components (idea promotion realization and implementation) using leadership development program in mutlinational pharmaceutical firm of 198 R&D employees from three countries (US,

UK, and Sweden). Both studies acknowledge that learning orientation is a strong predictor of employees innovativeness, challenging goals/objectives tasks and learning competence encourage problem solution-oriented approach that leads to innovation.

Wang (2008) acknowledge that both innovativeness and learning orientation have a strong internal orientation toward business processes and firm performance. Using data from 213 individuals of senior management from the medium-to-large U.K firms, he studied on learning orientation behavior and found individuals within the firm are motivated to learn and more receptive to new information. Gong et al. (2009) also reported positive relationship between learning orientation and innovativeness when tested on 200 insurance sales agents and 111 immediate supervisors in Taiwanese insurance company. These results implied that likelihood of individual learning competence for creative idea generation and innovation are developed though passage of time for an individual to acquire new skills and capabilities.

In the literature and theory, learning is crucial for the development of innovative work behavior. Holman et al. (2012) investigate employee's learning strategies and how job design influence on individual innovative work behavior among 327 employees in UK manufacturing organization. Employing SEM method, learning strategies were found mediate the relationship between job design and innovative process. The findings suggest that active learning behavior improves individual employee engagement to foster innovative activities. In the context of learning and innovation, Lam (2005) emphasizes that innovation is source of learning and knowledge formation. For this purposes, new problems/challenges are identified and new knowledge is created to resolve that given issues. This learning

knowledge might encourage individuals to share ideas with others to promote innovation so that their suggested ideas are applied properly (Holman et al., 2012).

Sonnentag's (2003) studied whether higher work engagement fosters learning motivation that leads to proactive behavior and innovation. The study which involved 147 employees of German public service found that work engagement is an important construct that can affect employee's performance by motivating them to learn work related competences. They argued that employees who are having solid learning-oriented behavior, show personal and intrinsic motivations in their job and more likely this learning behavior may become stimulus for them to use innovation skills and apply innovative activities (Van Yeperen, 2003).

In other study, Atitumpong and Badir (2018) test the creative self-efficacy relation with leader-member exchange and learning goal orientation influence on innovative work behavior. Using Thai manufacturing industry with 337 individual employees and 137 supervisor managers, the study found that the input-output phenomenon between learning goal orientation and employees' innovation work behavior.

Maden (2015) has examined employee proactive innovative behavior and found that learning goal orientation may contextually perform as a mediation construct which may links human resource practices to proactive behaviors in the organizational settings. The study has been conducted on 240 employees in Turkish industries (Istanbul).

Montani et al. (2014) observed a direct relation between learning goal orientation and innovative work behavior when tested on twelve small Italian businesses involving 107 employees. Their findings were consistent with past studies related to innovation process that also emphasize a positive direct link

between both variables of learning goal orientation and employee's innovativeness (Janssen & Van Yperen, 2004; Lu, Lin & Leung, 2012).

The prior literature concludes that individual learning is an essential element for organization to get competitive edge in today's challenges conditions (Lee & Bruvold, 2003; Shoshani & Eldor, 2016). In this context, Atitumpong and Badir (2018) found that results linking the learning orientation with innovative work behavior have been inconclusive. Based on previous studies on the effect of learning goal orientation on employees' innovative work behavior, mix results have been reported between the two variables.

Hence, there is a need to further research involving different settings such as petroleum industry especially in Algeria to enhance the generality of the results in a north African oil-producing region. There is also a need for more investigations on the effect of learning goal orientation on innovative work behavior particularly in the Algeria context where studies are still limited. Based on the above discussion, the following hypothesis is proposed:

H7: There is a positive relationship between learning goal orientation and innovative work behavior

2.10.8 Learning Goal Orientation as Mediator

In the past, researchers have identified the mediating mechanisms to develop the interactional perspective of innovative work behavior (De Jong & Den Hartog, 2010). Previous literature has confirmed the mediating effect of behavioral constructs like creative self-efficacy, work engagement and leader-member exchange on

employee innovative work behavior. Thus, it is helpful to further investigate the mediating role of learning goal orientation on the relationship between leader-member exchange, team climate for innovation, job demands and employees' innovative work behavior.

Learning orientation is an internal mindset that motivates individual to develop his or her competence (Dweck, 1986, 2000; Dweck & Leggett, 1988; Vande Walle et al., 1999). Therefore, it stands out as an important internal drive for enactive mastery and prove to be an important factor for employee's innovative work behavior. Employees who adopt learning goal orientation are more likely to engage in and experiment with innovative work methods, eventually result in higher levels of innovation and performance (Janssen & Van Yperen, 2004).

Empirical evidence has revealed that a strong learning goal orientation can stimulate employees to engage in proactive work behaviors and innovativeness (Chughtai & Buckley, 2011). In many studies, learning goal orientation construct was found to positively related to innovative work behavior (Alegre & Chiva, 2013; Gong & Fan, 2006; Holman et al., 2012; Janssen & Van Yperen, 2004; Lu et al., 2012; Montani et al., 2017; Van Yeperen, 2003; Wang, 2008). Learning orientation was also found to indirectly enhance employee innovative behavior through the mediating role of work engagement (Chughtai & Buckley, 2011; Eldor, 2017; Tan, 2017; Tan et al., 2016). Maden (2015) in his writing argued that learning goal orientation may provide a proximal mediating variable that associates with some kind of higher level of HR practices to proactive behaviors. Ilström (2010) proposed a conceptual model that interpret and analyze how individual learning in the performance of a work process may be translated into organizational learning manifested as changes (innovativeness) in the explicit dimension of a work process.

Tan et al. (2016) examined the mediating role of learning goal orientation in the work engagement and innovative work behavior relationship among academicians in Malaysian public universities. The results indicate that learning goal orientation is significant mediator in explicating the work engagement and innovative work behavior.

Chughtai and Buckley (2011) investigate mediation effect of learning goal orientation using a sample of 168 research scientists in six science research centers (knowledge-intensive firms). The results indicate partial mediated role of learning orientation to influence the innovative work behavior with the positive effects of work engagement.

Holman et al. (2012) argued that learning is a route through which job design influences employee's innovation. Thus, the empirical examination of learning goal orientation effects in developing innovative work behavior is scant in the current literature (Atitumpong & Badir, 2018). As a result, employee learning goal orientation is chosen as one of the predictors of employees' innovative work behavior because it is related to actions intended to improve an individual's ability, knowledge, skills, and competence by obtaining and sharing information about customer needs, market changes and competitor actions, as well as development of new processes, to create new products and services.

Additionally, individuals with higher learning orientation of skills, knowledge, and competence are more likely to be innovative than those with no learning orientation. Even though there is empirical research on learning goal orientation in explaining the individual's behavior, there is a paucity of research being carried out to examine the learning goal orientation with the relationship between the predictors and innovative behavior outcome. Therefore, learning goal

orientation is adopted as a meaningful mediating construct to investigate whether this mediation effect has an important role in enhancing the positive influence of leader-member exchange, team climate for innovation and job demands on the relationship with employees' innovative work behavior.

As a result, it will be expected that employing learning goal orientation determinant as a mediating construct improves in theoretical conceptualization in the literature and propose some meaningful and empirical outcomes about the learning goal orientation as an appropriate mediation effect between the study's constructs and variables.

Based on the above discussion the following hypotheses are proposed:

H8: Learning goal orientation mediates the relationship between leader-member exchange and innovative work behavior

H9: Learning goal orientation mediates the relationship between job demands and innovative work behavior

H10: Learning goal orientation mediates the relationship between team climate for innovation and innovative work behavior

2.11 Conclusion

This chapter discusses the concept of innovation and innovative work behavior. The discussion continues with past empirical findings on factors that influence innovative work behavior such as the leader-member exchange, team climate for innovation, and job demands. It also presented learning goal orientation and its mediating potentiality on the relationship between leader-member exchange,

job demands, team climate for innovation and innovative work behavior. The chapter concludes with the underpinning theory, theoretical framework, and hypotheses development.



CHAPTER 3

METHOD

3.1 Introduction

Chapter three describes the method for the study. The chapter begins with the discussion on the research design, study population and sample design, survey materials used in this study, and procedure for data collection. The chapter concludes with the discussion on strategies for analyzing the data.

3.2 Research Design

Quantitative research design was used in this study. According to past researchers, quantitative research design enabled the researcher to test the relationship between the research variables (Kreuger & Neuman, 2006); can reliably determine if one idea or concept is better than the alternatives (Anderson et al., 2000); and is able to answer questions about relationships among measured variables with the purpose of explaining, predicting, and controlling phenomena (Leedy & Ormrod, 2005). Therefore, quantitative research design is more suitable for this study as it allows the testing of relationship between variables using statistical methods. This corresponds with the primary objective of this study, which is to test direct relationship between leader-member exchange, team climate for innovation, job demands, and innovative work behavior. Also, to examine the mediating effect of learning goal orientation on the relationship between leader-member exchange, team climate for innovation, job demands, and innovative work behavior. Secondly, it allows the analysis to be carried out on a large sample which can be generalized to

the whole population. Thirdly, permits the use of standard and formal sets of questionnaires to be distributed to every respondent.

In this study, the unit of analysis included the individual employees working in the production division in Sonatrach Corporation, and the primary data for this study were collected through the distribution of questionnaire. The respondents' perceptions about the leader-member exchange, team climate for innovation, job demands, and learning goal orientation became the basis for understanding their influence on innovative work behavior. Therefore, an individual was considered suitable to be selected as the unit of analysis to test all the variables shown in the theoretical framework. The study was conducted in a natural environment with minimal researcher interference. Following that, a cross-sectional design was used, where the data were collected at one point in time, given that the design was simple and inexpensive and allowed data collection in a relatively short period.

3.3 Population and Sampling

3.3.1 Study Population

Population of this study includes all employees who are currently working in the production division in Sonatrach Corporation. The production department of Sonatrach, where the main activity is the production of liquid and gaseous hydrocarbons, consists of nine regional directorates located in the middle and south regions. Based on the statistics given, the total number of employees at Sonatrach is 9706. Out of 9706, 4740 are working in the production divisions (Sonatrach Annual Report, 2017). Table 3.1 shows the distribution of total employees and number of employees working in the production divisions according to nine regional directorate

of production. The main reason for choosing only employees who are working in the production division as the respondents for this study is that they are directly involve with the production activities and operations which required them to be innovative in carry out their task to increase the production of oil and gas.

Table 3.1

Distribution of Employees and Management Staff, Engineers, and Technicians according to Region and Regional Directorate of Production

Region	Regional Directorate of Production	Total number of employees	Total number of employees in production divisions
Middle	Rhourde El Baguel	950	454
	Hassi R'Mel	1050	500
	Tin Foi Tabencourt	866	350
South	Hassi Messaoud	1250	700
	Howd Berkawi	1240	622
	Gasi Twile	940	415
	Ohant	1150	633
	Rhourde Nouss	920	406
	Ain Aminas	1340	660
Total		9706	4740

3.3.2 Sampling Size

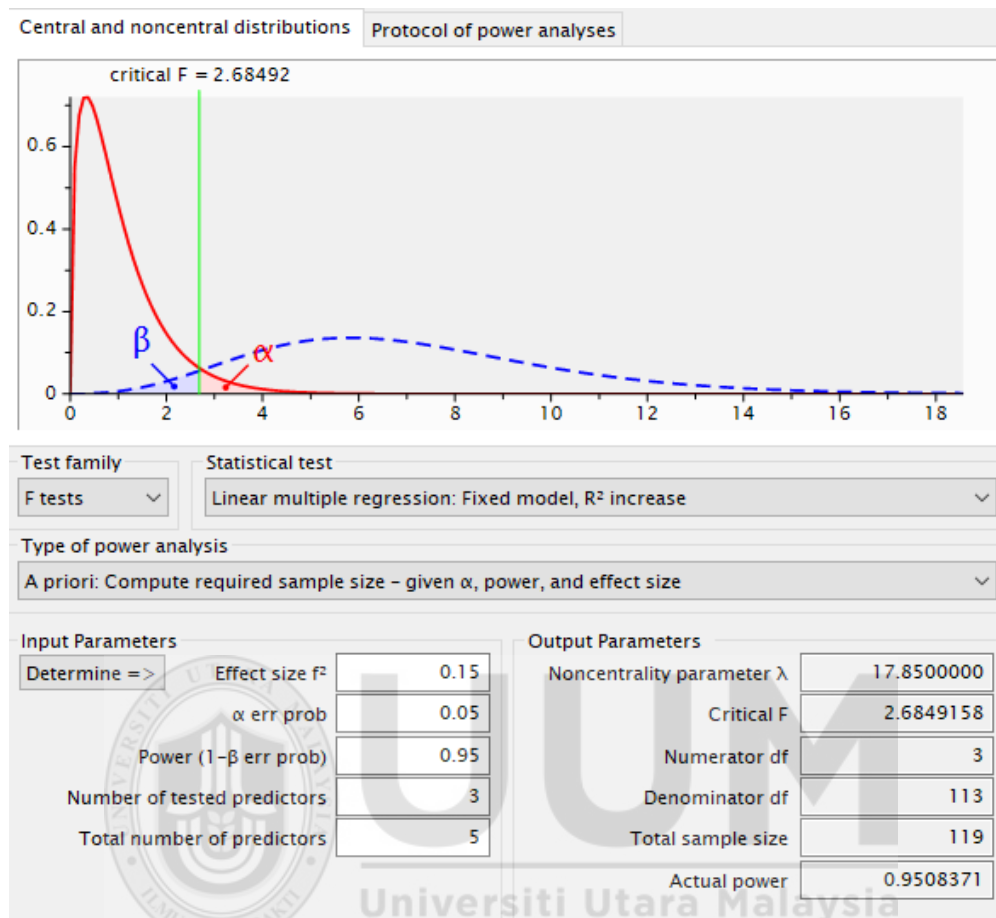
When the population size is too large, the process of collecting data from the entire population becomes unfeasible (Zikmund, 2003). Sampling procedure involved three steps: identification of the target population, estimating an appropriate

size of the sample and drawing the sample by following an appropriate sampling technique.

In this study, the determination of sample size was done by using two approaches. First, the sample size was determined based on Krejcie and Morgan's (1970) table. Based on the population of 4740 people, the sample size suggested by Krejcie and Morgan (1970) was 357, which indicated that 357 employees in the production division of Sonatrach Corporation were needed to represent the entire study population. This sample size was in line with Roscoe's rule of thumb, where a sample larger than 30 and less than 500 was appropriate for most research.

However, relying on the priori power analysis output per se would not be enough as the response rate in the Algeria is low (Djermani et al., 2016). Thus, relying on the response rate situation, this study also used G*Power 3.1 software to determine the minimum sample size (Mayr et al., 2007). This analysis is a statistical process for establishing an appropriate sample size for carrying out an empirical study (Bruin, 2006). Relying on parameters such as medium effect size f^2 (0.15), the significant level of an alpha (α err prob; 0.05, Power ($1-\beta$ err prob; 0.95) and three independent variables which are leader-member exchange, team climate for innovation and job demands it is found that a minimum of 119 sample size is needed for testing regression of the models (Cohen, 1992; Mayr et al., 2007). See Figure 3.1

Figure 3.1
The Priori Power Analysis Output



For this study, the researcher decided to distribute 357 questionnaires with the intention to receive a high response rate. As argued by Hair et al. (2006), large sample size is required to generalize the entire population. The low response rate has their own shortcomings as faced in case of Algerian research (Djermani et al., 2016). In this study, the researcher distributes the questionnaire on-site as the response rate through email may only generate from 25% to 30% without follow-up actions such as reminders (Yun & Trumbo, 2000). According to Fincham (2008), 60% response rate should be the aim for researchers. Therefore, to increase the response rate, an additional 50% was added to the sample target in this study to reach the possibility

ranging from 60% to 70% response rate, as justified by Fincham (2008) and Yun and Trumbo (2000). The calculation is as follows:

Sample size recommended by Krejcie and Morgan: 357

$$50\% \times 357 = 178.5$$

$$\text{Additional sample target: } 357 + 178.5 = 535.5$$

3.3.3 Sampling Technique

In this study, proportionate stratified sampling technique was utilized to determine the total number of questionnaires to be distributed. Sekaran and Bougie (2013) argued that a proportionate stratified sampling technique is suitable for a study that contains a stratum and a higher number of organizations to achieve more representations. This technique aims to ensure that each stratum is sufficiently represented (Ackoff, 1953). Therefore, it was adequate to be applied in this study whereby Sonatrach Corporation consists of nine divisions, while the stratified sampling could create an opportunity for each stratum to be represented.

In terms of selecting the respondents for this study, it was initially plan that the potential participant will be selected randomly from each division through the sampling frame. However, considering the difficulty in obtaining a proper sampling frame from each division under study, purposive sampling technique was employed to select the respondents from each division. Purposive sampling is a nonprobability sampling technique as the researcher uses different methods to locate all possible cases of a highly specific and difficult-to-reach the population (Neuman, 2014; Sekaran, 2003). This sampling technique may sometimes be the best sampling design choice, due to limited population that can supply the information needed (Sekaran,

2003). One of the main reasons for choosing this technique is that it is the most cost-effective and time-effective sampling methods available. In addition, it may be the appropriate available method in the case there is very limited number of primary data sources that can contribute to the study (Sekaran, 2003).

Table 3.2 presents the sample size for each division involved in this study. The stratum formula adopted from Hayes (2020) was applied to achieve the suggested 535 respondents for this study, which is as follows:

$$\text{Sample size / over sampling size for each regional directorate of production} = (\text{Sampling target / number of population}) \times \text{stratum size}$$

Table 3.2
Sample Size and Oversampling Size for the Nine Regional Directorate of Production

Regional Directorate of Production	Population / Stratum Size	Stratum Formula	Sample Size	Stratum Formula	Over Sampling Size
Rhourde El Baguel	454	(357/4740) *454	34	(535/4740) *454	51
Hassi R'Mel	500	(357/4740) *500	38	(535/4740) *500	56
Tin Foi Tabencourt	350	(357/4740) *350	26	(535/4740) *350	40
Hassi Messaoud	700	(357/4740) *700	53	(535/4740) *700	79
Howd Berkawi	622	(357/4740) *622	47	(535/4740) *622	70
Gasi Twile	415	(357/4740) *415	31	(535/4740) *415	47
Ohant	633	(357/4740) *633	48	(535/4740) *633	71

Regional Directorate of Production	Population / Stratum Size	Stratum Formula	Sample Size	Stratum Formula	Over Sampling Size
Rhourde Nouss	406	(357/4740) *406	30	(535/4740) *406	46
Ain Aminas	660	(357/4740) *660	50	(535/4740) *660	75
	4740		357		535

3.4 Operational Definitions and Measurements

The measurements adopted in this study and their operational definitions are discussed in several subsections. The discussion begins with the dependent variable and this followed by the independent variables, and mediating variable. The instruments developed in this study involve a rephrasing approach to certain items to suit the context of the study. The rephrasing of the items was conducted by referring to the expert's suggestions during the content validity process. Other studies have also conducted the same approach such as Rees et al. (2022), Schwab et al. (2021), Martel et al. (2020), and Grooten et al. (2018). Kishor et al. (2021) argued that rephrasing or rewording the items in the questionnaire development according to the experts will help in better response and understanding.

3.4.1 Innovative Work Behavior

Innovative work behavior is operationalized as the behavior of an individual that is intended to intentionally create, introduce, and apply new ideas, processes, or products (Janssen, 2000). In this study, innovative work behavior was measured

using 9-item developed by Janssen (2000). The 9 items represent three underlying dimensions of innovative work behavior: idea generation, idea promotion and idea realization. The instrument has been shown to have both reliable and valid for measuring innovative work behavior. Several studies have reported that the scale has adequate internal consistency (the Cronbach's Alpha ranging from .89 to .97) (Janssen, 2000; De Jong & Den Hartog, 2008). In this study, each of adopted questions asked how strongly the respondents agreed or disagreed with the innovative work behavior statements on a five-point scale whereby, 1=strongly disagree, and 5=strongly agree. For this measure, the higher the score, the higher the innovative work behavior. Table 3.3 shows the innovative work behavior items

Table 3.3
Innovative Work Behavior Items

Variable	Operational Definition	Items	Authors
Innovation work behavior	The behavior of an individual that is intended to intentionally create, introduce, and apply new ideas, processes, or products	IWB1 I create new ideas for difficult issues. IWB2 I search out new techniques, processes, working methods, techniques, and/or product ideas. IWB3 I generate original solutions for problems. IWB4 I mobilize support for innovative ideas IWB5 I make organizational members enthusiastic for innovative ideas. IWB6 I try to acquire approval for innovative ideas. IWB7 I transform innovative ideas into useful applications. IWB8 I introduce innovative ideas into the work environment in a systematic way. IWB9 I evaluate the utility (benefits) of innovative ideas.	Janssen (2000)

3.4.2 Leader-member Exchange

Leader-member exchange is the first independent variable in this study. It is operationalized as a unique exchange relationship that develops between a supervisor and their subordinate which will influence the subordinate's work behaviors and attitudes (Graen & Uhl-Bien, 1995). The study adopted 7-items developed by Wayne et al. (1997). Several studies have reported that the scale has adequate internal consistency (the Cronbach's Alpha ranging from .87 to .90) (Gupta, 2014; Javed et al., 2018; Agarwal et al., 2012).

In this study, each of adopted questions asked how strongly the respondents agreed or disagreed with the leader-member exchange statements on a five-point scale whereby, 1=strongly disagree, and 5=strongly agree. For this measure, the higher the score, the higher the exchange relationship develop between the supervisor and subordinate. Table 3.4 shows the leader-member exchange items.

Table 3.4
Leader-member Exchange Items

Variable	Operational Definition	Items	Authors
Leader-member Exchange	A unique exchange relationship that develops between a supervisor and their subordinate which will influence the subordinate's work behaviors and attitudes	LMX1 I usually know where I stand with my leader LMX2 My leader has enough confidence in me that he / she would defend and justify my decisions if I were not present to do so LMX3 My working relationship with my leader is effective LMX4 My leader understands my problems and needs LMX5 I can count on my leader to “bail me out” even at his / her own expenses, when I really need it LMX6 My leader recognizes my potential LMX7 Regardless of how much power my leader has built into his or her position; my leader would be personally inclined to use his / her power to help me solve problems in my work	Wayne et al. (1997)

3.4.3 Team Climate for Innovation

Team climate for innovation is the second independent variable and operationalized as the team innovation that is encouraged in a team climate where creative ideas are valued and supported, can be presented without fear of reprisal, and where team members are focused on achieving both organizational and task objectives (West, 1990). In this study, team climate for innovation is measured using a short version of team climate inventory developed by Kivimaki and Elovaino (1999). The original version of team climate inventory was developed by Anderson

and West and in 1994, they published 44 items with 4 dimensions. Though the instrument has demonstrated robust psychometric properties with acceptable levels of reliability and validity across occupational samples and countries, its' length has created problems for the researcher (Kivimaki & Elovaino, 1999). Apart from that, Chen and Hou (2016) and Somech and Drach-Zahavy (2013) found that the instrument provides a better fit when tested as uni-dimension instead of multi-dimensions. Thus, in this study, team climate for innovation is measured as a uni-dimension using a shorter version of team climate inventory.

The instrument has been shown to have both reliable and valid for measuring team climate for innovation. Several studies have reported that the scale has adequate internal consistency (the Cronbach's Alpha ranging from .87 to .95) (Dackert, 2010; Kivimaki & Elovaino, 1999). In this study, the 14 items were rephrased by changing the wording of the original version from a question format to a statement format to suit the agree-disagree response scale used for this study. Due to changes in the wording, the reliability of the new adapted scale in this will be compared to previous studies. The original and adapted versions of the 14 items are shown in Table 3.5.

In this study, each of adapted questions asked how strongly the respondents agreed or disagreed with the team climate statements on a five-point scale whereby, 1=strongly disagree, and 5=strongly agree. For this measure, the higher the score, the higher the team climate for innovation. Table 3.6 shows the team climate for innovation items.

Table 3.5*Original and Adapted Versions of Team Climate for Innovation Items*

Original version	Adapted version
How far are you in agreement with these objectives?	I agree with my team's objectives
To what extent do you think that your team's objectives are clearly understood by other members of the team?	I believed that my team's objectives are clearly understood by other members of the team
To what extent do you think your team's objectives can actually be achieved?	I believed that my team's objectives can actually be achieved
How worthwhile do you think these objectives are to the organization?	The team objectives are worthwhile to the organization
We have a 'we are in it together' attitude	We have a 'we are in it together' attitude
People keep each other informed about work-related issues in the team	People keep each other informed about work-related issues in the team
People feel understood and accepted each other	People feel understood and accepted each other
There are real attempts to share information throughout the team	There are real attempts to share information throughout the team
Are team members prepared to question the basis of what the team is doing?	Team members prepared to question the basis of what the team is doing
Does the team critically appraise potential weaknesses in what it is doing in order to achieve the best possible outcome?	The team critically appraise potential weaknesses in what it is doing in order to achieve the best possible outcome
Do members of the team build on each other's ideas in order to achieve the best possible outcome?	Members of the team build on each other's ideas in order to achieve the best possible outcome
People in this team are always searching for fresh, new ways of looking at problems	People in this team are always searching for fresh, new ways of looking at problems
In this team we take the time needed to develop new ideas	In this team we take the time needed to develop new ideas
People in the team co-operate in order to help develop and apply new ideas	People in the team co-operate in order to help develop and apply new ideas

Table 3.6
Team Climate for Innovation Items

Variable	Operational Definition	Items	Authors
Team climate for innovation	The team innovation is encouraged in a team climate where creative ideas are valued and supported, can be presented without fear of reprisal, and where team members are focused on achieving both organizational and task objectives	TCI1 I agree with my team's objectives TCI2 I believed that my team's objectives are clearly understood by other members of the team TCI3 I believed that my team's objectives can actually be achieved TCI4 The team objectives are worthwhile to the organization TCI5 We have a 'we are in it together' attitude TCI6 People keep each other informed about work-related issues in the team TCI7 People feel understood and accepted each other TCI8 There are real attempts to share information throughout the team TCI9 Team members prepared to question the basis of what the team is doing TCI10 The team critically appraise potential weaknesses in what it is doing in order to achieve the best possible outcome TCI11 Members of the team build on each other's ideas in order to achieve the best possible outcome TCI12 People in this team are always searching for fresh, new ways of looking at problems TCI13 In this team we take the time needed to develop new ideas TCI14 People in the team co-operate in order to help develop and apply new ideas	Kivimaki & Elovainio (1999)

3.4.4 Job Demands

Job demands are the third independent variable in this study. The present study concentrated on the quantitative job demands. It is operationalized as having to work fast and hard, having a great deal to do and having too little time (Janssen, 2001). In this study, job demands are measured by eight items of work speed and quantity developed by Van Veldhoven and Meijman (1994). This scale exclusively focuses on quantitative aspects of workload in terms of required speed and amount of work. The instrument has been shown to have both reliable and valid for measuring job demands. Several studies have reported that the scale has adequate internal consistency (the Cronbach's Alpha ranging from .79 to .88) (Janssen, 2000, 2001; Yperen & Snijders, 2000; Yperen & Janssen, 2002).

The 8 items were rephrased by changing the wording of the original version from a question format to a statement format to suit the agree-disagree response scale used for this study. Also, the response scale was changed from its original frequency scale to an agreement scale taking into consideration the difficulty for participants to remember the frequency of events that have happened. Due to changes in the wording and response scale, the reliability of the new adapted scale in this study will be compared to previous studies. The original and adapted version of the 8 items were shown in Table 3.7.

In this study, each of adapted questions asked how strongly the respondents agreed or disagreed with the job demands statements on a five-point scale whereby, 1=strongly disagree, and 5=strongly agree. For this measure, the higher the score, the higher the job demands. Table 3.8 shows the job demands items

Table 3.7*Original and Adapted Versions of Job Demands Items*

Original version	Adapted version
Do you have to work fast?	I have to work fast
Do you have too much work to do?	I have too much work to do
Do you have to work extra hard to finish a task?	I have to work extra hard to finish a task
Do you work under time pressure?	I work under time pressure
Can you do your work in comfort?	I can do my work in comfort (R)
Do you have to deal with a backlog at work?	I have to deal with a backlog at work
Do you have problems with the pace of work?	I have problems with the pace of work
Do you have problems with the workload?	I have problems with the workload

Table 3.8*Job Demands Items*

Variable	Operational Definition	Items	Authors
Job demands	Having to work fast and hard, having a great deal to do and having too little time	JD1 I have to work fast JD2 I have too much work to do JD3 I have to work extra hard to finish a task JD4 I work under time pressure JD5 I can do my work in comfort (R) JD6 I have to deal with a backlog at work JD7 I have problems with the pace of work JD8 I have problems with the workload	Van Veldhoven and Meijman (1994)

3.4.5 Learning Goal Orientation

Learning goal orientation is the mediating variable in this study. It is operationalized as a desire to develop the self by acquiring new skills, mastering new situations, and improving one's competence (Vandewalle, 1997). Learning goal orientation is measured by 5 items developed by Vandewalle (1997). The instrument has been shown to have both reliable and valid for measuring job demands. Several studies have reported that the scale has adequate internal consistency (the Cronbach's Alpha ranging from .84 to .91) (Aamir Ali & Finian, 2011; Scott et al., 1996; Veronica et al., 2003). The adapted version of learning goal orientation is shown in Table 3.9.

In this study, each of the adapted questions asked how strongly the respondents agreed or disagreed with the learning goal orientation statements on a five-point scale whereby, 1=strongly disagree, and 5=strongly agree. For this measure, the higher the score, the higher the learning goal orientation.

Table 3.9
Learning Goal Orientation Items

Variable	Operational Definition	Items	Authors
Learning goal orientation	A desire to develop the self by acquiring new skills, mastering new situations, and improving one's competence	LGO1 I am willing to select a challenging work assignment that I can learn a lot from	Vandewalle (1997)
		LGO2 I often look for opportunities to develop new skills and knowledge	
		LGO3 I enjoy challenging and difficult tasks at work where I'll learn new skills	
		LGO4 For me, development of my work ability is important enough to take risks	
		LGO5 I prefer to work in situations that require a high level of ability and talent	

3.5 Questionnaire Design

Acknowledging the cultural differences and since production division employees in Algeria often use Arabic in their work, all English materials prepared for the participants were provided in Arabic using back-to-back translation approach. In this study, two bilingual experts (English/Arabic) conducted the translation process. After the original English version was translated into Arabic by an expert, the Arabic version was translated back to English by the other expert. Each participant in this survey received 8-page questionnaire with a cover letter. Both versions of the questionnaire used in this study are shown in Appendix A and B.

Section 1 of the questionnaire asked participants about their innovative work behavior and there are nine items. Section 2 consists of 7 items of leader-member exchange items. Section 3 which consists of fourteen items asked participants about their team climate. In section 4, there are eleven items that asked participants about their job demand. Section 5 consists of five questions that asked about learning goal orientation. Section 6, the final section of the questionnaire, is on demographic variables. Demographic variables measured for descriptive and control purposes. These include gender, age, marital status, highest academic qualifications, number of years with the present organization and the position. This information is necessary to show that the sample is representative and to ensure that generalization to the wider population of organizations and employees can be made.

3.6 Data Collection Procedure

3.6.1 Pre-test

Before conducting the pilot study, the questionnaire was first validated by three academicians (research supervisors and international senior lecturer) from Universiti Utara Malaysia and three practitioners from production department at Sonatrach namely Benkaddour Zouheir, Head of Production Department; Ahmed Djeddi, HR Department and Abdlali Boukkza, Engineering Manager. Please refer to Appendix C.

Abbot and Bordens (2011) argued that the validity of instruments represents the degree to which it measures what it is supposed to measure. It also indicates the range in which the set of measures precisely clarifies the concept of research. This validity is ratified as the exactness of measures and the level to which the ratings appropriately explicate the concept of the specific construct (Zikmund et al., 2013). In line with the suggestions from previous literature works (Abbot & Bordens, 2011; Sekaran & Bougie, 2013), content (face) validity and construct validity are the two types of the most generally utilized and acknowledged validity test for social science study. Therefore, these two forms of validity tests were adequate for validating the instruments for this study.

Content validity test the suitability of the set of instruments to measure the scope of subject interest (Zikmund et al., 2013). It also clarifies the logic behind the scale it is intended to be measured (Zikmund, 2003). As highlighted by Sekaran and Bougie (2013), content validity estimates the relationship between the set of items and concepts through an expert's evaluation and pre-testing. The availability of satisfying content validity is imperative as it provides affirmation to the researcher

and the study in general. Besides, the participant may show an adverse attitude about the efficacy if they view the instruments as invalid (Lally & Testa, 2015).

Content validity involves a process of validation of the questionnaire that is commonly conducted by the experts (both the academics and practitioners) in the areas of interest or industry (Elangovan & Sundaravel, 2021). Yusoff (2019) suggested that the minimum acceptable expert number is two. Hence, this study fulfills the requirement whereby six experts were involved in content validity process for this study.

Yusoff (2019) further argued that the content validity can be conducted either face-to-face or non-face-to-face. An expert meeting can be organized in which the researcher managed the content validation process for the face-to-face approach. For the non-face-to-face approach, an online content validation form can be distributed to the expert by providing clear information and direction. Content validity that involved the practitioner experts was conducted online where questionnaire was email to them for validation. The detailed suggestions for content improvement from these experts are provided in Appendix D.

The second type of validity analysis for this study was the construct validity test, which could anticipate the attainable results from the use of a set of measures (Sekaran & Bougie, 2009). Construct validity involved two approaches, namely discriminant validity and convergent validity. Specifically, discriminant validity refers to the exclusivity of a measure for the constructs where the items should not be associated with the items from another construct (Zikmund et al., 2013). Thus, the measurement model was distinguished in this study to provide an understanding of the construct validity using Smart PLS-SEM. Average Variance Explained (AVE)

was applied to measure the convergent validity, while cross-loading and Fornell and Lacker's (1981) standard were employed for discriminant validity.

3.6.2 Pilot Test

According to Zikmund (1997), pilot study includes a small scale of the sample size to identify the weaknesses of the questions in term of the precision. It allowed the researchers to make further improvements on the questions before the distribution on the entire sample size is made. The pilot study is important for testing the reliability and validity of the measurement. It involves respondents from the same pool of the study from which the actual data will be collected, but they are not included in the actual field work (Bradburn et al., 2004).

In this study, the pilot study was conducted on 30 Sonatrach Corporation production division employees after the questionnaire have been validated by the expert in the field. The internal consistency reliabilities (Cronbach's Alpha) of the research measures from the pilot study are presented in Table 3.10. The results showed that all variables have satisfactory reliability values ranging from .79 to .94.

Table 3.10
Reliability for Pilot Study (n = 30)

Variable	Number of Items	Cronbach Alpha
Innovative Work Behavior	9	.89
Leader-member Exchange	7	.94
Team Climate for Innovation	14	.93
Job Demands	8	.79
Learning Goal Orientation	5	.85

3.6.3 Actual Data Collection Procedure

According to Frazer and Lawley (2000), questionnaires can be distributed through many ways such as self-administered, postal, telephone, internet, and the choice normally depend on the researcher's preference, cost, time constraints, potential response rate and many other important criteria to a study. For this study, the actual data collection began after the questionnaire have been validated by the expert and have been tested in a pilot study. Then, Sonatrach Corporation production division is personally contacted through telephone to explain about the study and to seek permission to conduct the study. Once permission is given, a date is fix at the respondent's convenience to distribute the questionnaire. The data were collected on-site either the researcher personally administer and collect the complete questionnaires or through the representative of Sonatrach Corporation production division. In other words, the data collection arrangement depends on the organization.

All respondents were informed and reminded that their participation was completely voluntary and their responses were treated with the strictest confidentiality. They were allowed to withdraw from the study at any time and not complete the questionnaire without prejudice. The completion and return of the questionnaire were taken as the indication that the participants agreed to participate. For this study, the data were collected from early February to July 2022.

3.7 Data Analysis Strategy

Statistical Packages for Social Sciences (SPSS) version 25 and SmartPLS 3.3.7 software were used in this study to analyze the theoretical model. PLS-SEM is regarded as the most appropriate technique for analyzing data in the present study for several reasons. First, PLS-SEM offers more appropriate and valid results, while other methods of analysis such as the software package employed for statistical analysis often led to a less clear conclusion and demand several analyses (Bollen, 1989; Chin et al., 2003). Tabachnick and Fidell (2007) argued that SEM is one of the most powerful statistical tools in behavioral and social sciences that have the capability of testing several relationships simultaneously.

Second, despite the number of research works on the relationship between innovative work behavior and its predictors, previous studies indicated that the mediating effect of learning goal orientation on the influence of leader-member exchange, team climate for innovation, and job demands was not explored. This study aims to predict the role of leader-member exchange, team climate for innovation, and job demands and learning goal orientation to encourage innovative work behavior among employees. This research was explorative and employed the social exchange theory. A path modelling approach was utilized due to the recommendation that PLS path modelling should be used if the research intends to predict or extend an existing theory (Hair et al., 2011; Henseler et al., 2009).

Third, compared to other path modelling software such as AMOS and Analysis of Moment Structures, the SmartPLS software is known for its friendly graphical user interface, which could assist users in creating a moderating impact for path models including interaction influences (Temme et al., 2006).

For this study, several steps are followed. First, the collected data was screened by employing SPSS to ensure that it was appropriate for further PLS analysis. Second, the measurement model was assessed, including assessment of the individual item reliability, internal consistency reliability, convergent validity, and discriminant validity (Hair et al., 2011; Henseler et al., 2009).

Third, the current study employed the standard bootstrapping procedure with 5,000 bootstrap samples, while 225 cases were applied to assess the structural model (Hair et al., 2011; Hair et al., 2012; Henseler et al., 2009). Specifically, this study employed PLS path modelling to calculate the significance of path coefficients, the amount of R-squared value, effect size, and predictive relevance of the model (Hair et al., 2014). Fourth, the supplementary PLS-SEM, which is a mediator analysis, was conducted after the analyses of the main PLS path model to determine the mediating effect.

3.8 Conclusion

This chapter has explained the research method and strategy for the study. It described how the sample of the organizations was obtained, the selection of the respondents, development of the questionnaire, the research materials, and the survey procedure. This chapter also briefly explains the adoption of several analyses such as structural model and measurement model to test the research hypotheses. Results for this study are reported in the next chapter, Chapter 4.

CHAPTER 4

FINDINGS

4.1 Introduction

Chapter 4 reports the findings of the study. Two stages of data analysis process were involved, namely preliminary data analysis and PLS-SEM analysis. Preliminary data analysis for this study included the missing value analysis, assessment of outliers, data distribution, response rate and descriptive statistics that include demographic profiles of the participants and the descriptive statistics of the variables.

PLS-SEM analysis involves a measurement model, structural model, and mediator analysis. The analysis of the measurement model is conducted through the analysis of the indicator loadings, composite reliability, convergent validity, and discriminant validity. Meanwhile, the analysis of the structural model includes the collinearity assessment, structural path coefficients, coefficients of determination (R^2), effect size (f^2), predictive relevance (Q^2), and effect size (q^2). The mediator analyses were conducted on the direct significant relationships. This chapter is concluded with a summary of hypotheses results.

4.2 Response Rate

The actual data collection for this study was conducted between February and July 2022. The questionnaire was collected on-site. At the end of the survey period, out of 535 questionnaires distributed, only 268 were received, yielding of 50.09% response rate. However, 43 cases were excluded due to major incomplete responses issue. Thus, only 225 cases are usable for further analysis. Table 4.1 presents the summary of the response rate.

Table 4.1
Response Rate

Total survey distributed	Total survey received	Percentage
535	268	50.09

4.3 Preliminary Data Analysis

Preliminary data analysis involved the analysis of missing data, outliers, straight-lining, and inconsistent answers (Hair et al., 2019). The assessment of the data distribution is not necessary considering that PLS is a non-parametric statistical process. However, it was recommended by Hair et al. (2019) to ensure that the data is not extremely non-normal distributed as the outcome may influence the bootstrapping procedure. Therefore, skewness and kurtosis distribution were conducted by implementing Mardia's coefficient procedure. The following subsection discusses each of the preliminary data analyses.

4.3.1 Missing Value Analysis

Missing data is a common issue that contributed by factors such as data entry errors or incomplete responses (Mohd Pauzi et al., 2021). The missing data could also be attributed to other reasons such as lengthy surveys that may affect the participants to accidentally miss a few items due to the presence of complicated or sensitive questions that could prevent the participants from answering (Field, 2018). The research should analyze the missing value based on the collected data. In this study, no missing values were found within the 225 data set.

4.3.2 Non-response Bias Analysis

This study employed the time-trend extrapolation method proposed by Armstrong and Overton (1977) to predict the probability of a non-response bias by referring to a comparison between early and late responses. They suggested that non-respondents and late respondents may have the same attributes. In addition, the length of the field period between early or late response might impact non-response bias (Struminskaya & Gummer, 2022). Based on Armstrong and Overton's (1977) suggestions, the current study separates the participants in two categories: 1) early participants (responded within 30 days) and 2) late respondents (responded after 30 days) (Vink & Boomsma, 2008). As shown in Table 4.2, 177 (78.67%) participants responded to survey within 30 days, while 48 (21.33%) participants responded after 30 days. This independent samplest-test was conducted to analyze any potential non-response bias in the main variables involves in this study (leader-member exchange, team climate for innovation, job demands, learning goal orientation and innovative work behavior).

Table 4.2*Results of Independent Samples T-test for Non-Response Bias*

Variables	Group	Total Respondent s (N)	Mean	SD	Levene's Test for Equality of Variances	
					F	Sig.
Innovative Work Behavior	Early Response	177	3.999	.623	2.586	.109
	Late Response	48	3.958	.772		
Leader- member Exchange	Early Response	177	3.297	1.080	.638	.425
	Late Response	48	3.188	1.003		
Team Climate for Innovation	Early Response	177	3.894	.656	.037	.848
	Late Response	48	3.766	.645		
Job Demands	Early Response	177	3.554	.694	.972	.325
	Late Response	48	3.620	.654		
Learning Goal Orientation	Early Response	177	4.288	.651	1.534	.217
	Late Response	48	4.108	.750		

The results of the independent samples T-test showed that the equal variance significance values for all variables were more than the .05 significance level of Levene's test for equality variances as proposed by Pallant (2011) and Field (2009). Thus, this analysis suggests that the assumption of equal variances between early and

late participants has not been violated. Hence, non-response bias was not a major concern in this study.

4.3.3 Assessment of Outliers

When there are extreme values for some factors that are significantly different from those of other respondents, outliers are thought to occur. Outliers may negatively affect statistical analysis results even though in PLS it is not an issue to have outliers in any dataset since it deals with abnormal dataset (Hair et al., 2011; Hair et al., 2014; Iacobucci & Churchill, 2004; Kumar et al., 2013). However, it is essential to inspect data for such elements and offer protection if they are existed. Nevertheless, since PLS works with anomalous datasets, having outliers in any dataset is not a problem (Hair et al., 2011).

The detection of outliers in the data set was conducted through the Mahalanobis distance (D^2) measure. According to Ghorbani (2019), Mahalanobis distance approach had the ability to detect multivariate outliers. According to Pallant (2011) standard rule of thumb for finding multivariate outliers, an element is considered an outlier if its D^2 value is higher than its Chi-square value. Based on the regression analysis from SPSS result, element of 24.07 highest Mahal distance was determined. These numbers have been contrasted with Chi-Square results at the significance levels of 0.001, $X^2(42, 0.001) = 76.08$. Using this criterion, none of the instances were found to be multivariate outliers.

4.3.4 Data Distribution

According to Gravetter and Wallnau (2007), a bell-shaped, symmetrical curve with the highest frequency of scores in the middle and lower frequencies near the extremities is considered typical. The majority of the statistical tests, in particular covariance-based structural equation modelling, demand that the data be regularly distributed (Chin et al., 2003; Hair et al., 2007). Prior to using inferential statistics, it is crucial to evaluate and be familiar with the distribution of the data, even though PLS SEM does not need that the data be normally distributed (Hair et al., 2007). According to Hair et al. (2014), the Skewness and Kurtosis tests should be used to determine whether a sample is normal. This statistical methodology was used in this study to evaluate the data distribution.

The best technique to characterize the distribution and forms of a dataset for a study that is considered normal is to utilize skewness and Kurtosis where the standard skewness is between ± 1.96 and ± 3.0 (Haniffa & Hudaib, 2004; Rahaman & Ali, 2006). Table 4.3 showed the fact that there are no severe instances of normalcy assumptions being violated in this study, which are all evenly and normally distributed.

Table 4.3
Output of Skewness and Kurtosis Calculation

	N	Mean	SD	Skewness		Kurtosis	
				Statistic	SE	Statistic	SE
IWB	225	3.991	0.655	-0.838	0.162	1.010	0.323
LMX	225	3.273	1.063	-0.437	0.162	-0.400	0.323
TCI	225	3.867	0.654	-0.258	0.162	-0.273	0.323
JD	225	3.567	0.684	-0.167	0.162	-0.565	0.323
LGO	225	4.249	0.675	-0.999	0.162	1.036	0.323
Valid N	225						

4.4 Descriptive Statistics

4.4.1 Demographic Characteristics of the Participants

Detailed descriptive statistics of the participants' demographic characteristics are presented in Table 4.4. It is noted that 77.3% of the 225 participants in this survey were males. Most of the participants (58.2%) were age between 31 to 40 years old. Out of 225 participants, 58.7% were married. In terms of academic qualification, most of the participants (32%) are holding a degree in engineering. Out of 225 participants, 36.9% work as technician. Most of the participants surveyed (41.3%) have been with the organization between 5 to 10 years.

Table 4.4*Demographic Characteristics of the Participants (n=225)*

Demographic	Categories	Frequency	Percentage (%)
Gender	Male	174	77.3
	Female	51	22.7
Age	20 – 30 years old	55	24.4
	31 – 40 years old	131	58.2
	41 – 50 years old	33	14.7
	51 years old and above	6	2.7
Marital Status	Single	79	55.1
	Married	132	58.7
	Divorced	14	6.5
Academic Qualification	Technical Certificate	36	16.0
	Degree	47	20.9
	Master	70	31.1
	Degree in Engineering	72	32.0
Position	Management staffs	67	29.8
	Engineer	75	33.3
	Technician	83	36.9
Number of years with present organization	Less than 5 years	64	28.4
	5 – 10 years	93	41.3
	11 – 15 years	46	20.4
	16 – 20 years	15	6.7
	21 – 25 years	5	2.2
	More than 26 years	2	0.9

4.4.2 Descriptive Analysis of Variables

A descriptive analysis that comprises the mean, and standard deviation was conducted to illustrate how each variable was perceived by the participants. Descriptive analysis is conducted to test the goodness of data and evaluate the data

(Sekaran & Bougie, 2019). As shown in Chapter 2, five constructs proposed in the theoretical framework for this study consisted of innovative work behavior, leader-member exchange, team climate for innovation, job demands and learning goal orientation. All constructs were measured using a five-point Likert scale that ranges from 1 (strongly disagree) to 5 (strongly agree).

It was discovered that four constructs shared no significant difference in average score, which ranged from 3.27 to 3.99. This result indicated that 225 respondents had a neutral opinion for innovative work behavior, leader-member exchange, team climate for innovation, and job demands constructs for this study. However, innovative work behavior, and team climate for innovation show a neutral value that is near to the value of 4 which indicates that the participants incline to agreeableness for those variables. Only learning goal orientation show high level of agreeableness. Table 4.5 presents detailed information on the tested constructs for this study.

Table 4.5
Descriptive Statistics of Constructs

Constructs	N	Number of items	Mean	Standard deviation
Innovative Work Behavior	225	9	3.99	0.655
Leader-member Exchange	225	7	3.27	1.063
Team Climate for Innovation	225	14	3.86	0.654
Job Demands	225	8	3.56	0.684
Learning Goal Orientation	225	5	4.24	0.675

4.5 Test of Multicollinearity

A correlation among several independent variables is known as multicollinearity (Hair et al., 2010). However, the ideal scenario is for there to be less link between the independent, and dependent variables and a stronger linear correlation between them. In multiple regression analysis, such as structural equation modelling (SEM), the independent variables are not anticipated to be linearly linked since the more linear multicollinearity there is, the more challenging it is to explain the relationships between the variables. As a result of the combined inter-predictor linkages, defining the impact of each predictor on the dependent variable becomes confusing (Field, 2009; Hair et al., 2010). Additionally, researchers contend that the presence of multicollinearity causes the path-coefficient level to decrease and the size of the standard error to increase (Field, 2009; Tabachnick & Fidell, 2007), which reduces the statistical impact (t-value). It is clear from the argument that multicollinearity exposes assumptions and results that are potentially false.

No inter-predictor correlation that is up to the threshold value was visible in the coefficient correlations in Table 4.6. The leader member exchange (LMX) and team climate for innovation (TCI) have the highest connection (0.539). Second, Hair et al. (2007) suggested to look at variance inflated factor and tolerance values (VIF). For tolerance values and VIF, the threshold values that indicated a substantial multicollinearity are between < 0.10 and > 10 (Amoroso & Cheney, 1991; Hair et al., 2010). The collinearity diagnostic was performed as per SPSS's instructions. Due to the lowest tolerance value of 0.691 and the maximum VIF value of 1.447, Table 4.7 showed that there is no sign of multicollinearity.

Table 4.6
Coefficient Correlations

Model		LGO	TCI	JD	LMX
Correlations	LGO	1.000			
	TCI	0.17	1.000		
	JD	0.339	0.126	1.000	
	LMX	0.080	0.539	0.019	1.000

* Dependent Variable: **IWB**.

Table 4.7
Collinearity Statistics

Model	Tolerance	VIF
LMX	0.698	1.433
TCI	0.691	1.447
JD	0.863	1.158
LGO	0.874	1.144

4.6 Common Method Variance Test

The variance that is connected to the measuring method rather than the construct being studied is known as common method variance (CMV) which is also known as mono-method bias (Podsakoff et al., 2003). In general, researchers argued that due to the problems involved, common method variance is significant to academics who use self-report surveys (Podsakoff et al., 2003; Spector, 2006). To

reduce the impact of CMV, the current study used numbers of procedure (MacKenzie & Podsakoff, 2012; Podsakoff et al., 2003; Podsakoff et al., 2012).

First, the questionnaire's items include no right or wrong answers, and participants were reassured that their responses were kept private throughout the research procedure to avoid anxiety. Second, to lessen technique biases in the current study, scale item improvements were also made. This was accomplished by avoiding ambiguous language in the questionnaire and using clear examples if such language was necessary. All the survey questions were prepared in a clear, precise, and short style to further enhance scale items. Data were gathered from respondents at various levels.

According to Avolio et al. (1991), the common method bias may be a real concern when attempting to examine the relationships between psychological or attitudinal data that has been collected from a single source. Since this study involved with data collection from different personnel levels over a variety of time periods, the study did not address the issue of scale reordering measure, and correlation technique. Harman's single factor only test few of the corrective measures that Podsakoff et al. (2003) suggested to see how much common method bias affected the data.

Similarly, Bagozzi et al. (1991) argued that a relatively high inter-construct correlation of 0.90 results in common method bias. Intriguingly, there is no indication that any two constructs are substantially connected in the correlation matrix in Appendix C. The construct with the strongest connection, 0.545, was the team climate for innovation and leader-member exchange. By loading all indicators as a single factor, SPSS 25 also performed the Harman's single-factor test.

Thus, a principal component factor analysis without rotation was performed on each measurement item. In this instance, common method bias becomes an issue if one factor clearly explained the most of the variance (Podsakoff & Organ, 1986). As a result, since every one of the recovered Leven factors has an eigenvalue greater than 1.0, there is no proof of technique bias. Additionally, the first factor only accounts for 26.772 percent of the total variance, which is less than 50%.

4.7 Assessment of PLS-SEM Path Model

Henseler and Sarstedt (2013) and Hair et al. (2014) argued that the goodness of fit (GoF) index is not suggested for model validation as it is unable to distinguish between valid and invalid models. However, Henseler et al. (2009) suggested that PLS path outcomes in this investigation can be assessed and reported using a two-step approach. Measurement model and structural model evaluation are among the steps involved (Hair et al., 2014; Henseler et al., 2009; Reinartz et al., 2009).

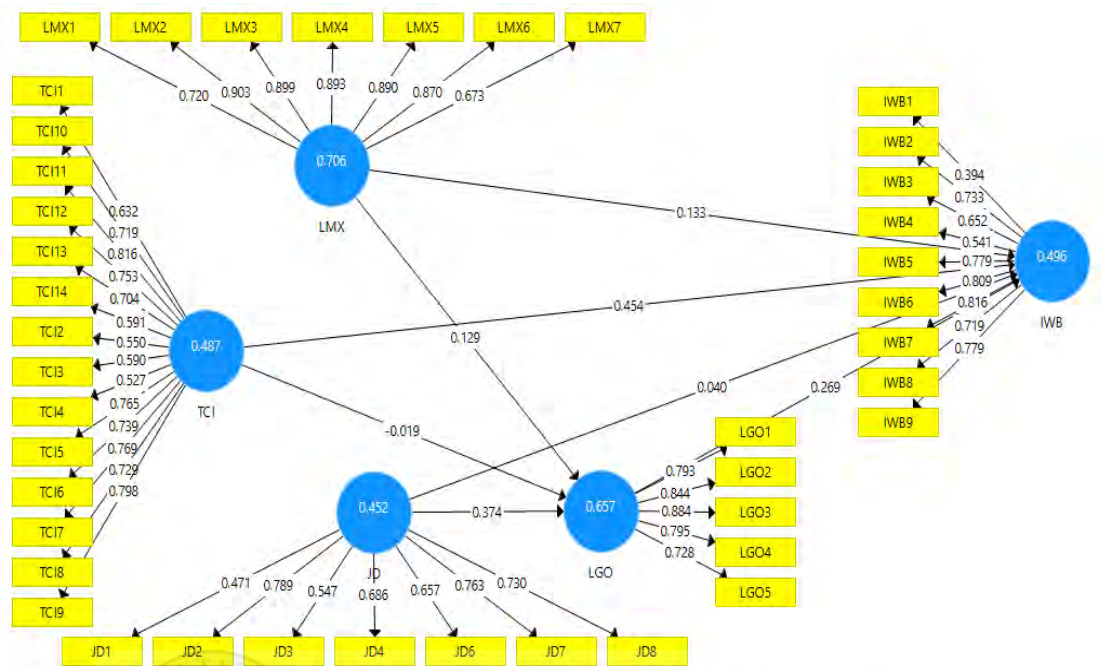
4.8 Assessment of Reflective Measurement Model

The arrows leading from the concept to the indicators in the current study demonstrate that each of the five constructs has a reflecting measurement model. Therefore, this study is centered on assessment of measurement models, which includes assessing the internal consistency reliability, convergent validity, and discriminant validity of individual items (Duarte & Raposo, 2010; Hair et al., 2014; Hair et al., 2011; Henseler et al., 2009).

4.8.1 Individual Item Reliability

As suggested by Ringle et al. (2015), the standard PLS algorithm was calculated using Smart PLS software 3.0 to determine the loading of the indicators, cross-loadings, composite reliability, and AVE (Figure 4.1). Examining the outside loadings of each measurement construct allowed for the determination of individual dependability (Hair et al., 2014; Hair et al., 2012). In accordance with the general guideline of preserving items with loadings between .40 and .70 (Hair et al., 2014), seven out of 43 items were eliminated due to loadings below 0.40. (Hulland, 1999). As shown in Table 4.8, all constructs' items were retained except for the first item of innovative work behavior (IWB1), three items of job demand (JD1, JD3, JD5) and three items of team climate for innovation (TCI2, TCI3, TCI4) which increase the composite reliability (CR) and the average variance extracted (AVE) of innovative work behavior, job demands, and team climate for innovation. Consequently, the model has 36 components with loadings ranging from 0.543 to 0.902. (Please refer to Table 4.8).

Figure 4.1
Initial Measurement Model (PLS Algorithm)



4.8.2 Internal Consistency Reliability

Starkweather (2012) recommends composite reliability as a more reliable analytical method of determining internal dependability for internal consistency of the measurement. Hair et al. (2011) proposed a composite reliability threshold criterion based on Nunnally and Bernstein (1994). They claimed that the composite reliability value should be higher than 0.70, notwithstanding their argument that values in the range of 0.60-0.70 can be acceptable in exploratory research. Additionally, it is stressed that internal consistency is thought to be relatively rare if the composite reliability value is lower than 0.60 (Hair et al., 2014). The results of this study's composite reliability calculations for each latent construct using the

smart-PLS standard algorithm show that all the constructs have met the 0.70 threshold value (Hair et al., 2011; Henseler et al., 2009). The composite reliability and Cronbach Alpha values were examined as shown in Table 4.8. Each latent construct's composite reliability coefficient which ranged from .858 to .943, was higher than .70 threshold for acceptability. Cronbach Alpha scores varied from .795 to .929.

As presented in Table 4.8, the independent variables for leader member exchange, team climate for innovation, and job demands have AVE values of 0.709, 0.511, and 0.502 respectively. While, the dependent variable innovative work behavior has an AVE value of 0.503. The mediating variable learning goal orientation has an AVE value of 0.667.

Table 4.8
Items Loadings, Composite Reliability and Average Variance Extracted

Constructs	Indicators	Cronbach's Alpha	Loadings	CR	AVE
Leader-member exchange	LMX1	0.929	0.719	0.943	0.706
	LMX2				
	LMX3		0.903		
	LMX4				
	LMX5		0.899		
	LMX6				
	LMX7		0.893		
Team climate for innovation		0.918	0.891	0.931	0.552
			0.870		
			0.674		
	TCI1		0.589		
	TCI2				
	TCI3		0.736		
	TCI4				
	TCI5		0.831		
	TCI6				
	TCI7		0.772		
	TCI8				
	TCI9		0.748		
	TCI10				
	TCI11				

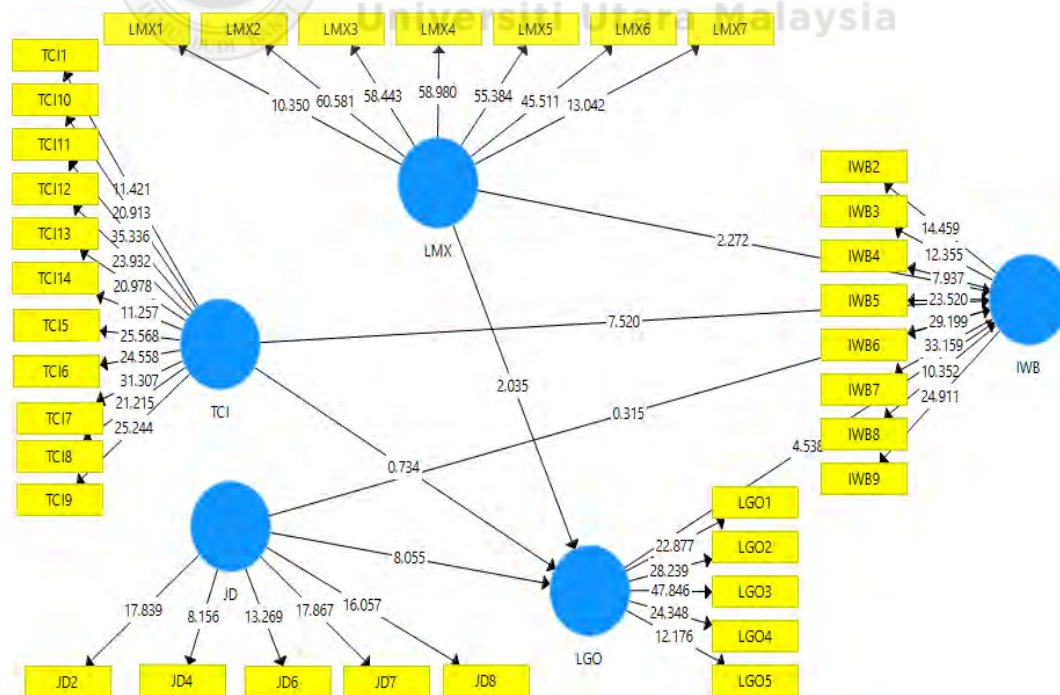
			0.637		
			0.761		
			0.741		
			0.795		
			0.727		
			0.799		
Job demands	JD2	0.795	0.773	0.858	0.548
	JD3				
	JD4		0.644		
	JD6				
	JD7		0.703		
			0.788		
			0.783		
Learning goal orientation	LGO1	0.869	0.790	0.905	0.657
	LGO2				
	LGO3		0.842		
	LGO4				
	LGO5		0.883		
			0.800		
			0.731		
Innovative work behavior	IWB2	0.877	0.739	0.903	0.542
	IWB3				
	IWB4		0.648		
	IWB5				
	IWB6		0.543		
	IWB7				
	IWB8		0.798		
	IWB9				
			0.826		
			0.818		
			0.700		
			0.772		

Note: AVE = Average Variance Extracted
CR = Composite Reliability

4.8.3 Convergent Validity

The extent to which items accurately reflect the latent constructs and frequently correspond with other measures of the same latent construct is known as convergent validity (Hair et al., 2006). As recommended by Fornell and Larcker, the AVE of each latent component was used in this study to examine convergent validity (1981). To achieve enough convergent validity, Chin (1998) recommended that the AVE of each latent component be in the range of .50 and higher. The AVE values shown in Table 4.8, which are higher than .50 are consistent with Chin (1998) and demonstrate a high degree of convergent validity. Thus, demonstrates adequate convergent validity.

Figure 4.2
Final Measurement Model (PLS Algorithm)



4.8.4 Discriminant Validity

The degree to which one latent construct differs from other latent constructs is known as discriminant validity (Duarte & Raposo, 2010). According to Fornell and Larcker (1981), who showed that the square root of average variance extracted for a specific construct should be larger than the correlation of the subject construct with any other construct in the model, discriminant validity was evaluated in this study. Venkatesh and Morris (2000) argued that each construct's square root of AVE value should be higher than the correlations between the various constructs. In order to obtain discriminant validity, it was necessary to compare the correlations of latent variables with the square root of the AVE, as shown in Table 4.9. (i.e., bold values). Table 4.9 shows that there is enough discriminant validity for all square roots of the AVE to be larger than the correlation among latent constructs (Fornell & Larcker, 1981).

Table 4.9
Fornell- Larcker Criteria Analysis for checking Discriminant Validity

Latent Variables	IWB	JD	LGO	LMX	TCI
IWB	0.736				
JD	0.193	0.740			
LGO	0.337	0.382	0.811		
LMX	0.432	0.037	0.133	0.840	
TCI	0.555	0.136	0.072	0.548	0.743

Note: The values in the diagonals cells (bold) are the square root of the AVE while the un-bolded values are the correlations

Innovative work behavior and team climate for innovation have the highest correlation within the construct (0.555), followed by leader member exchange and team climate for innovation (0.548), innovative work behavior and leader member exchange (0.432), and job demands and learning goal orientation (0.382).

On the other hand, by contrasting the indicator loadings with cross-loadings, discriminant validity can be found (Chin, 1998). It is advised that all indicator loadings be higher than cross-loadings to obtain adequate discriminant validity. Table 4.10 displays a comparison between the indicator loadings and other reflecting indicators, indicating sufficient discriminant validity for further investigation.

Table 4.10
Factor Loadings and Cross Loadings

Construct	Indicators	IWB	JD	LGO	LMX	TCI
IWB	IWB2	0.739	0.056	0.297	0.363	0.357
	IWB3	0.648	0.146	0.184	0.349	0.286
	IWB4	0.543	0.119	0.188	0.200	0.228
	IWB5	0.798	0.119	0.225	0.368	0.458
	IWB6	0.826	0.179	0.210	0.439	0.526
	IWB7	0.818	0.078	0.236	0.338	0.507
	IWB8	0.700	0.207	0.360	0.187	0.349
	IWB9	0.772	0.237	0.289	0.269	0.459
JD	JD2	0.076	0.773	0.378	0.110	0.145
	JD4	0.010	0.644	0.248	-0.121	0.015
	JD6	0.258	0.703	0.287	0.069	0.177
	JD7	0.171	0.788	0.226	-0.030	0.007
	JD8	0.159	0.783	0.237	0.037	0.102

LGO	LGO1	0.238	0.289	0.790	0.123	0.099
	LGO2	0.267	0.383	0.842	0.130	0.079
	LGO3	0.334	0.355	0.883	0.077	0.083
	LGO4	0.310	0.295	0.800	0.190	0.051
	LGO5	0.187	0.258	0.731	-0.014	-0.044
LMX	LMX1	0.256	-0.085	-0.107	0.719	0.341
	LMX2	0.348	0.034	0.145	0.903	0.477
	LMX3	0.371	-0.022	0.098	0.899	0.534
	LMX4	0.346	0.032	0.227	0.893	0.451
	LMX5	0.345	0.074	0.131	0.891	0.447
	LMX6	0.447	0.021	0.106	0.870	0.452
	LMX7	0.374	0.116	0.085	0.674	0.589
TCI	TCI1	0.491	0.107	0.254	0.332	0.589
	TCI10	0.324	0.274	0.042	0.306	0.736
	TCI11	0.326	0.129	-0.016	0.498	0.831
	TCI12	0.348	0.185	0.094	0.293	0.772
	TCI13	0.464	0.107	0.120	0.463	0.748
	TCI14	0.369	-0.012	0.055	0.343	0.637
	TCI15	0.516	0.025	-0.038	0.496	0.761
	TCI16	0.393	0.083	0.080	0.213	0.741
	TCI17	0.397	0.064	0.016	0.387	0.795
	TCI18	0.373	0.155	0.012	0.427	0.727
	TCI19	0.365	0.028	-0.120	0.442	0.799

4.9 Assessment of the Structural Model

Sequential studies in Smart PLS3 were only permitted if the measurement model had been successfully evaluated in addition to the structural model. This section will discuss on the techniques, steps, and standards that the study used to evaluate the structural model.

First, based on the values of the path coefficients, statistical t-values, and standard errors, the relevance and importance of the structural model are evaluated. Additionally, the hypotheses were assessed and tested using criteria from Hair et al. (2011) and Chin (1998), which was accomplished by bootstrapping in Smart PLS3 for effect and mediating. In a similar manner, coefficient of determination (R^2) is also used, centered on criteria advised by earlier researchers (Chin, 1998; Cohen, 1988) to evaluate the variance in the outcome variable that has been reduced by the predictor variables. The effect size (f^2) of each external variable and the mediator is also evaluated by applying Cohen (1988) criterion. Lastly, the blindfolding technique is used to control the predictive capability (Q^2) and effect size (q^2) using benchmarks provided by Chin (1998), Hair et al. (2011) and Henseler et al. (2009).

4.9.1 Results of Direct Hypotheses Testing

As discussed in Chapter 2, there are ten hypotheses in this study—seven direct effects and three mediating hypotheses. P and T values are used to determine whether the paths are significant. It is because statistical t-values that are significantly different from 0 are almost always considered to be statistically significant though this depends largely on the degree of freedom, confidence interval, and directionality of the hypothesis (Hair et al., 2014). The PLS bootstrapping resampling was performed using the 5000 bootstrapping samples recommended by Hair et al. (2011) to acquire the statistical t-values and the standard error. The bootstrapping sample is thought to be sufficient.

The measurement model assessment process also utilized the PLS standard algorithm to calculate the path coefficients and determine if the association was

positive or negative. The outcomes of the direct hypothesis testing are presented in Table 4.11. The results showed that leader-member exchange have significant effect on innovative work behavior ($\beta=0.146$, $t=2.272$, $p<0.01$) and the results support hypothesis (H1). Similarly, the team climate for innovation was also found to have significant effect on innovative work behavior ($\beta=-0.456$, $t=7.520$, $p<0.01$). Thus, the hypothesis (H2) was supported. However, job demands were found not have significant effect on innovative work behavior ($\beta=0.021$, $t=0.315$, $p=0.346$). Therefore, hypothesis (H3) was not supported.

As for leader-member exchange and job demands, both have significant effect on learning goal orientation ($\beta=0.154$, $t=2.035$, $p<0.1$) and ($\beta=0.393$, $t=8.055$, $p<0.01$) respectively. Hence, hypotheses (H4) and (H6) were supported. When team climate for innovation was tested against learning goal orientation, the results showed no significant effect ($\beta=-0.059$, $t=0.734$, $p=0.232$). Thus, hypothesis (H5) was not supported. The learning goal orientation was found to have a significant effect on innovative work behavior ($\beta=-0.219$, $t=3.539$, $p<0.01$) and this result support hypothesis (H7).

Table 4.11
Results of Direct Hypotheses

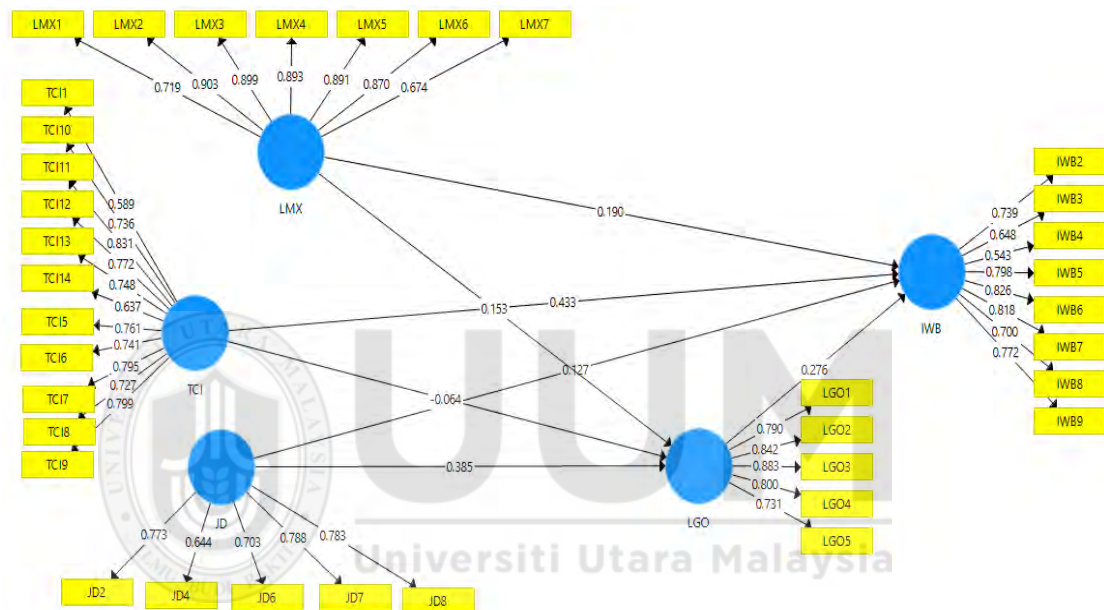
Hypotheses	Relationship	Std. Beta	Std. error	T-Value	P-Value	Decision
H1	LMX -> IWB	0.146	0.065	2.272	0.012***	Supported
H2	TCI -> IWB	0.456	0.060	7.520	0.000***	Supported
H3	JD ->IWB	0.021	0.067	0.315	0.346	Not Supported
H4	LMX ->LGO	0.154	0.075	2.035	0.021**	Supported
H5	TCI ->LGO	-0.059	0.087	0.734	0.232	Not

						Supported
H6	JD -> LGO	0.393	0.048	8.055	0.000***	Supported
H7	LGO -> IWB	0.278	0.061	4.538	0.000***	Supported

*Note: Values are calculated using PLS bootstrapping routine with 225 cases and 5000 samples (one tailed). ***indicates the item is significant at $p<0.01$ level, ** indicates the item is significant at $p<0.05$ level, and * indicates the item is significant at $p<0.1$ level.*

Figure 4.3

Direct Effect Model (Bootstrapping)

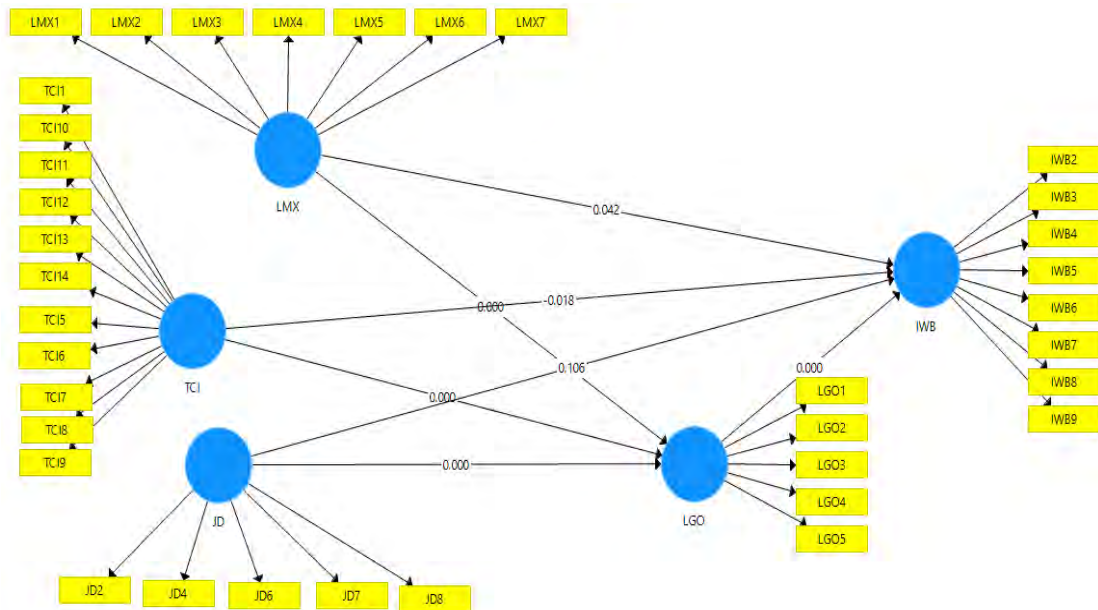


4.9.2 Results of Mediating Hypotheses

In this study, learning goal orientation is the mediating factor that will test the mediating effect on the relationship between leader-member exchange, team climate for innovation, and job demands and innovative work behavior.

Figure 4.4

The Mediating Role of Learning Goal Orientation



Smart PLS 3.0 was employed to examine the mediating effect of learning goal orientation. As shown in Table 4.12, learning goal orientation mediated the relationship between leader-member exchange and innovative work behavior ($\beta=0.043$, $t=1.805$, $p<0.05$). Therefore, hypothesis (H8) was supported.

Similarly, learning goal orientation also mediated the relationship between job demands and innovative work behavior ($\beta=0.110$, $t=3.799$, $p<0.01$). Thus, hypothesis (H9) was supported. However, learning goal orientation did not mediate the relationship between team climate for innovation and innovative work behavior ($\beta=-0.017$, $t=0.705$, $p=0.241$). Therefore, hypothesis (H10) was not supported.

Table 4.12*Testing the Mediation Effect of Learning Goal Orientation*

Hypothesis	Mediation Path	Std. Beta	Std Error	T-Value	P-Value	Confidence Intervals		Decision
						Lower Limit (5%)	Upper Limit (95%)	
H8	LMX>LGO>IWB	0.043	0.024	1.805	0.036	0.007	0.083	Supported
H9	JD>LGO>IWB	0.110	0.028	3.799	0.000	0.066	0.158	Supported
H10	TCI>LGO>IWB	-0.017	0.025	0.705	0.241	-0.060	0.023	Not Supported

Note: Values are calculated using PLS bootstrapping routine with 225 cases and 5000 samples (one tailed). ***indicates the item is significant at $p<0.01$ level, and * indicates the item is significant at $p<0.1$ level. The hypotheses are supported based on t-statistic and p-value distributed at ($t=1.282$, $p<0.1$), ($t=1.645$, $p<0.05$) and ($t=2.326$, $p<0.01$) in accordance to the table of Ott and Micheal (2010, p. 1172).

The variation accounted for value (VAF) was calculated to evaluate how much innovative work behavior is indirectly explained by leader-member exchange, team climate for innovation, and job demands through learning goal orientation. The study utilized the variance-accounted-for value formula (VAF) proposed by Hair Jr et al. (2014, p.225):

$$VAF = a*b / a*b+c$$

VAF < 20% (no mediation), VAF => 20% and = 80% (partial mediation), and VAF > 80% (full mediation),

In this study, the VAF for LMX>LGO>IWB is 22% which indicates partial mediation, VAF for JD>LGO>IWB is 83.46%, implying full mediation, and VAF for TCI>LGO>IWB is -5.23% which is no mediation.

4.9.3 Assessment of Coefficient of Determination (R^2)

The variance in the endogenous latent variable that is explained by the exogenous latent variables is known as the coefficient of determination (R^2) (Henseler et al., 2009). R square measures how much of an endogenous variable's variance can be accounted by its external counterpart. It represents the quality of the variables used in the model (Hair et al., 2010). Therefore, is a different way to evaluate the quality of a structural model in a variance-based structural equation model, much as goodness-of-fit is in a covariance-based model (Götz et al., 2010). However, there are other standards that can be utilized as a guide when determining the R square level. The R-squared value of 0.60 can be regarded as large, 0.33 as moderate, and 0.19 as weak in PLS-SEM (Chin, 1998). Table 4.13 reports the R-squared value for the current study.

Table 4.13
Variance Explained in the Endogenous Latent Variable (R-Square)

Variable	R2	Result
IWB	0.411	Substantial

The result in Table 4.13 indicates that the coefficient of determination R^2 value of this study is substantial at 0.411 according to Chin (1998), Cohen (1988), and Falk and Miller (1992). This means the exogenous latent variables (i.e., leader-

member exchange, job demands, team climate for innovation and learning goal orientation) explained 41.1% of the variance in innovative work behavior in the petroleum sector.

4.9.4 Effect Size (f^2)

Effect size describes the proportional impact of a given independent variable on a dependent variable, which is discernible from variations in R-squared value (Chin, 1998). It is calculated as an increase in the R-squared of the latent variable relative to the proportional variable of unexplained variance along the connected path (Chin, 1998). Thus, the formula proposed by Cohen (1988), Selya et al. (2012), and Wilson et al. (2007) was adopted to explain effective size.

$$\text{Effect Size } (f^2) = (R^2 \text{ included} - R^2 \text{ excluded}) / (1 - R^2 \text{ included})$$

According to the formula, f^2 values of 0.02 are small, 0.15 are moderate, and 0.35 are strong. Effect size for the latent variables in the structural model are shown in Table 4.14.

Table 4.14
Effect Size (f^2)

Constructs	f^2	Effect Size
Leader-member Exchange	0.025	Small
Team Climate for Innovation	0.237	Moderate
Job Demands	0.001	None
Learning Goal Orientation	0.109	Small

4.9.5 Predictive Relevance (Q^2)

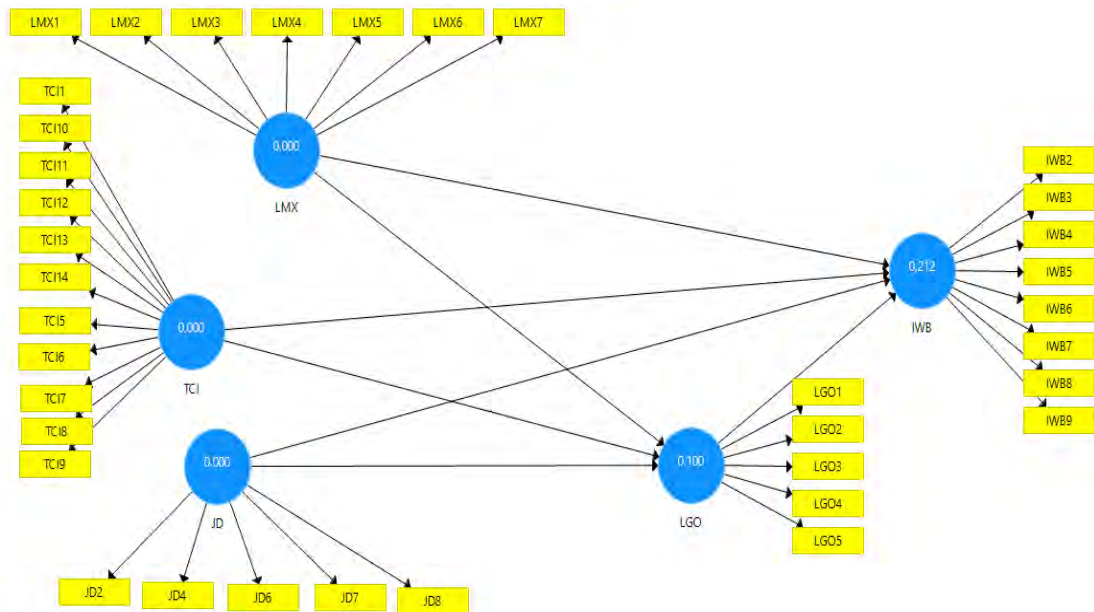
In addition to analyzing the extent to which the model explained (R^2) variance in the dependent variable as a need for predictive accuracy (Hair Jr et al., 2014), the used of Stone- Q^2 Geisser is suggested to assess a model's predictive relevance (Geisser, 1974; Stone, 1974). In Smart-PLS, re-estimation of the model is possible since every data point is ignored during a blindfolding phase (Chin, 1998; Henseler et al., 2009).

This method is only performed for the model's endogenous reflective latent variable, and if the Q^2 value for the endogenous latent construct is greater than 0, it is considered to have a predictive importance (Hair Jr et al., 2014). The cross-validated redundancy method was utilized to estimate the Q^2 value while using blindfolding (refer Figure 4.5). The cross-validated redundancy for innovative work behavior, and learning goal orientation is 0.212 and 0.100 respectively (refer Table 4.15). Since the value of the cross-validated redundancy was more than zero, there is strong evidence of robust predictive significance.

Table 4.15
Predictive Relevance (Q^2)

Total	SSO	SSE	1-SSE/SSO
IWB	1800.000	1417.798	0.212
LGO	1075.000	1012.577	0.100

Figure 4.5
PLS Blindfolding Procedure



4.10 The Goodness of Fit of the Whole Model

The goodness of fit in PLS Structural Equation Modeling is solely measured by one metric. According to Tenenhaus and Vinzi (2005), the geometric mean of the average communality and average R square for the endogenous constructs is the global fit measure (GoF) for PLS. Thus, the variance retrieved by the inner and outer models is taken into consideration by the GoF measure. Based on the standards established by Wetzels, Odekerken-Schröder, and Van Oppen (2009) (small =0.1, medium =0.25, large =0.36), a comparison was made. The findings showed a large goodness of fit which indicate a sufficient PLS model validity.

4.11 Summary of Hypotheses Testing

After conducting the structural model procedures, the evaluation of path coefficient and t-value was applied to test the hypotheses for this study. The supported hypotheses were tested according to the significance level of .05, which led to significant directions with the coefficient values (β) that ranged from -.129 to .298. Out of 10 hypotheses, seven hypotheses were supported. Table 4.16 presents the summary of hypotheses tested in this study.

Table 4.16
Summary of Hypotheses Testing

Hypothesis	Statement	Results
H1	There is a positive relationship between leader-member exchange and innovative work behavior	Supported
H2	There is a positive relationship between team climate for innovation and innovative work behavior	Supported
H3	There is a positive relationship between job demands and innovative work behavior	Not supported
H4	There is a positive relationship between leader-member exchange and learning goal orientation	Supported
H5	There is a positive relationship between team climate for innovation and learning goal orientation	Not supported
H6	There is a positive relationship between job demands and learning goal orientation	Supported
H7	There is a positive relationship between learning goal orientation and innovative work behavior.	Supported
H8	Learning goal orientation mediates the relationship between leader-member exchange and innovative work behavior	Supported
H9	Learning goal orientation mediates the relationship between job demands and innovative work behavior	Supported
H10	Learning goal orientation mediates the relationship between team climate for innovation and innovative work behavior	Not supported

4.12 Conclusion

This chapter described the demographic characteristics of the 225 participants and the results of PLS-SEM analyses. The results indicate that leader-member exchange and team climate for innovation had a significant relationship with innovative work behavior. Also, leader-member exchange, and job demands had a significant relationship with learning goal orientation. While, learning goal orientation was found related to innovative work behavior. In terms of mediating effect, the study found that learning goal orientation only mediate the relationship between leader-member exchange and innovative behavior and between team climate for innovation and innovative behavior. The research implications, limitations, and direction for future research will be discussed in Chapter 5.



CHAPTER 5

DISCUSSION

5.1 Introduction

In this chapter, the summary of the research findings is presented. This is followed by the discussions on the research findings, research implications, which include theoretical and practical implications. The chapter ends with a discussion on the limitations and directions for future research.

5.2 Summary of the Research

Following the review of the research problems, this study was conducted to examine the innovative work behavior among production department employees in Sonatrach Corporation, Algeria. The main objective of the present study is to examine the direct effect of leader-member exchange, team climate for innovation and job demands on innovative work behavior. Furthermore, the study investigates the mediating effect of learning goal orientation on the relationship between leader-member exchange, team climate for innovation and job demands and innovative work behavior.

The theoretical framework for this study was developed based on the Social Exchange Theory that involves the leader-member exchange, team climate for innovation, job demands and learning goal orientation as the mediator and reviewing past empirical studies.

The study was cross-sectional involving on-site survey method for data collection. Proportionate stratified sampling technique was utilized to determine the total number of questionnaires to be distributed to each of the nine divisions in Sonatrach Corporation. Considering the difficulty in obtaining a proper sampling frame from each division under study, purposive sampling technique was employed to select the respondents from each division. A total of 535 questionnaires were distributed and 268 were received, yielding of 50.09% response rate. However, 43 cases were excluded due to major incomplete responses issue. Thus, only 225 cases are usable for further analysis.

SmartPLS 3.3.7 software was used to run the measurement and structural model. Specifically, all the constructs fulfilled the requirement with a value above .70 and were reported for composite reliability. Moreover, the convergent validity in this study could be achieved without any collinearity issues among the constructs ($VIF < 5.0$). Following that, the analysis through the structural model was determined by analyzing R^2 values. The significance of the path coefficient was measured using the algorithm of bootstrapping in SmartPLS. Following that, 5,000 bootstrapped samples were generated. The t and p values were referred to determine the significance of path coefficients (β) at a 5% error probability. This study proposed 10 hypotheses, which comprised seven direct relationships and three indirect relationships (mediating test). Seven hypotheses were supported and three hypotheses were not supported.

5.3 Discussions of Findings

This study primarily aims to examine the factors that might influence innovative work behavior among production department employees in the context of Petroleum industry in Algeria. Specifically, four research questions and four objectives were presented in this study. Each relation of the tested constructs will be discussed in the next subsections.

5.3.1 Relationships between Leader-member Exchange and Innovative Work Behavior

As predicted, leader-member exchange factor was found to have a direct effect on the employees' innovative work behavior. The results provide support for previous studies (Atitumpong & Badir, 2018; Saeed et al., 2019; Sekerdil & Gunes, 2022; Zuberi & Khattak, 2021) and the SET theory assumption. In the social exchange between supervisors and employees, leader-member exchange connections are exclusive. As these social exchanges increase, the leader-member exchange relationship will improve, resulting in the establishment of a high-quality leader-member exchange (Blau, 1964).

The findings indicate that when a quality of exchange relationship developed between leaders and their follower, such leadership behavior can alter the nature of employees' productivity and job satisfaction including encouraging them to be innovative in their work. Logically, when the relationship is characterized by trust, liking and mutual respect, it will definitely impact the job-related well-being and effectiveness of employees.

In the context of Algeria petroleum sector, this study suggests that high quality of leader-member exchange helps increase innovation among the employees at production division of Sonatarch. With the right guidance and education, employees are given opportunities for learning and are taught to value diversity, which enables them to come up with original ideas. The leaders provide encouragement through an interactive style and serve as mentors, motivators, advisers, and assistants to the employees' members when they develop new concepts or take on new responsibilities. Therefore, Algerian petroleum managers ought to take their workers into account because doing so would encourage innovation at work.

The findings are consistent with those found in earlier research, indicating that leaders who engaged in consultation, delegation, and supportive conduct are successful in encouraging idea generation and application among staff members (De Jong & Hartog, 2007; Pieters et al., 2010; Zhang & Batrol, 2010). In this approach, an employee's likelihood of actively participating in innovative work behavior depends on the nature of their dyadic relationship with their supervisor (Atitumpong et al., 2018). Overall, the study findings indicate that Algeria employees in the petroleum industry are well aware of the importance of leader-member relationship in boosting their innovative work behavior.

The comprehensive understanding of the leader-member exchange can help production division of Sonatrach to increase the likelihood of innovative work behavior among the employees through better usage of the available resources at the appropriate time and location. Therefore, the Algerian petroleum sector should pay more attention to the dyadic relationship between leaders and employees as a way to

establish a successful method that uses leader-member exchange as a powerful predictor of innovative work behavior among employees.

The findings add to the body of knowledge on leadership by illuminating one of the mechanisms by which the supervisor-subordinate relationship promotes the enhancement of innovative work behavior. Based on previous studies (e.g., Schermuly et al., 2013; Volmer et al., 2012), this study may attest to the importance of leadership in employees' innovative work behavior, the crucial part that managers play in the innovation process.

5.3.2 Relationships between Team Climate for Innovation and Innovative Work Behavior

Team climate for innovation was also found to have a direct effect on innovative work behavior. As reported by Hulsheger et al. (2009) and Xu et al. (2019), team climate for innovation has been demonstrated to be one of the strongest predictors of creativity and innovation in the workplace.

The findings demonstrate that innovative work behavior can only be encouraged when the organization provides working environment that encourage for innovation. As argued by West (1990), in a team climate, innovative ideas are valued, supported, and may be shared without fear of retaliation. At the same time, while focusing on attaining both organizational and task objectives, the team innovation is promoted. Similarly, Odoardi et al. (2010) believed that if employees perceive their work environment to be where their creative and innovative efforts are valued and where their ideas are sincerely appreciated and accepted, they will be more willing or open to accept goals related to innovation and thus, engage in

innovative work behavior. As highlighted by Kim and Lee (1995), individuals in the innovative team climate are more empowered to share new and creative ideas with each other than individuals in a non-innovative environment. Since innovation is a social process, it is logic to argue that the implementation of ideas relies more heavily on the team climate for innovation. Based on a study conducted by Axtell et al. (2000), it was expected that climate is also important for innovative work behavior in the implementation stage.

Apart from that, team climate for innovation also reflects employees' beliefs that the organization values their contributions (being innovative) and cares for their climate at work. The current result is consistent with the Social Exchange Theory (Blau, 1964), which holds that when management does a favor for an employee, there is an expectation of a favorable return in the future. Within this context, the reciprocal exchange between team in the organizations seems to be an important category for enhancing the understanding of innovative work behaviors among employees.

5.3.3 Relationships between Job Demands and Innovative Work Behavior

It was hypothesized earlier that job demands would have a direct effect on innovative work behavior. However, the findings show the opposite where job demands did not encourage for innovative work behavior among the employees. As discussed in the literature, job demands can have a positive or negative impact on the employees. This study provides empirical evidence that job demands can discourage employees for being innovative in their work which provide support for study conducted by De Spiegelaere et al. (2012). In their study, they discovered that job

demand was not connected with innovative work behavior which is consistent with the findings of the current study. The current findings also provide support for study that was conducted by Dediu et al. (2018) where they found that working at high speed (job demands) were negatively related to innovative work behavior.

According to James (2011), one of the major obstacles to the individual creativity process is having overworked since increasing stress obstructs collaboration between coworkers and destroys communication channels. Based on the social exchange relationship, he found that employees are willing to reciprocate by discretionary behaviors like innovative work behavior that go beyond contractually determined job demands. This quality of social exchange relationship with the organization will determine how creatively employees respond to greater levels of job demands.

In the context of petroleum sector in Algeria, the findings indicate that the employees in the production division have low respond for innovation when there are higher levels of job demands. The effectiveness of the social exchange connection within the firm determines the amount to which employees can adapt creatively to the increased levels of job demands (Janssen 2001). In other words, working quickly and hard can create a stressful work environment that prevents individuals from being creative at work. Therefore, it is the responsibility of the management to keep the volume of job demands low while still allowing employees to fully utilize their innovative potential. This will result in the proper comprehension and perception that will effectively and correctly forecast other attitudes and actions by the employees toward various aspects of job demands and allow them to respond with greater degrees of innovation in the future.

5.3.4 Relationships between Leader-member Exchange and Learning Goal

Orientation

Leader-member exchange was found to have a direct effect when tested against learning goal orientation. The current finding is consistent with earlier research's conclusion (Atitumpong & Badir 2018; Gao et al., 2022). These empirical findings indicate that individual learning goal achievement is depending on the quality of relationship between their leaders. Individuals will commit and concern in improving their ability, knowledge, skills, and competency when their leaders demonstrate supportive relationship in terms of providing encouragement and resources. In fact, leaders may have different values towards individual learning goal.

Although relationships between leaders and followers as well as employees' drive to acquire skills through learning orientation are important in increasing creative outcomes, there is little empirical research on these effects in the literature (Atitumpong & Badir, 2018). Management can set up leadership development programs for supervisors so they can learn how to ensure respect for employees, how to give feedback, and how to identify the needs as well as potential for development of employees. This will help to improve the quality of the relationship between leaders and employees. In short, if supervisors work towards uphold an excellent connection with staff members that is built on mutual trust and respect, they can encourage employees to adopt a learning orientation and participate in informal learning (Bednall & Rijn 2013).

5.3.5 Relationships between Team Climate for Innovation and Learning Goal Orientation

Interestingly team climate for innovation did not have direct effect towards learning goal orientation. The findings demonstrate that individual achievement towards their learning goal is not depending on whether the organization provide or not working environment that promote innovation. At least not among the employees in the production department in the petroleum industry in Algeria. The most likely explanation for this is might be the employees in the production department are not aware of the need for learning goal orientation in their organization.

Another argument may relate to lack of coordination and communication between the teams or personnel, which affects the team climate for innovation within the organization and learning environment. Even though variation in learning goal orientation can be maintained, this diversity is linked to a disturbed team process because of a lack of coordination and communication (Pieterse et al., 2011).

The current findings are in line with the findings in a study conducted by Hirst et al. (2009), who discovered that in teams working in the contexts of higher level of learning, there was a negative relationship between employees' learning goal orientation and their capacity for innovation as their learning goal orientation increased. That is, the climate of the team may have an impact on a person's ability to drive innovation (Huang & Luthans, 2015). This suggests that there is a disconnect between the way employees perceive the learning process as a cultural norm and the actual manifestations of that norm. As a result, there will be a disconnect between management and the team environment. As was the case in this study, where team climate for innovation did not significantly affect learning goal orientation, it will be

challenging to gauge and forecast how employees feel about their teams. This outcome indicates that Sonatrach, a national corporation operating in Algeria's petroleum sector, need to foster an innovative work environment.

5.3.6 Relationships between Job Demands and Learning Goal Orientation

Interestingly, job demands were found to have a direct effect on learning goal orientation which provide support studies conducted by Gijbels et al. (2012), Kyndt et al. (2014) and Raemdonck et al. (2014). The findings indicate that employees in the production division did not perceive high workload as a negative impact on their learning goal orientation. They still able to achieve their learning goal despite the difficulty to manage tasks and work hard in limited timeframe for challenging and greater workloads.

The current findings are also consistent with study conducted by Van Yperen and Janssen (2002). They found that high job demands develop learning adaptability among employees to manage difficult tasks while working hard in limited timeframe for challenging and greater workloads. Employee tends to develop learning goal orientation behavior to acquire new things, and knowledge and to mastery skills. In other words, they develop positive perception towards job demands as opportunity for them to improve themselves. Through the training that they received have enabled them to meet the job demands.

5.3.7 Relationships between Learning Goal Orientation and Innovative Work Behavior

The results showed that the effect of learning goal orientation was positively and significantly related to innovative work behavior. In this context of study, learning goal seems to have the ability to encourage innovative work behavior especially among the employees in the production department in the petroleum sector.

The results support the study of Gong et al. (2009), who discovered that learning orientation is likely to increase employee creativity and extend their finding to innovative work behavior. The findings support the notion that employees' innovative work behavior is the outcome of learning efforts provided by learning orientation. The utilization of learning goal orientation in innovations is believed to produce a greater process of innovations (Calantone et al., 2002). Researchers agreed that learning goal orientation has four essential components. They include a dedication to learning, a shared goal, an open mind, and knowledge exchange inside the organization (Calantone et al., 2002; Hurley & Hult, 1998). Additionally, learning goal orientation was seen as a motivating factor or a reward for innovative work behavior which is consistent with Social Exchange Theory (Blau, 1964) where employees are motivated to engage in innovative work behavior when organization provides them with learning goal orientation.

According to Ahmad and Daghfous (2010), the competition that results from learning goal orientation and innovative work behavior enhances the willingness to come up with new ideas. As a result, learning goal orientation may play a significant

role in deciding innovative work behavior among employees, and establishing learning goal orientation may be required to encourage innovative work behavior.

5.3.8 Mediating Effect of Learning Goal Orientation on the Relationship between Leader-Member Exchange and Innovative Work Behavior

Apart from testing the direct relationship between the variables, the study also interested to uncover the role of learning goal orientation as a mediator. In this study, learning goal orientation was found to mediate the relationship between leader-member exchange and innovative work behavior as predicted. The findings indicate that to foster innovative work behavior, learning goal must be provided clearly even if the employees have strong relationship with their leaders.

Empirical evidence has revealed that a strong learning goal orientation can stimulate employees to engage in proactive work behaviors and innovativeness (Chughtai & Buckley, 2011). In fact, learning goal orientation construct was found to positively related to innovative work behavior in many past studies (Alegre & Chiva, 2013; Gong & Fan, 2006; Holman et al., 2012; Janssen & Van Yperen, 2004; Lu et al., 2012; Montani et al., 2017; Van Yeperen, 2003; Wang, 2008). Maden (2015) in his writing argued that learning goal orientation may provide a proximal mediating variable that associates with some kind of higher level of HR practices to proactive behaviors.

According to Dweck (1986, 2000); Dweck and Leggett (1988) and VandeWalle et al. (1999), learning orientation is an internal mindset that motivates individual to develop his or her competence. Thus, been regarded as an important

internal drive for enactive mastery and prove to be an important factor for employee's innovative work behavior.

The current results supported the rationale for using learning goal orientation as a method to support employees at Sonatrach's production division in Algeria in fostering innovation at work. In other words, learning goal orientation in this study act as the mechanism that explains the effect of leader-member exchange on innovative work behavior. Earlier studies have supported the relationship between leader-member exchange and innovative work behavior and learning goal orientation and innovative work behavior. Thus, the study logically suggests and supports the collective impact of these variables on innovative work behavior.

5.3.9 Mediating Effect of Learning Goal Orientation on the Relationship between Job Demands and Innovative Work Behavior

In this study, learning goal orientation was found mediates the relationship between job demands and innovative work behavior as predicted. The findings showed the effectiveness of job demands through learning goal orientation's influence on innovative at workplace. In other words, this mediation makes it clear how crucial learning goal orientation is in describing how job demand's indirect impact on innovative work behavior.

The association between job demands and innovative work behavior has theoretically supported by Blau's (1964) Social Exchange Theory. The theory suggested that employees who have learning goal orientation will enhance their ability to meet increased job demands by developing, disseminating, and putting into practice ideas for changing oneself. As a result, learning goal orientation may assist

the person in improving their skills and talents to better fit with the demanding employment requirements of their organizations.

This result supported the logical application of learning goal orientation as a procedure that can assist Sonatrach employees in Algeria's production division in developing more innovative work behavior by comprehending task requirements. In this study, learning goal orientation serves as a mechanism that helps to explain how job demands has an impact on innovative work behavior.

Previous research supported the link between learning goal orientation and innovative work behavior and job demands and innovative work behavior. This study logically suggests and supports the collective impact of these variables on innovative work behavior. The managers in petroleum sector in Algeria should consider the role learning goal orientation towards their employees' perception on the job demands as it's affecting the employees' innovative work behavior.

5.3.10 Mediating Effect of Learning Goal Orientation on the Relationship between Team Climate for Innovation and Innovative Work Behavior

In this study, learning goal orientation was found not mediate the relationship between team climate for innovation and innovative work behavior. Since there was no significant direct relationship between team climate for innovation and learning goal orientation, but there was a direct relationship between team climate for innovation and innovative work behavior, learning goal orientation did not serve as a mediator in bridging the relationship and establishing the indirect relationship. The results further demonstrated that the team climate for innovation does not influence the adoption of learning goal orientation and innovative work behavior. As a result,

this study did not find a significant relationship between the team climate for innovation and innovative work behavior through learning goal orientation.

One of the reasons why learning goal orientation did not mediate the relationship between team climate for innovation and innovative work behavior might be because employees at production division of Sonatarch think that they need first to create cohesive, innovative teams whose members trust one another. Team climate can help members develop a favorable attitude toward learning goal orientation. The employees might also feel obliged to learning goal orientation with others due to normative pressures arising from the strong team cohesion and trust on peers. Externally, social pressures from team climate or facilitating conditions from empowering leadership can be created to directly encourage innovative work behavior.

In the context of employees in the production department, they regard team climate for innovation is more related and important to encourage innovative work behavior. Based on their nature of work, providing the employees with work environment that encourage innovation rather than having individuals' learning goal may seem more practical in achieving innovative work behavior.

5.4 Research Implications

Two main implications (theoretical and practical) have been derived from the current study. The present study extended theoretical contributions towards innovative work behavior by adapting the Social Exchange Theory as the theoretical guidance for the research path. It also reflects its significance to the policymakers,

the petroleum industries, and other related practitioners. These two implications are discussed in the next subsections.

5.4.1 Theoretical Implications

The current findings have contributed to the current body of knowledge on innovative work behavior in several ways. First, findings from the current study have given empirical evidence on the relationship between leader-member exchange, team climate for innovation, job demands, learning goal orientation and innovative work behavior. In this study, all the tested variables have direct effect on innovative work behavior except for job demands. Leader-member exchange, team climate for innovation, and job demands, were also tested against learning goal orientation. There was no effect of team climate for innovation on innovative work behavior.

Though in the past, there are limited studies that focusing on leader-member exchange, team climate for innovation, job demands, and innovative work behavior in the context of petroleum industry especially in Algeria, the current findings provide support for Social Exchange Theory as a basis in discussing the influence of leader-member exchange, team climate for innovation, and job demands on production department employees' innovative work behavior. The theory's applicability, which had previously been used in a variety of situations and contexts, was now expanded to include the links between the leader-member exchange, team climate for innovation, job demands, learning goal orientation, and innovative work behavior in the context of Africa in general and Algeria in particular. Thus, the validity of the leader-member exchange, team climate for innovation, and job demands in the petroleum industry context, especially in Algeria reflects the model's

wide applicability in different contexts, as shown in earlier studies. Results that were consistent with previous studies expanded our understanding of the relationship between the variables and empirically supported the findings in this context of study. While, results that were inconsistent with previous studies added new knowledge to the field of team climate for innovation and innovative work behavior and prompted future researchers to further explore the relationship between these variables to fill the knowledge gaps.

Apart from that, the current study has also contributed to the body of knowledge on innovative work behavior by including learning goal orientation as mediating variable. The present findings empirically showed that leader-member exchange, team climate for innovation, and job demands were both directly and indirectly related to innovative work behavior through the inclusion of learning goal orientation. Since learning goal orientation was not empirically tested as a mediator in the relationship between leader-member exchange, team climate for innovation, and job demands and innovative work behavior, the current findings provide new empirical evidence to the body of knowledge regarding the mediation effect of learning goal orientation. By demonstrating the existence of significant direct and indirect influences of leader-member exchange, team climate for innovation, and job demands and innovative work behavior through learning goal orientation, this study provide clear evidence that the mediating role of learning goal orientation is empirically confirmed.

5.4.2 Practical Implications

The current research findings have several implications for the management of the petroleum sectors and policy makers. The research results demonstrate that having good relationship between leader and subordinate and providing with strong team climate for innovation increase the innovative work behavior. To enhance employees' innovative work behavior, the current study suggested the management in the petroleum industry to focus more on leader-member relationship and to create a strong team climate that encourage for innovation. It is recommended that the management of Sonatrach to provide favorable team climate for innovation that encourage innovativeness, fairness, mutual trust, and open conversation about exchange ideas to ensure that the company goals and visions are achieved.

The study also demonstrated that leader-member exchange and job demands were among the factors that had a positive impact in enhancing employees' learning goal. Therefore, the management need to continually improving relationship between leader and subordinate and providing them with high demanding jobs that are challenging enough for employee to improve their existing skill sets in striving to achieve their goal.

Apart from that, the current findings also have indicated that learning goal orientation was also perceived by the employees to contribute to their innovative work behavior. Since there was a direct relationship between learning goal orientation and innovative work behavior, it is suggested that the management to consider providing the employees with learning goal. Learning goal allows individual to increase their level of competence in a given activity.

Another interesting finding found in this study is the role of learning goal orientation in the relationship between leader-member exchange, team climate orientation, job demands and innovative work behavior. The current research findings indicate that for the leader-member exchange and team climate for innovation to have greater impact on the employees' innovative behavior, the employees must first have the learning goal. In other words, the management must first focus on providing the employees with learning goal before considering the leader-member exchange and team climate for innovation in the effort of enhancing innovative work behavior.

The management of the petroleum sector should promote the idea of learning goal orientation in management practices, human resource policies, and programs to enhance innovative work behavior. The management could also support the employees by providing more learning facilities, and opportunities to attend training, conferences and seminars for their professional development and enhancement of innovative at the workplace. This will help to create a culture of learning goal orientation in the petroleum setting.

The research contribution is quite significant because the oil sector contributes significantly to Algeria's gross domestic product (GDP). Therefore, it is crucial for the Algeria government to pay serious attention and encourage employees' innovative work behavior in the country's petroleum sector production division by consider the role of learning goal and training in boosting the innovative work behavior. Additionally, other industries apart from petroleum sector can also benefits from the current findings.

In summary, the prescriptions discussed above are suggestive of the types of actions that the management in the petroleum industry can take to enhance

innovative work behavior among production department employees. It is hoped that results from the study will encourage new thinking among the management in the petroleum industry. The research results reported in this study suggest the need for leader-member exchange and team climate for innovation to increase innovative work behavior among production department employees. Apart from that, the industry management also needs to consider the role of learning goal when considering for boosting the innovative work behavior among the employees.

5.5 Limitations and Suggestions for Future Research

There are limitations in the design of this study that might influence the interpretations and generalizations of these findings. These issues are discussed next.

The study was aimed at understanding the factors that might influence employees' innovative work behavior. However, the study focused towards leader-member exchange, team climate for innovation, job demands, and learning goal orientation. The findings indicate that the selected variables only describe 41.1% of the research model. It means that there are another 58.9% variables that are not yet explored and examined when studied on innovative work behavior. This provides opportunity for future researchers to extend the current study.

Next, the study employed quantitative approach with cross-sectional design. Even though the cross-sectional design is easy, cheap, and enables for data gathering in a short amount of time, it provides little insight into how the entire process of innovative work behavior works. The findings only highlight the causal relationship between the variables without being able to answer the why and how those factors influence innovative work behavior. If future researchers are interested to uncover

those question in studying innovative work behavior, a longitudinal approach would be more suitable.

In summary, while there are some limitations associated with the approach used here and given the exploratory nature of the study, the results of this study provide useful findings that should be of interest both researchers and practitioners.

5.6 Conclusion

The aim of this study was to investigate how to improve innovative work behavior among employees. The main concern of this study is the role of leader-member exchange, team climate for innovation, and job demands in enhancing innovative work behavior among employees. Also, the mediating effect of learning goal orientation on the relationship between leader-member exchange, team climate for innovation, job demands and innovative work behavior.

The results indicate that leader-member exchange, team climate for innovation and learning goal orientation do have direct relationship with innovative work behavior. Leader-member exchange and job demands were also found related to learning goal orientation. In terms of mediating effect of learning goal orientation, the study found that its' only mediate the relationship between leader-member exchange and innovative behavior and between job demands and innovative behavior.

It is hoped that through the examination of the leader-member exchange, team climate for innovation, job demands and learning goal orientation in predicting innovative work behavior, a more complete understanding of the influence will be achieved.

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APPENDICES





A STUDY ON INNOVATIVE WORK BEHAVIOR

Dear Participant,

Thank you for agreeing to participate in this research.

I would appreciate it if you could answer the questions carefully as the information you provide will influence the accuracy and the success of this research. It will take no longer than 30 minutes to complete the questionnaire. All answers will be treated with strict confidence and will be used for the purpose of the study only.

If you have any questions regarding this research, you may address them to me at the contact details below.

Thank you for your cooperation and the time taken in answering this questionnaire.

Yours sincerely,

Anes Hebbaz

PhD Candidate

School of Business Management

University Utara Malaysia

Email: anes.hebbaz@yahoo.fr

HP: 0173989867

SECTION ONE:

INSTRUCTION: Please read the following statements and state your **LEVEL OF AGREEMENT** by circling the appropriate number using the following scale.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
IWB1 - I create new ideas for difficult issues	1	2	3	4	5
IWB2 - I search out new techniques, processes, working methods, techniques, and/or product ideas.	1	2	3	4	5
IWB 3 - I generate original solutions for problems	1	2	3	4	5
IWB4 - I mobilize support for innovative ideas	1	2	3	4	5
IWB5 - I make organizational members enthusiastic for innovative ideas.	1	2	3	4	5
IWB - 6 I try to acquire approval for innovative ideas.	1	2	3	4	5
IWB7 - I transform innovative ideas into useful applications	1	2	3	4	5
IWB 8 - I introduce innovative ideas into the work environment in a systematic way	1	2	3	4	5
IWB 9 - I evaluate the utility (benefits) of innovative ideas	1	2	3	4	5

SECTION TWO:

INSTRUCTION: Please read the following statements and state your **LEVEL OF AGREEMENT** by circling the appropriate number using the following scale.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
LMX1 I usually know where I stand with my leader	1	2	3	4	5
LMX2 My leader has enough confidence in me that he/she would defend and justify my decisions if I were not present to do so	1	2	3	4	5
LMX3 My working relationship with my leader is effective	1	2	3	4	5
LMX4 My leader understands my problems and needs	1	2	3	4	5
LMX5 I can count on my leader to "bail me out", even at his/her own expense, when I really need it	1	2	3	4	5
LMX6 My leader recognizes my potential	1	2	3	4	5
LMX7 Regardless of how much power my leader has built into his or her position; my leader would be personally inclined to use his/her power to help me solve problems in my work	1	2	3	4	5

SECTION THREE:

INSTRUCTION: Please read the following statements and state your **LEVEL OF AGREEMENT** by circling the appropriate number using the following scale.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
TCI1 I agree with my team's objectives	1	2	3	4	5
TCI2 I believed that my team's objectives are clearly understood by other members of the team	1	2	3	4	5
TCI3 I believed that my team's objectives can actually be achieved	1	2	3	4	5
TCI4 The team objectives are worthwhile to the organization	1	2	3	4	5
TCI5 We have a 'we are in it together' attitude	1	2	3	4	5
TCI6 People keep each other informed about work-related issues in the team	1	2	3	4	5
TCI7 People feel understood and accepted each other	1	2	3	4	5
TCI8 There are real attempts to share information throughout the team	1	2	3	4	5
TCI9 Team members prepared to question the basis of what the team is doing	1	2	3	4	5
TCI10 The team critically appraise potential weaknesses in what it is doing in order to achieve the best possible outcome	1	2	3	4	5

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
TCI11 Members of the team build on each other's ideas in order to achieve the best possible outcome	1	2	3	4	5
TCI12 People in this team are always searching for fresh, new ways of looking at problems	1	2	3	4	5
TCI13 In this team we take the time needed to develop new ideas	1	2	3	4	5
TCI14 People in the team co-operate in order to help develop and apply new ideas	1	2	3	4	5



SECTION FOUR:

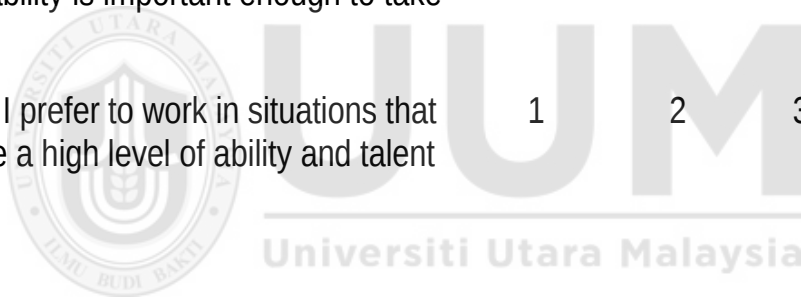
INSTRUCTION: Please read the following statements and state your **LEVEL OF AGREEMENT** by circling the appropriate number using the following scale.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
JD1 I have to work fast	1	2	3	4	5
JD2 I have too much work to do	1	2	3	4	5
JD3 I have to work extra hard to finish a task	1	2	3	4	5
JD4 I work under time pressure	1	2	3	4	5
JD5 I can do my work in comfort	1	2	3	4	5
JD6 I have to deal with a backlog at work	1	2	3	4	5
JD7 I have problems with the pace of work	1	2	3	4	5
JD8 I have problems with the workload	1	2	3	4	5

SECTION FIVE:

INSTRUCTION: Please read the following statements and state your **LEVEL OF AGREEMENT** by circling the appropriate number using the following scale.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
LGO1 I am willing to select a challenging work assignment that I can learn a lot from	1	2	3	4	5
LGO2 I often look for opportunities to develop new skills and knowledge	1	2	3	4	5
LGO3 I enjoy challenging and difficult tasks at work where I'll learn new skills	1	2	3	4	5
LGO4 For me, development of my work ability is important enough to take risks	1	2	3	4	5
LGO5 I prefer to work in situations that require a high level of ability and talent	1	2	3	4	5



PERSONAL INFORMATION

This section contains some general information about yourself. Please tick (✓) in the appropriate box or fill in the blanks provided.

1. My gender:

☐

Male

☐

Female

2. My age:

☐

20 – 30 years

☐

31 – 40 years

☐

41 – 50 years

☐

Above 50 years

3. My marital status:

☐

Single

☐

Married

☐

Divorced / Separated / Widowed

4. My highest academic qualification:

☐

Technical Certificate

☐

First Degree

☐

Master degree

☐

Degree in Engineering

5. Number of years with present organization:

☐	Less than 5 years	☐	5 – 10 years
☐	11 – 15 years	☐	16- 20 years
☐	21-25 years	☐	More than 26 years

6. My position: _____

☐	Technician	☐	Management staff
☐	Engineer		



--THANK YOU FOR TAKING THE TIME TO COMPLETE THIS SURVEY--



اسبتي ان حول نكس لوكال عم لال بداعي

س ملل الرح من الرحيم

سيدي سي يتي الم صم /ة

الس اعلي كم ورح همل لك على يوسفك ات ه،،،،

تحيه يلبة نوعد:

نض عبي في أي كم همل لتي ان، ألين أنت في حوه جزءا من وقتك الم شين،
نوشركل كهدية جهالت عاون وك لن لثق بقة إل لجة ومضوعيت ها حول
جهي علقورات ال وار دقي هذا التوبي ان.
إنال غرض متصم مي همل لتي ان هو وضع ألدق ي اسهتت خدفي دراسة
بعنوان:

شر ألق ي الق بتبالي قوم اخ الفري ق الإبداع ي و نلق علم ال موجه على كس لوك
ال عمل الإبداع ي ل عمل شرك كقس من طراك

وذلك استللك لم تطلب ات ال حصول على ش هاد ل دكتورافي إدارة ال موارد
لشريه - جام علق لالم ال مال يزي (University Utara Malaysia).
يرال ق تفضل لم لفق رات التوبي ان على ملب أن ي تالم ت عامل م عم على و نلكم
والجبت لك م سري ق ت ام على غلي اللب حث العلم يوس وفي ت مت حيل إل لجات إل ي
مؤشر اتوق متي هتت خدفي الت لجيل.

تفضل لوقب ولفلق الح ت رام الف قدي

لباحث

أنس هباز

كلية إدارة ال عمل

جامعة أوتارا ماليزيا

رقم الملف لمحمول: 0541107942

البريد الإلكتروني: anes.hebbaz@yahoo.fr

المحور الأول : المعلومات الديموغرافية

يرجى ملء الفراغات ووضع علامة (✓) بمحاذاة كل ما يعيق مع التالى شخصي:

1. السن : ☐ 20-30 سنة ☐ 31-40 سنة ☐ 41-50 سنة ☐ 60 سنة فأكثر

2. الجنس : ☐ ذكر ☐ أنثى

3. لحالة الزوجية : ☐ أعزب ☐ متزوج ☐ طلق/ة أرمل

4. ل مؤهل لاداري : ☐ تقني سامي ☐ فني سامي ☐ فني ☐ مهندس

5. سنوات الخبرة في الشركة : ☐ أقل من 5 سنوات ☐ 5-10 سنة ☐ 11-15 سنة

☐ 16-20 سنة ☐ 21-25 سنة ☐ 26 فأكثر

6. لمستوى لاداري : ☐ إداري ☐ مهندس

☐ تقني ☐ أخرى يرجى التحديد

يهدف هذا لجزء لى قي أسأثر سلوك العمل الابداعى في لشركة، يرجع وضع إشارة (✓) في لمربع في يمين مدى موافقتك لى عبارات لملأىة:

الرقم	الفقــــــــــــرة	ال ألفقشدة	ال ألفق	م حيد	ألفق	ألفقشدة
1	أن ابتكر فلانًا جديدة لقضبي اصية					
2	بأحث عن تقنيات وعليات وألأب عمل وتقنيات و//ألفكار منتجات جيدة					
3	أؤوبتولي دحل ول طأل لعل م شاكل					
4	أؤش دال د عمل ألفكار ال مبتكرة					
5	أؤعل أؤضاء الشركة بؤم سؤن ل ألفكار ال مبتكرة					
6	أؤاول ال حصول على ال فؤاقة حول ألفكار ال مبتكرة					
7	أؤوبت حول ألفكار ال مبتكرة لى تطلى اؤم فيدة.					
8	أؤدم ألفكار ال مبتكر قى بؤة ال عمل ب طؤقة فؤة					
9	أؤوبت قىم فؤة ألفكار ال مبتكرة					

يهدف هذا لجزء لى قى اس اثل قل لى الاقناب لوى عى سلوك لعمل الادعاى ، ي رجى ضع اشارة)√(فى لصبع
المنى بى ن مدى موفقك ل عبارات لكلى :

الأرقام	ألفقــــــــــــــــرة	ال ألفقشدة	ال ألفق	م جلد	ألفق	ألفقشدة
1	في أغلب الأحيان اعرف نهي الكون بجانب مسؤولي					
2	يضع مسؤولي بتق قاتم في محبث له سيفلع عن قدراتي هيرر طلي غيلي (إذالم كن موجوللقيام بذلك)					

APPENDIX B

3	عائتي في العمل مع مسؤولي جد فعالة				
4	قائد فيهم مشكلتي واضي اجلي				
5	يملغي في العمل مع ادلى قلا في النقاذي ، ضى على عنيق هال خاصة ، عديم أضاجه حقا				
6	يدرك قلا في المكلي				
7	بغض النظر عن مقدار القوة التي القتب هاقلا في هيبه بي ميل قلا في شخري الى ليت خدام سلطه لمس اعتي في حل المشكلت في علي				

لمحور الابداع: في الفوق الابداعي

يهدف هذا لجزء لى في اسأثر من اخ فيق الابداعي في سلوك ل عمل الابداعي ، يري وضع باره (في
لوبي على في بي ن مدى موفلتك لارب اراتلثايه :

الرقم	الفق	ال ألفق شدة	ال ألفق	محليد	ألفق	ألفق شدة
1	لألفق مع أمداف فيقي.					
2	اعتقد أن أمداف فيقي فهموم قبضوح من قبل جهي عاض الف فيق ألخين.					
3	اعتقد أن هيم كن تحقيق أمداف فيقي بلفعل.					
4	أفنا الف فيق جبر قبال بقدام من مسؤولي للشركة					
5	ليني بلوك "لحن معا" من أجل بقدام العملين جاح					
6	يطلب العمل موضوعون على بعض مالمعض حول اللق ضطي اللق قبل عمل فيقي.					
7	يبدأ أعضاء الف فيق فيقون بعض مالمعض المعض					

APPENDIX B

8	يوجد فاك م ح ا و ا ل ت ح ق ق ي ل ش ا ر ك ة للمعاملات مع جميع اعضاء الفريق.				
9	درجة استعداء الفريق لتساول حول اساس م ل ق و م ا ل ف ر ي ق .				
10	يتم الفريق بتقييم ا ط ا ل ض ع ف ل م م ت ل ة من اجل تحسين ف ا ل ض ل ن ي ج ة م ل ف ن ة				
11	يتم ا م ا ع ط ي الفريق ب ب ن ا ء ف ل ك ا ر م ع بعض م ا ل ع ض م ن ا ج ل م ح ق ق ف ا ل ض ل ن ي ج ة م ل ف ن ة .				
12	يبحث الممرفون في الفريق نظاماً عن طرق جديدة لحل المشكلات				
13	يجب ا ل خ ف ع ي ن ا ل ع ب ا ر ا ل ق ت ا ل ل ز م ل ت ط و ر ف ل ك ا ر ج ي د ف ي ل ف ر ي ق .				
14	يجب ع ا و ن ج م ع ا ع ض ا ل ف ر ي ق م ن ا ج ل الم س ا م م ف ي ت ط و ر و ت ط ب ق ف ل ك ا ر ج ي د ة .				

لم حور ل خ ام س ج ت طلب ات ل ا عمل

يهدف هذا لجزء إلى قياس أثر متطلبات عمل على سلوك العمل الإبداعي لعمال في الشركة ، يرجى وضع إشارة ✓ في لوبوع لنصيبين مدى موافقتك لعبارة التلخيص:

الرقم	أفقــــــــــــــــــــرة	ال أفقشدة	ال أفق	محل يد	أفوق	فأفوق بشدة
1	المبدلي من لاجازالعمل بسرة.					
2	لدي الفخير من العمل القومبه.					
3	المبدلي من العمل ج هضلافي إلن هاء م مةالعمل.					
4	أعملت حتض غطالقت.					
5	يملحن وإلخي ابعل يف في راحة.					
6	المبدلي من ل هاء أال لعتركمة في العمل.					

APPENDIX B

7	لدي مشاركتك مع ويترال عمل.				
8	لدي مشاركتك مع عباءال عمل.				

لم حور لاس ادس اِلت غم ل حوجہ

يهدف هذا لجزء لىقى اسأثرت غم لموجه على سلوك لاعمل الإبداعى، يرجى وضع إشارة √ (في لوبع لذى بى نمدى موفقت لىل ع بارا تلتالىة:

[illegible]

نقدر مسألتكم لبيلة وقلية مشكرا خيال على قوتكم.

Common Method Variance Test

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared		
Loadings	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	11.598	26.972	26.972	11.598	26.972	26.972
2	4.907	11.411	38.384			
3	3.089	7.184	45.568			
4	2.687	6.249	51.817			
5	2.053	4.775	56.592			
6	1.846	4.294	60.885			
7	1.627	3.783	64.669			
8	1.483	3.449	68.118			
9	1.156	2.689	70.807			
10	1.038	2.414	73.220			
11	.989	2.299	75.519			
12	.825	1.919	77.438			
13	.748	1.739	79.177			
14	.698	1.623	80.800			
15	.660	1.536	82.336			
16	.627	1.459	83.794			
17	.587	1.364	85.159			
18	.533	1.239	86.398			
19	.526	1.223	87.621			
20	.449	1.045	88.666			

APPENDIX C

21	.419	.974	89.640
22	.405	.943	90.582
23	.364	.845	91.428
24	.337	.783	92.210
25	.316	.736	92.946
26	.288	.669	93.616
27	.258	.601	94.217
28	.249	.579	94.796
29	.240	.558	95.354
30	.221	.515	95.869
31	.206	.480	96.349
32	.204	.473	96.822
33	.186	.434	97.256
34	.180	.418	97.674
35	.161	.375	98.049
36	.150	.348	98.397
37	.130	.302	98.700
38	.122	.284	98.983
39	.106	.247	99.231
40	.102	.238	99.469
41	.092	.214	99.683
42	.078	.182	99.864
43	.058	.136	100.000
Extraction Method: Principal Component Analysis.			

Content Validity Feedback Form تحكيم الإستبيان مع الملاحظات

Dear experts,

I am a PhD candidate from Universiti Utara Malaysia. Currently, I am doing a study related to innovative work behavior among employees in Algerian Petroleum sector.

This inventory contains 5 domains and 43 items related to innovative work behavior study. Your expert judgement is valuable for my study. Your review should be based on the definition and relevant terminologies that are provided to you. Thank you for your time.

Domain 1: Innovative Work Behavior (IWB) أثر سلوك العمل الإبداعي

Operational Definition: The behavior of an individual that is intended to intentionally create, introduce, and apply new ideas, processes, or products (Janssen, 2000).

Items	الأسئلة	Comment الملاحظة
IWB1 - I create new ideas for difficult issues	أنا ابتكر أفكاراً جديدة لتضايا صعبة	agree
IWB2 - I search out new techniques, processes, working methods, techniques, and/or product ideas	أبحث عن تقنيات وعمليات وأساليب عمل وتقنيات و/أو أفكار منتجات جديدة	agree
IWB3 - I generate original solutions for problems	أقوم بتوليد حلول أصيلة للمشاكل	//
IWB4 - I mobilize support for innovative ideas	أحشد الدعم للأفكار المبتكرة	//
IWB5 - I make organizational members enthusiastic for innovative ideas	أجعل أعضاء الشركة متحمسين للأفكار المبتكرة	//

IWB6 - I try to acquire approval for innovative ideas	أحاول الحصول على الموافقة حول الأفكار المبتكرة	//
IWB7 - I transform innovative ideas into useful applications	أقوم بتحويل الأفكار المبتكرة إلى تطبيقات مفيدة.	//
IWB8 - I introduce innovative ideas into the work environment in a systematic way	أقدم الأفكار المبتكرة في بيئة العمل بطريقة منهجية	//
IWB9 - I evaluate the utility (benefits) of innovative ideas	أقوم بتقييم فوائد الأفكار المبتكرة	//

Domain 2: Leader-member exchange (LMX) القيادة التبادلية

Operational Definition: A unique exchange relationship that develops between a supervisor and their subordinate which will influence the subordinate's work behaviors and attitudes (Wayne, Shore & Liden, 1997)

Items	الأسئلة	Comment
LMX1- I usually know where I stand with my leader	في أغلب الأحيان أعرف متى أكون بجانب مسؤولي	I usually know where I stand with my manager
LMX2 - My leader has enough confidence in me that he/she would defend and justify my decisions if I were not present to do so	يضع مسؤولي ثقة تامة في حيث أنه سيدافع عن قراراتي ويبررها في غيابي (إذا لم أكن موجوداً للقيام بذلك)	I suggest to use the word "managed" instead of "leader"
LMX3 - My working relationship with my leader is effective	علاقتي في العمل مع مسؤولي جد فعالة	//
LMX4 - My leader understands my problems and needs	قائدي يفهم مشاكلي واحتياجاتي	//
LMX5 - I can count on my leader to bail me out, even at his/her own expense, when I really need it	يمكنني الاعتماد على قائدي لإنقاذي ، حتى على نفقته الخاصة ، عندما احتاجه حقاً	//

LMX6 - My leader recognizes my potential	يدرك قائدي إمكانياتي	✓
LMX7 - Regardless of how much power my leader has built into his or her position; my leader would be personally inclined to use his/her power to help me solve problems in my work	بغض النظر عن مقدار القوة التي اكتسبها قائدي في منصبه ؛ يميل قائدي شخصيًا إلى استخدام سلطته لمساعدتي في حل المشكلات في عملي	✓

Domain 3: Team Climate for Innovation (TCI) مناخ الفريق الإبداعي

Operational Definition: The team innovation is encouraged in a team climate where creative ideas are valued and supported, can be presented without fear of reprisal, and where team members are focused on achieving both organizational and task objectives (West, 1990)

Items	الأسئلة	Comment الملاحظة
TCI1 I agree with my team's objectives	أنا أتفق مع أهداف فريقتي.	✓
TCI2 I believed that my team's objectives are clearly understood by other members of the team	اعتقد أن أهداف فريقتي مفهومة بوضوح من قبل جميع أعضاء الفريق الآخرين.	✓
TCI3 I believed that my team's objectives can actually be achieved	اعتقد أنه يمكن تحقيق أهداف فريقتي بالفعل.	✓
TCI4 My team objectives are worthwhile to the organization	أهداف الفريق جديرة بالاهتمام من مسوولي الشركة	✓
TCI5 My team has a 'we are in it together' attitude	لدينا سلوك "نحن معًا" من أجل إتمام العمل بنجاح	✓

TCI6 Team members keep each other informed about work-related issues in the team	يطلع الموظفون على بعضهم البعض حول القضايا المتعلقة بالعمل في الفريق.	✓
TCI7 Team members feel understood and accepted each other	يتفهم أعضاء الفريق ويتقبلون بعضهم البعض	✓
TCI8 There are real attempts to share information throughout the team	يوجد هناك محاولات حقيقية لمشاركة المعلومات مع جميع أعضاء الفريق.	✓
TCI9 Team members prepared to question the basis of what the team is doing	درجة استعداد أعضاء الفريق للتساؤل حول أساس ما يقوم به الفريق.	✓
TCI10 My team critically appraise potential weaknesses in what it is doing in order to achieve the best possible outcome	يقوم الفريق بتقييم نقاط الضعف المحتملة من أجل تحقيق أفضل نتيجة ممكنة	✓
TCI11 Members of the team build on each other's ideas in order to achieve the best possible outcome	يساهم أعضاء الفريق ببناء أفكار مع بعضهم البعض من أجل تحقيق أفضل نتيجة ممكنة.	✓
TCI12 Members of the team are always searching for fresh, new ways of looking at problems	يبحث الموظفون في الفريق دائمًا عن طرق جديدة لحل المشكلات	✓
TCI13 In my team, the team members take the time needed to develop new ideas	يجب الأخذ بعين الاعتبار الوقت اللازم لتطوير أفكار جديدة في الفريق.	✓
TCI14 Members of the team co-operate in order to help develop and apply new ideas	يجب تعاون جميع أعضاء الفريق من أجل المساهمة في تطوير وتطبيق أفكار جديدة.	✓

Domain 4: Job Demand (JD) متطلبات العمل

Operational Definition: Having to work fast and hard, having a great deal to do and having too little time (Janssen, 2001)

Items	الأسئلة	Comment الملاحظة
JD1 - I have to work fast	لا بد لي من إنجاز العمل بسرعة.	agreed
JD2 - I have too much work to do	لدي الكثير من العمل لأقوم به.	١١
JD3 - I have to work extra hard to finish a task	لا بد لي من العمل بجهد إضافي لإنهاء مهمة العمل.	١١
JD4 - I work under time pressure	أعمل تحت ضغط الوقت.	١١
JD5 - I can do my work in comfort (R)	يمكنني القيام بعملتي في راحة.	١١
JD6 - I have to deal with a backlog at work	لا بد لي من إنهاء الأعمال المتراكمة في العمل.	١١
JD7 I - have problems with the pace of work	لدي مشاكل مع وتيرة العمل.	١١
JD8 I have problems with the workload	لدي مشاكل مع عبء العمل.	١١

Domain 5: Learning Goal Orientation (LGO) التعلم الموجه

Operational Definition: A desire to develop the self by acquiring new skills, mastering new situations, and improving one's competence (Vandewalle, 1997)

Items	الأسئلة	Comment الملاحظة
LGO1 - I am willing to select a challenging work assignment that I can learn a lot from	أنا على استعداد لاختيار مهمة عمل صعبة بحيث يمكنني تعلم الكثير منها.	agreed
LGO2 - I often look for opportunities to develop new skills and knowledge	غالبًا ما أبحث عن فرص لتطوير مهارات ومعارف جديدة.	١١

LGO3 - I enjoy challenging and difficult tasks at work where I'll learn new skills	استمتع بالمهام الصعبة في العمل لأنني سأتعلم مهارات جديدة.	١١
LGO4 - For me, development of my work ability is important enough to take risks	بالنسبة لي، فإن تطوير قدراتي في العمل مهم بما يكفي لتحمل المخاطر.	١١
LGO5 I prefer to work in situations that require a high level of ability and talent	أفضل العمل في المواقف التي تتطلب مستوى عالٍ من القدرة والموهبة.	١١

نقدر مساهمتكم النبيلة والقيمة، شكرًا جزيلًا على وقتكم.

THANK YOU FOR TIME TAKEN



Signature and stamp

التوقيع مع الختم

Content Validity Feedback Form تحكيم الإستبيان مع الملاحظات

Dear experts,

I am a PhD candidate from Universiti Utara Malaysia. Currently, I am doing a study related to innovative work behavior among employees in Algerian Petroleum sector.

This inventory contains 5 domains and 43 items related to innovative work behavior study. Your expert judgement is valuable for my study. Your review should be based on the definition and relevant terminologies that are provided to you. Thank you for your time.

Domain 1: Innovative Work Behavior (IWB) أثر سلوك العمل الإبداعي

Operational Definition: The behavior of an individual that is intended to intentionally create, introduce, and apply new ideas, processes, or products (Janssen, 2000).

Items	الأسئلة	Comment الملاحظة
IWB1 - I create new ideas for difficult issues	أنا ابتكر أفكاراً جديدة لتضاي صعبة	OK
IWB2 - I search out new techniques, processes, working methods, techniques, and/or product ideas	أبحث عن تقنيات وعمليات وأساليب عمل وتقنيات و/أو أفكار منتجات جديدة	OK
IWB3 - I generate original solutions for problems	أقوم بتوليد حلول أصيلة للمشاكل	OK
IWB4 - I mobilize support for innovative ideas	أحشد الدعم للأفكار المبتكرة	OK
IWB5 - I make organizational members enthusiastic for innovative ideas	أجعل أعضاء الشركة متحمسين للأفكار المبتكرة	OK

IWB 6 - I try to acquire approval for innovative ideas	أحاول الحصول على الموافقة حول الأفكار المبتكرة	OK
IWB7 - I transform innovative ideas into useful applications	أقوم بتحويل الأفكار المبتكرة إلى تطبيقات مفيدة.	OK
IWB 8 - I introduce innovative ideas into the work environment in a systematic way	أقدم الأفكار المبتكرة في بيئة العمل بطريقة منهجية	OK
IWB 9 - I evaluate the utility (benefits) of innovative ideas	أقوم بتقييم فوائد الأفكار المبتكرة	OK

Domain 2: Leader-member exchange (LMX) القيادة التبادلية

Operational Definition: A unique exchange relationship that develops between a supervisor and their subordinate which will influence the subordinate's work behaviors and attitudes (Wayne, Shore & Liden, 1997)

Items	الأسئلة	Comment
LMX1- I usually know where I stand with my leader	في أغلب الأحيان اعرف متى اكون بجانب مسؤولي	OK
LMX2 - My leader has enough confidence in me that he/she would defend and justify my decisions if I were not present to do so	يضع مسؤولي ثقة تامة في حيث أنه سيدافع عن قراراتي ويبررها في غيابي (إذا لم أكن موجوداً للقيام بذلك)	OK
LMX3 - My working relationship with my leader is effective	علاقتي في العمل مع مسؤولي جد فعالة	OK
LMX4 - My leader understands my problems and needs	قائدي يفهم مشاكلي واحتياجاتي	OK
LMX5 - I can count on my leader to bail me out, even at his/her own expense, when I really need it	يمكنني الاعتماد على قائدي لإنقاذي ، حتى على نفقته الخاصة ، عندما أحتاجه حقاً	OK

LMX6 - My leader recognizes my potential	يدرك قائدي إمكانياتي	OK
LMX7 - Regardless of how much power my leader has built into his or her position; my leader would be personally inclined to use his/her power to help me solve problems in my work	بغض النظر عن مقدار القوة التي اكتسبها قائدي في منصبه ؛ يميل قائدي شخصيًا إلى استخدام سلطته لمساعدتي في حل المشكلات في عملي	OK

Domain 3: Team Climate for Innovation (TCI) مناخ الفريق الإبداعي

Operational Definition: The team innovation is encouraged in a team climate where creative ideas are valued and supported, can be presented without fear of reprisal, and where team members are focused on achieving both organizational and task objectives (West, 1990)

Items	الأسئلة	Comment الملاحظة
TCI1 I agree with my team's objectives	أنا أتفق مع أهداف فريقتي.	OK
TCI2 I believed that my team's objectives are clearly understood by other members of the team	اعتقد أن أهداف فريقتي مفهومة بوضوح من قبل جميع أعضاء الفريق الآخرين.	OK
TCI3 I believed that my team's objectives can actually be achieved	اعتقد أنه يمكن تحقيق أهداف فريقتي بالفعل.	OK
TCI4 My team objectives are worthwhile to the organization	أهداف الفريق جديرة بالاهتمام من مسؤولي الشركة	OK
TCI5 My team has a 'we are in it together' attitude	لدينا سلوك "نحن معًا" من أجل إتمام العمل بنجاح	OK

TCI6 Team members keep each other informed about work-related issues in the team	يطلع الموظفون على بعضهم البعض حول القضايا المتعلقة بالعمل في الفريق.	OK
TCI7 Team members feel understood and accepted each other	يتفهم أعضاء الفريق ويتقبلون بعضهم البعض	OK
TCI8 There are real attempts to share information throughout the team	يوجد هناك محاولات حقيقية لمشاركة المعلومات مع جميع أعضاء الفريق.	OK
TCI9 Team members prepared to question the basis of what the team is doing	درجة استعداد أعضاء الفريق للتساؤل حول أساس ما يقوم به الفريق.	OK
TCI10 My team critically appraise potential weaknesses in what it is doing in order to achieve the best possible outcome	يقوم الفريق بتقييم نقاط الضعف المحتملة من أجل تحقيق أفضل نتيجة ممكنة	OK
TCI11 Members of the team build on each other's ideas in order to achieve the best possible outcome	يساهم أعضاء الفريق ببناء أفكار مع بعضهم البعض من أجل تحقيق أفضل نتيجة ممكنة.	OK
TCI12 Members of the team are always searching for fresh, new ways of looking at problems	يبحث الموظفون في الفريق دائمًا عن طرق جديدة لحل المشكلات	OK
TCI13 In my team, the team members take the time needed to develop new ideas	يجب الأخذ بعين الاعتبار الوقت اللازم لتطوير أفكار جديدة في الفريق.	OK
TCI14 Members of the team co-operate in order to help develop and apply new ideas	يجب تعاون جميع أعضاء الفريق من أجل المساهمة في تطوير وتطبيق أفكار جديدة.	OK

Domain 4: Job Demand (JD) متطلبات العمل**Operational Definition:** Having to work fast and hard, having a great deal to do and having too little time (Janssen, 2001)

Items	الأسئلة	Comment الملاحظة
JD1 - I have to work fast	لا بد لي من إنجاز العمل بسرعة.	OK
JD2 - I have too much work to do	لدي الكثير من العمل لأقوم به.	OK
JD3 - I have to work extra hard to finish a task	لا بد لي من العمل بجهد إضافي لإنهاء مهمة العمل.	OK
JD4 - I work under time pressure	أعمل تحت ضغط الوقت.	OK
JD5 - I can do my work in comfort (R)	يمكنني القيام بعملي في راحة.	OK
JD6 - I have to deal with a backlog at work	لا بد لي من إنهاء الأعمال المتراكمة في العمل.	OK
JD7 - I have problems with the pace of work	لدي مشاكل مع وتيرة العمل.	OK
JD8 - I have problems with the workload	لدي مشاكل مع عبء العمل.	OK

Domain 5: Learning Goal Orientation (LGO) التعلم الموجه**Operational Definition:** A desire to develop the self by acquiring new skills, mastering new situations, and improving one's competence (Vandewalle, 1997)

Items	الأسئلة	Comment الملاحظة
LGO1 - I am willing to select a challenging work assignment that I can learn a lot from	أنا على استعداد لاختيار مهمة عمل صعبة بحيث يمكنني تعلم الكثير منها.	OK

LGO2 - I often look for opportunities to develop new skills and knowledge	غالبًا ما أبحث عن فرص لتطوير مهارات ومعارف جديدة.	OK
LGO3 - I enjoy challenging and difficult tasks at work where I'll learn new skills	أستمتع بالمهام الصعبة في العمل لأنني سأتعلم مهارات جديدة.	OK
LGO4 - For me, development of my work ability is important enough to take risks	بالنسبة لي، فإن تطوير قدراتي في العمل مهم بما يكفي لتحمل المخاطر.	OK
LGO5 - I prefer to work in situations that require a high level of ability and talent	أفضل العمل في المواقف التي تتطلب مستوى عالٍ من القدرة والموهبة.	OK

نقدر مساهمتكم النبيلة والقيمة، شكرًا جزيلًا على وقتكم.

THANK YOU FOR TIME TAKEN



Signature and stamp

التوقيع مع الختم

Content Validity Feedback Form - تحكيم الإستبيان مع الملاحظات

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LMX3 - My working relationship with my leader is effective	علاقتي في العمل مع مسؤولي جد فعالة	Accepted
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TCI12 Members of the team are always searching for fresh, new ways of looking at problems	يبحث الموظفون في الفريق دائمًا عن طرق جديدة لحل المشكلات	Accepted
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Domain 4: Job Demand (JD) متطلبات العمل

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Items	الأسئلة	Comment الملاحظة
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LGO2 - I often look for opportunities to develop new skills and knowledge	غالبًا ما أبحث عن فرص لتطوير مهارات ومعارف جديدة.	Accepted

LGO3 - I enjoy challenging and difficult tasks at work where I'll learn new skills	استمتع بالمهام الصعبة في العمل لأنني سأتعلم مهارات جديدة.	Accepted
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LGO5 I prefer to work in situations that require a high level of ability and talent	أفضل العمل في المواقف التي تتطلب مستوى عالٍ من القدرة والموهبة.	Accepted

نقدر مساهمتكم النبيلة و القيمة، شكرًا جزيلًا على وقتكم.

THANK YOU FOR TIME TAKEN

Le Président du comité EP
A - NOUACER



Signature And stamp

التوقيع مع الختم