

**A Study into the Identification and Application of  
Transformational Leadership Aspects in the  
Petrochemical Industry to Enhance Employee  
Productivity and Innovation**

دراسة حول التعرف على جوانب القيادة التحويلية وتطبيقها في صناعة  
البتروكيماويات لتعزيز إنتاجية وابتكار الموظفين

by

**SAEED ALI AL MANSOORI**

**A thesis submitted in partial fulfilment  
of the requirements for the degree of  
PROFESSIONAL DOCTORATE IN BUSINESS  
ADMINISTRATION**

at

**The British University in Dubai**

**September 2024**

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**Thesis Supervisor**

**Dr Bader Obeidat**

**Approved for award:**

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Name

Designation

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Name

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## **Abstract**

The petrochemical industry is a major contributor to the economy and its workforce plays a vital role in driving productivity and innovation. This study investigates the application of transformational leadership in the petrochemical industry to enhance employee productivity and innovation. A sample of 539 employees working in petrochemical organisations in Abu Dhabi was surveyed, and a structural equation modelling technique was used to test the collected data. The results revealed that transformational leadership has a positive impact on emotional stability, employee productivity, and innovation, but a negative effect on job burnout. Emotional stability has a positive effect on employee productivity and innovation, whereas job burnout has a negative effect on both. Emotional stability and job burnout significantly mediated the relationship between transformational leadership, employee productivity, and innovation. The interaction between contingent rewards and transformational leadership negatively affects emotional stability and positively affects job burnout. This study highlights the importance of implementing transformational leadership practices to enhance employees' emotional stability, productivity, and innovation while reducing the negative impact of job burnout. This study has contextual limitations. Future research could explore the effectiveness of transformational leadership in other industries and use alternative techniques to improve its generalisability.

*Keywords:* transformational leadership, employee productivity, employee innovation, emotional stability, petrochemical industry

## خلاصة

تعتبر صناعة البتروكيماويات مساهماً رئيسياً في الاقتصاد، ويكتسب العاملون فيها أهمية بالغة في تعزيز الإنتاجية والابتكار. تهدف هذه الدراسة إلى التحقيق في تطبيق جوانب القيادة التحويلية في صناعة البتروكيماويات لتحسين إنتاجية الموظفين وابتكارهم. لتحقيق هدف الدراسة تم استطلاع آراء عينة مكونة من 539 موظفاً يعملون في مؤسسات بتروكيماوية بأبوظبي، واستخدام تقنية النمذجة بالمعادلات الهيكلية لاختبار وتحليل البيانات المجمعة. أظهرت النتائج أن القيادة التحويلية لها تأثير إيجابي على الاستقرار العاطفي وإنتاجية الموظفين والابتكار، في حين لها تأثير سلبي على الإرهاق الوظيفي. في حين أظهرت النتائج أن الاستقرار العاطفي يؤثر بشكل إيجابي على إنتاجية الموظفين وابتكارهم، بينما يؤثر الإرهاق الوظيفي بشكل سلبي على كليهما. كما وظهرت النتائج أن الاستقرار العاطفي والإرهاق الوظيفي يتوسطان بشكل ملحوظ العلاقة بين القيادة التحويلية وإنتاجية الموظفين وابتكارهم في حين يؤثر تفاعل المكافآت المشروطة والقيادة التحويلية بشكل سلبي على الاستقرار العاطفي ويؤثر إيجابياً على الإرهاق الوظيفي. تسلط الدراسة الضوء على أهمية تطبيق ممارسات القيادة التحويلية لتعزيز استقرار الموظفين عاطفياً وإنتاجيتهم وابتكارهم، مع تقليل الأثر السلبي لإرهاق الوظيفي. يشير ذلك إلى أنه من المهم للمؤسسات التركيز على تطوير قدرات القيادة التحويلية لدى مدراءها، مع التأكيد على تحسين استقرار الموظفين عاطفياً وكفاءتهم الإنتاجية وقدراتهم على الابتكار. من خلال تبني هذه الممارسات، يمكن للمؤسسات تعزيز قوة عملها وتحقيق نجاح أكبر في مجال البتروكيماويات وصناعات أخرى. علاوة على ذلك تشير الدراسة إلى ضرورة تقييم استراتيجيات المكافآت المشروطة وتفاعلها مع القيادة التحويلية للتأكد من أنها تساهم في تحسين الاستقرار العاطفي للموظفين وتقليل إرهاق الوظيفي. من خلال وضع هذه الاستراتيجيات، يمكن للمنظمات تحسين الرفاهية العامة للموظفين وتعزيز جو من الإنتاجية والابتكار داخل الشركة. بالرغم من مساهمة هذه الدراسة إلا أنها تتضمن قيوداً سياقية حيث يمكن للأبحاث المستقبلية استكشاف فعالية القيادة التحويلية في صناعات أخرى واستخدام منهجيات بديلة لتحسين تعميم النتائج. في المستقبل، يمكن للباحثين النظر في استكشاف العلاقة بين القيادة التحويلية ومتغيرات أخرى. من خلال هذا التوسع في البحث، يمكن للمنظمات والمدراء فهم بشكل أفضل كيفية تطبيق القيادة التحويلية بشكل فعال في سياقات مختلفة وتعزيز الإنتاجية والابتكار لدى الموظفين.

الكلمات المفتاحية: القيادة التحويلية، إنتاجية الموظفين، ابتكار الموظفين، الاستقرار العاطفي، صناعة البتروكيماويات

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## Chapter 1: Introduction

### 1.1. Background

The previous three centuries have witnessed immense fluctuations in the importance of employees in organisations. Before the industrial revolution, traditional organisations preferred task-oriented approaches, where the achievement of manufacturing goals was the only target, irrespective of the condition of employees (Afshari & Hadian Nasab, 2021; Hidalgo-Peñate et al., 2020). There was complete disregard with respect to commitment, engagement, organizational citizenship behaviour, stress, depression, job burnout, creativity, or productivity; rather, the major focus was on attaining organizational goals (Rao, 2017). This situation further deteriorated after the industrial revolution when organisations shifted their manufacturing processes from hand to machines; therefore, the importance of employees was further reduced (Bičo Ćar et al., 2021; Ghislieri et al., 2018; Mayer, 2020).

Conversely, nowadays, modern organisations have completely shifted their approach and highlighted the importance of employees; and even now, employees are considered to be the most valuable assets for organizations (Ghislieri et al., 2018; Rao, 2017). Owing to this, recent scholars have extensively explored the methods, techniques, and ways to improve commitment, engagement, creativity, and productivity while reducing the level of stress, mental exhaustion, burnout, and turnover intention of employees (Afriyie et al., 2019; Afshari & Hadian Nasab, 2021; Alessandri et al., 2018).

Organisations give more importance to employees because they can either make or break the organisation. Gabčanová (2011) noted that employees have been recognised as the most important and significant resource for an organisation's strategic success, in addition to its competitive advantage. This importance of employees leads recent literature to focus rapidly on two important factors, including productivity and innovation, in order

to enhance the overall success, change the shape of the organization, get a competitive advantage, and achieve long-term survival (Kicheva, 2017; Thibault Landry et al., 2017). Both factors are critical in contributing to the success of any organisation. Zuraik and Kelly (2019) noted that there is a continuous process of increasing competition with the passage of time. Petricevic and Teece (2019) argued that globalisation has increased the overall competition of organisations; therefore, to survive in the market, these organisations need to play efficiently and effectively. They are more concerned with achieving maximum outcomes with limited resources; therefore, the significance of employee productivity has increased each day (Malik, 2019).

Likewise, it is widely recognised that the survival of an organisation is possible when it continuously moves with the changing needs of time. Therefore, the process of employee innovation has paramount significance in retaining a position in the market to attract customers and other stakeholders (Liu, 2017; Matsuyama, 2019). However, from another point of view, increasing competition has also increased the possibility of a stressful workforce because the increasing demand for innovation and productivity could instigate pressure on employees to secure their jobs in the organisation. This unending pressure would lead to stress, depression, psychological exhaustion, and burnout (Ismail et al., 2013). Safari, Adelpanah, Soleimani, Aqagoli, et al. (2020) asserted that such stressful and burnout conditions are not only dangerous for employees, but also significantly influence the overall productivity, innovation, and performance of organisations. Therefore, these corporations try to achieve emotional stability of employees so that they can work during a crisis.

A recent pandemic has further increased the pressure on organisations to survive in the market, as well as the pressure on employees to secure their positions or even jobs, while there is more unemployment and less demand. Hamouche (2020) highlighted that COVID-

19 increased the mental stress and emotional pressure on employees, which reduced their productivity and innovation. Therefore, the emotional stability of employees working at the same pace of productivity and innovation is a big challenge for organisations (Zacher & Rudolph, 2021). To deal with such stressful conditions and to enhance the self-efficacy of employees, several researchers have recommended transformational leadership (TL).

Green et al. (2013) found a significant impact of transformational leadership in the healthcare sector and noted that leaders could better tackle nerve-wracking conditions at the workplace by inspiring and motivating employees. Stordeur et al. (2001) argued that TL tries to understand the needs, desires, and wants of employees by interacting with them. The victims of stress, depression, and burnout need psychological and emotional support to retain their level of confidence and motivation (Cheng et al., 2016; Gong et al., 2013; Gong et al., 2020; Weberg, 2010). Importantly, leaders try to provide individual attention to each member of the organization, which makes them realize that they are valuable to the organization (Al-Husseini et al., 2019; Chen et al., 2018; Chiu et al., 2021).

Kloutsiniotis et al. (2022) noted that TL is one of the best leadership models for improving employees' motivation, morale and overall performance with the help of various techniques and approaches. These goals are achieved through a thorough understanding of employees' needs and wants, their strengths and weaknesses, and their level of expertise, which leads transformational leaders to align employees' expertise with the overall goals of the organisations. In addition, TL aligns poor performers with their tasks and employees, which enhances their performance. Similarly, Bormann and Diebig (2021) mentioned that TL aligns the sense of identity of employees with the overall identity of the organisation, which results in increasing employees' perceptions of being valuable and identifiable in the organisation, thus improving their morale and motivation level. Importantly, TL authorises employees regarding their work along with attaching

particular responsibilities, which further improves the overall performance of employees because they consider themselves to be responsible for their authorized tasks (Molines et al., 2022)

In addition to transformational leadership, other types of leadership, especially transactional leadership, try to achieve organizational goals, commitment, and engagement of employees by offering them rewards and punishment. Similarly, transformational leadership can attach rewards with certain kinds of behaviours, performance, or goals achievement, which are the source of motivation and acknowledgement for employees (Basińska & Wilczek-Rużyczka, 2013a; Dockstader et al., 1978). The social cognitive theory states that individuals learn through imitating others (Bandura, 1986). Employees who perform better receive appreciation, acknowledgement, and rewards, which proved to be an example for other workers who also try to achieve similar success to obtain these rewards. Therefore, employees remember the sequence of processes and outcomes of good performance or certain types of behaviour to achieve organizational rewards (Yamaguchi & Nishimura, 2019).

Molines et al. (2022) asserted that TL not only inspires and motivates employees by acting as a role model, but also uses a contingent rewards policy, where performance, productivity, and completion of tasks are attached to some rewards, thus motivating employees to perform with more commitment and motivation. Therefore, leadership plays a significant role in enhancing the emotional stability of employees along with preventing them from burnout. Previous scholars have also presented strong evidence that TL has a special role in enhancing the overall performance of the organization (Arif & Akram, 2018). Specifically, organisations are increasingly concerned about transformational leadership in the UAE context.

Rao and Abdul (2015) noted that UAE is considered one of those countries which are consistently focusing on their innovation and increasing competitive advantage. Therefore, organisations need to enhance the capabilities of their employees and manage their stressful environments to gain a competitive advantage. An important contribution is made by Awamleh et al. (2005) in the context of UAE, and they found that transformational leadership has a significant role in increasing the innovation capabilities of employees through managing their emotions and increasing their engagement as well as commitment. Thus, the overall turnover rate also decreased. Conversely, Alshehhi et al. (2019) have contended that turnover rate in UAE is increasing owing to rapidly increasing competition among organizations, and their considerations for competitive, emotionally stable, innovative, and productive employees. The authors suggested implementing transformational leadership to overcome turnover rates.

## **1.2. Problem Statement**

The world has made significant strides in recovering from the devastating impacts of the COVID-19 pandemic (Ebekozen et al., 2023). According to recent studies, the global economy has shown resilience and adaptability, bouncing back from an estimated 3.4% loss in 2020 (Statista, 2023b). The tourism sector, which was projected to face a loss of trillion dollars with declining tourist arrival by 74% (UNCTAD, 2023), has also shown signs of recovery, with countries reopening their borders and reviving their tourism industry (UNCTAD, 2022). Advanced economies, which were predicted to shrink by approximately 7% in 2020, have demonstrated robust recovery strategies, leading to economic growth and stability (World Economic Forum, 2023).

In the UAE, the economy, which shrank by around 6.1% in 2020 (Reuters, 2021), has seen a significant turnaround. This recovery was bolstered by the successful hosting of the Dubai Expo, which took place from October 2021 to March 2022 (Brownlee, 2021). The

Expo had a positive impact on the UAE's economy, with increases of 3.1% in 2021 and 2.6% in 2022 (Hill et al., 2022). The event brought in tourism and Foreign Direct Investment (FDI), enhancing the benefits of such events and increasing the demand for products and services across the UAE, especially in Dubai and Abu Dhabi. However, despite the recovery from the pandemic, the Russian attack on Ukraine has been negatively influencing the world economy, and it is predicted to further slow down in the coming years (Statista, 2023a). Therefore, the need for innovation and productivity enhancement remains of paramount importance. Organisations are required to innovate and enhance their productivity to maintain competitive advantage. Therefore, it is crucial to study the different predictors of productivity and innovation among employees and the methods to enhance these variables.

Unfortunately, to the best of our knowledge, no recent study has highlighted the importance of productivity and innovation in the current scenario. Apart from the above, some scholars believe that the upcoming vision of Abu Dhabi 2030 will have a significant influence on the economy of Abu Dhabi as well as the entire UAE (Dakrory, 2023; Turner, 2021). Turner (2021) found that UAE is investing around \$3 billion annually in its innovation projects, which makes it one of the most innovation-oriented countries in the world. Such increasing benefits, as well as the recovery period of the pandemic, have increased overall competition among organisations. Organisations, particularly in high-stakes sectors like petrochemicals, are rapidly becoming involved in enhancing employee productivity and innovation to maintain operational efficiency and global competitiveness (Davidson, 2010; Poorabdian et al., 2013). This aligns with Abu Dhabi's strategic focus on innovation under Vision 2030, which emphasises the role of employee-driven productivity in fostering economic resilience (Dakrory, 2023; Turner, 2021).

Although no recent scholar has studied both productivity and innovation in the context of petrochemical industry, Lei et al. (2020) noted that transformational leadership can play a significant role in enhancing the innovation capabilities of employees. In the petrochemical industry, where tasks are often complex and require high levels of safety and precision, transformational leadership is particularly relevant. Leaders with transformational qualities can foster an environment conducive to innovation and productivity, as these industries rely heavily on adaptive and proactive workforces to meet global energy demands (Hassani et al., 2017; Li, 2016). Studies indicate that TL is effective in such environments by promoting a shared vision and enhancing employee engagement (Putra et al., 2020). Similarly, H. Khan et al. (2020b) have noted that transformational leadership can also increase the productivity of employees. However, due to the high demands for innovation and operational excellence, employees in the petrochemical sector may face heightened emotional strain and burnout. These challenges are exacerbated in safety-critical industries where decision-making and performance under pressure are paramount (Huang et al., 2012). Emotional stability, a trait linked to resilience and adaptability, plays a crucial role in mitigating stress and fostering productivity and creativity in such settings (Koch & Adler, 2018; Alessandri et al., 2018). Therefore, it is also important to examine the effects of transformational leadership to increase emotional stability and decrease the level of job burnout. Kloutsiniotis et al. (2022) have studied the role of job burnout during COVID-19; therefore, they noted that transformational leadership is one of the best solutions to mitigate the burnout condition of employees during a stressful situation. Similarly, Tsang et al. (2022) found that TL has a negative impact on job burnout; therefore, it is especially useful during a crisis. Furthermore, TL is also best suited to provide emotional stability to employees during such situations (Baba et al., 2021).

As transformational leadership inspires and motivates employees, contingent rewards can amplify these effects by recognizing individual contributions and reinforcing desired behaviors. While some studies suggest that contingent rewards enhance employee outcomes by fostering motivation (Saether, 2020), their interplay with intrinsic motivation in high-pressure environments like petrochemicals remains underexplored (Yamaguchi & Nishimura, 2019). Despite extensive research on TL's general impact, studies addressing its specific role in safety-critical and innovation-driven sectors like petrochemicals are sparse. Similarly, while TL's influence on burnout and emotional stability has been established (Kloutsiniotis et al., 2022; Baba et al., 2021), its indirect pathways through these variables to productivity and innovation remain insufficiently examined. Moreover, the moderating role of contingent rewards in such high-stakes contexts is yet to be fully understood, making this investigation timely and crucial. Thus, the need of the hour is to examine the effects of transformational leadership in increasing employees' productivity and innovation in the mediating role of emotional stability and job burnout while considering the moderating effects of contingent rewards.

### **1.3. Research Questions**

The following research questions were developed based on the problem statement.

1. What is the effect of transformational leadership on emotional stability, job burnout, employee productivity, and innovation?
2. What are the effects of emotional stability and job burnout on employee productivity and innovation?
3. What is the mediating role of emotional stability in the relationship between transformational leadership and employee productivity?
4. What is the mediating role of emotional stability in the relationship between transformational leadership and innovation?

5. What is the mediation role of job burnout between transformational leadership and employee productivity?
6. What is the mediating role of job burnout on transformational leadership and innovation?
7. What is the moderating effect of contingent reward on the relationship between transformational leadership and emotional stability?
8. What is the moderating effect of contingent reward on the relationship between transformational leadership and job burnout?

#### **1.4. Research Aim and Objectives**

The main purpose of this study is to examine the impact of transformational leadership on employee productivity and innovation in the mediation role of emotional stability and job burnout. It also aimed to investigate the moderating effects of contingent rewards on the relationship between transformational leadership and emotional stability as well as job burnout. Based on the problem statement and aim of this study, the research objectives are as follows:

1. To evaluate the direct effects of transformational leadership on emotional stability, job burnout, employee productivity, and employee innovation.
2. To examine the impact of emotional stability and job burnout on employee productivity and innovation.
3. To analyse the mediating role of emotional stability between transformational leadership and employee productivity as well as employee innovation.
4. To evaluate the mediating role of job burnout between transformational leadership and employee productivity as well as employee innovation.
5. To investigate the moderating effects of contingent rewards on the relationship between transformational leadership and emotional stability as well as job burnout.

### 1.5. Gap and Significance of Study

Previous scholars have conducted a lot of studies to explore transformational leadership, job burnout, and innovation (Karimi et al., 2023; Rafique et al., 2022; Zhang et al., 2022); however, productivity, emotional stability, and contingent rewards have limited evidence. In the context of process industries like the petrochemical sector, recent studies often overlook how transformational leadership influences employee outcomes, especially productivity and innovation, in environments characterized by high stress and operational complexities (Hassani et al., 2017; Lei et al., 2020). In addition, these variables are studied individually, but there is a lack of evidence regarding the relationship between these variables in one model. This lack of integration is particularly evident in the petrochemical industry in the UAE, where unique cultural, organizational, and operational factors necessitate a comprehensive model to better understand the interplay of leadership styles, employee well-being, and performance outcomes (Al Mansoori et al., 2020; Turner, 2021). Among these variables, few relationships have been proven. For instance, H. Khan et al. (2020b) evaluated the impact of transformational leadership on performance and burnout and recommended utilizing emotional stability for future studies. However, these studies primarily focus on generic industrial contexts and fail to account for the specific demands of process industries like petrochemicals, where high-pressure work environments significantly impact employee productivity and well-being (Davidson, 2010; Li, 2016). This study also recommends the moderating effects of contingent rewards.

Similarly, Ratnaningtyas et al. (2021) have examined the effects of transformational leadership on productivity. The effects of transformational leadership on innovation are evaluated by Tănase (2020). Despite extensive literature on transformational leadership, there is a lack of evidence regarding the impact of transformational leadership on employees' emotional stability. Previous studies have focused on the relationship between

TL and the emotional intelligence of leaders, not employees. This gap was filled in the current study. Furthermore, while prior research addresses leadership's role in innovation (Tănase, 2020), there is a scarcity of evidence exploring these relationships within the petrochemical sector in Abu Dhabi, a critical hub for global energy production and technological advancements (Dakrory, 2023).

In addition, to the knowledge of the researcher, previous studies lacked evidence regarding the mediation effects of emotional stability between transformational leadership and productivity, which was covered in this study. This study also fills the gap in the mediation relationship of emotional stability between transformational leadership and innovation. Apart from this, there is a lack of evidence regarding the mediation effects of job burnout between transformational leadership and employee productivity; therefore, the current study fills this gap as well. Moreover, the mediating role of job burnout between transformational leadership and innovation was also tested in this study, which is lacking in previous studies. Given the high-stress nature of petrochemical operations, understanding how job burnout mediates these relationships provides industry-specific insights that extend beyond generic organizational contexts (Hassani et al., 2017; Poorabdian et al., 2013). Furthermore, the moderating effects of contingent rewards on the relationship between transformational leadership and emotional stability, as well as on the relationship between transformational leadership and job burnout, have not yet been explored; therefore, this gap is also filled. This study also has a contextual contribution because it was conducted in Abu Dhabi in the petrochemical industry, which is a gap in the literature.

Apart from the above, the current study also contributed in terms of practical implications. This study may serve as a guide for policymakers, management, and academics. Policymakers can form strategies to enhance the effectiveness of

transformational leadership to increase emotional stability and decrease job burnout. This study provides important insights into how transformational leadership enhances employees' emotional stability, which is significant for increasing their productivity and innovation. It also provides insights into the aspects of transformational leadership that decrease job burnout, which increases productivity as well as innovation. Based on the above-mentioned literature and gaps, it can be concluded that the current study has both theoretical and contextual contributions, which may prove beneficial for management, employees, leadership, and future researchers.

### **1.6. Structure**

The first chapter highlights background information about the variables, problem statements, objectives of the study, research questions, and significance of the study.

The second chapter provides a detailed literature review of all the study variables, highlighting their definitions, types, importance, predictors, and outcome variables. The second chapter includes three different theories and their connections to explain the study variables.

In the third chapter, the theoretical framework is evaluated, and the relational literature on all variables is explained. This chapter also develops the hypotheses of this study, followed by a conceptual model.

In the fourth chapter, the researcher explains all the methods, techniques, and tactics used in the current study, including the research design, data collection, data analysis, and measurements. After four chapters, the researcher proposes the content for further chapters.

### **1.7. Operational Definitions**

The operational definitions here are used to highlight how all the variables incorporated in this study are used and how each variable is related to the other variables in

the context of this study. The operational definitions of all variables used in this study are as follows.

*Transformational leadership:* With respect to operationalisation in this study, transformational leadership reduces stress levels, inspires individuals, and motivates them regarding their self-efficacy; therefore, it increases the level of emotional stability, productivity, and innovation, while reducing the level of job burnout.

*Emotional Stability:* Emotional stability, in this study, refers to stability during a crisis, resilience, and performance at the same pace of productivity in a toxic situation, which results in a high level of productivity and innovation.

*Job Burnout:* It Psychological or physical exhaustion results in a low level of commitment and engagement; therefore, the productivity of employees decreases, in addition to decreasing their level of innovation.

*Employee Productivity:* The efficiency and effectiveness of employees in performing well with limited resources. In this study, it refers to the enhancement of employees' efficiency as a result of transformational leadership and emotional stability, while also resulting in enhancement after decreasing the level of job burnout.

*Employee Innovation:* It refers to the increase in new and creative ideas among employees and their efforts to implement these ideas. In this study, transformational leadership resulted in a high level of innovation. Owing to the increasing level of emotional stability and decreasing level of job burnout, innovation will increase.

*Contingent Rewards:* These rewards are attached to the performance or specific behaviours of employees. In the current study, transformational leadership utilised contingent rewards to enhance emotional stability, employee productivity, and employee innovation while reducing the level of job burnout.

## 1.8. Chapter Summary

Owing to increasing demand, competition, and globalisation, organisations are striving for a higher level of production along with innovation. Although the pandemic has caused great losses worldwide, a recovery period has started. Dubai Expo and certain other projects have increased the importance of the UAE, which will enhance the demands and competition for organizations. For this purpose, the productivity of employees and their innovation capabilities must be enhanced. However, a stressful environment results in a decrease in emotional stability and enhanced burnout. Scholars believe that transformational leadership can overcome such situations by inspiring and motivating employees. For this purpose, the tool is often used as a contingent reward, where rewards are attached to specific goals, achievements, behaviours, or task accomplishments. This would be beneficial for employees to overcome these conditions. Therefore, this study aimed to investigate the effects of transformational leadership on employee productivity and innovation by reducing burnout and increasing the level of their emotional stability. It also analyzes the moderating effects of contingent rewards on the relationship between transformational leadership and emotional stability as well as job burnout.

In this chapter, the researcher covers the background of the study, highlighting the importance and significance of the variables and their brief connections. This chapter also covered the problem statement of the study which highlights the need for the study. This chapter lists all the research objectives and research questions, followed by elaborating on the significance of the study. Finally, this chapter provides the operational definitions and structure of the study.

## **Chapter 2: Literature Review**

### **2.1. Introduction**

This chapter explores existing literature with respect to the current study variables. Specifically, it highlights the definitions, types, characteristics, and importance of variables. Apart from this, it acknowledges previous contributions and highlights the shortcomings of previous studies. Finally, each variable is explored separately in different sections.

### **2.2. Transformational Leadership**

Some scholars have deeply explored the theory of transformational leadership (TL) from various dimensions, including its definition, necessary factors to contribute, its characteristics, predictors, and outcome variables (Guillory, 2023; Malloy & Kavussanu, 2021; Voelkel Jr, 2022). However, there is no consensus among scholars on a single definition. Seltzer et al. (1989) defined it as a theory of leadership in which leaders try to identify the necessary change among followers, create a vision for them, inspire them and then implement the necessary change with the help of members of the organization. Bass and Avolio (1990) noted that TL encourages followers to innovate and create something useful for the organization, while Leithwood and Jantzi (2005b) asserted that TL includes those leaders who lead followers through example and as role models.

Another important definition is provided by Bass and Steidlmeier (1999), who note that TL highlights and identifies the potential development of followers and their real intellectual capability to provide a useful, creative, and innovative contribution to the organisation. Thus, based on the above definitions, a comprehensive definition can be generated, which may state that TL is a theory of leadership where leaders identify the needed change, potential capability, and intellectual capacity of followers beyond their interests, create a vision for followers, and inspire them by presenting themselves as role

models, followed by implementing the necessary change with the help of committed members of the organisation.

TL not only provides the vision to do something useful, but also provides autonomy to perform activities. This autonomy creates a sense of valuableness among employees for their organization, as well as a sense of responsibility through achievements (H. Khan et al., 2020b). The potential of employees is highlighted, which is commonly beyond their apparent capabilities (Islam et al., 2021). Asbari (2020) noted that TL enhances the morale and confidence of followers in the organisation, which helps them work with their inherent capabilities. This inspiration and motivation increase their creativity, productivity, knowledge-sharing capabilities, self-efficacy, and commitment to the organization (Bass, 1999; Ekmekci et al., 2021; N. A. Khan et al., 2020; Ratnaningtyas et al., 2021).

### ***2.2.1. Models to Measure Transformational Leadership***

Transformational leadership has been studied extensively and measured using various models. Notably, N. Muenjohn and Anona Armstrong evaluated the structural validity of the Multifactor Leadership Questionnaire (MLQ), a widely used instrument for measuring transformational-transactional leadership. Their study confirmed that the Full Leadership Model, a nine-correlated factor model, adequately captures the constructs of transformational-transactional leadership (Muenjohn & Armstrong, 2008). Azman Ismail and colleagues focused on two salient characteristics of transformational leadership: intellectual stimulation and individualized consideration. Their research revealed that these characteristics indirectly affect job performance through empowerment (Ismail et al., 2009).

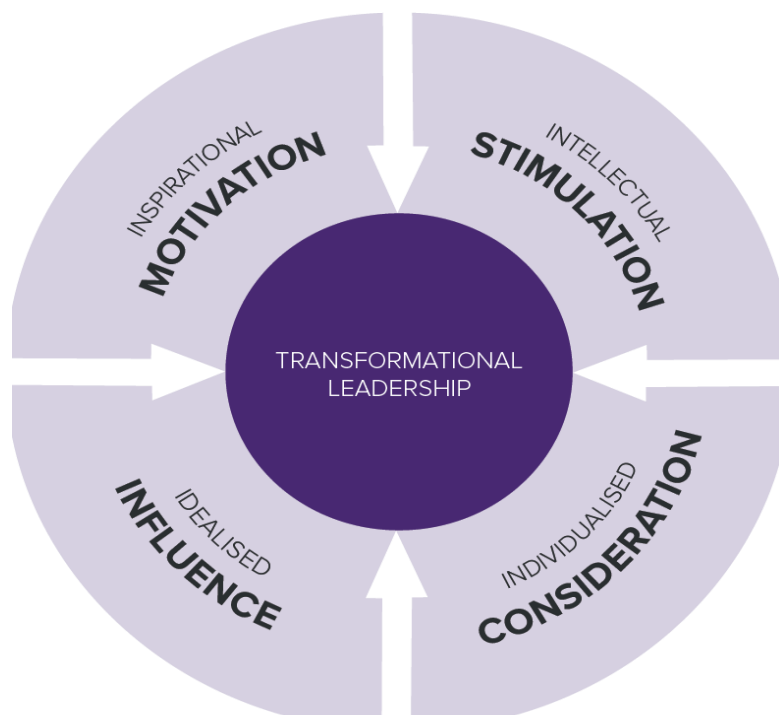
T. Bush compared instructional and transformational leadership models, noting that transformational leadership is mainly about how leaders exert influence on followers (Bush, 2014). Apart from above, Y. Deng and his team examined the role of environment-

specific transformational leadership (ESTL) in the relationship between a hospital's corporate social responsibility (CSR) initiatives and the pro-environmental behaviours of hospital employees (Deng et al., 2022).

Van Knippenberg and Sitkin (2013) examined and highlighted the charismatic dimension of TL and found that employees idealize such leaders and try to follow them, considering them to be a perfect role models. Podsakoff et al. (1990) proposed a seven-item model to measure TL. These seven items include (1) articulating the vision, (2) the development of the staff, (3) supporting employees at the individual level, (4) empowerment, (5) innovative thinking, (6) leading by example, and (7) charismatic leadership. Similarly, Carless et al. (2000) developed a short model comprised of three dimensions, including manager performance, leader effectiveness, and extra subordinate effort, to measure transformational leadership. Apart from this, various other models were proposed by scholars to measure it (Jung et al., 1995; Kouzes & Posner, 1990). All of these models propose some common behaviours of such leadership, which are presented below.

#### ***2.2.2. Four Types of Behaviours of Transformational Leadership***

Previous scholars have commonly identified four kinds of behaviours that are involved in TL (Agyemang et al., 2017; Hosna et al., 2021; Khan et al., 2022) ([see figure 2.1](#)). Firstly, inspirational motivation is when leaders inspire intrinsically and extrinsically to their followers to achieve their goals and objectives, which are overall helpful in achieving organizational goals (Shafi et al., 2020). Le (2020) noted that TL inspires their followers by primarily understanding them, their desires, needs, and wants to help them highlight the change for their benefit. In other words, Buil et al. (2019) asserted that inspirational motivation could be created by making individuals realize what the benefit is of adopting change or getting improvement in their capabilities, skills, and abilities.

**Figure 2. 1***Four Behaviours of TL*

*Note.* This figure is generated by Shvets (2019)

Second, transformational leaders provide ‘idealised influence’, where leaders influence their followers by providing them with a role model or example (Koveshnikov & Ehrnrooth, 2018). Commonly, these targeted followers are supported and provided with help in a way that fulfils their needs. They consider their leaders helpful in achieving their goals and providing useful assistance (Linge & Sikalieh, 2019). Thirdly, transformational leaders’ behaviour includes intellectual stimulation, where followers are encouraged to think on their own to enhance their abilities, overcome their weaknesses, and achieve their desired goals (Boukamcha, 2019; Rodriguez et al., 2017).

In intellectual stimulation, leaders tolerate the mistakes of their followers, encourage them to innovative ideas and provide them autonomy in order to enhance their mental capability and extract hidden ideas (Kotamena et al., 2020). In this way, they

enhance their confidence regarding their contribution to the organisation; therefore, their perception of being valuable in the organisation further encourages them to perform better, thus breaking obsolete practices and encouraging innovative notions. Finally, transformational leaders believe in individualised consideration, where they individually establish a strong relationship with their followers, identify their needs, and help them accordingly (Cahyono et al., 2020; Ding & Lin, 2020).

### ***2.2.3. Predictors and Outcome Variables of Transformational Leadership***

Many scholars have identified multiple predictors and outcome variables of transformational leadership. Katou (2015) and Arif and Akram (2018) have found that transformational leadership has a strong positive impact on enhancing the performance of the organization. They noted that these leaders transform the necessary changes in their followers, which encourages employees to adopt new ideas and perform to their full potential for the welfare of their organisation. Similarly, it is widely accepted that transformational leadership is strongly related to employee engagement and commitment (Ghafoor et al., 2011; Gyensare et al., 2017; Moyo, 2019). As TL increases the intrinsic and extrinsic motivation of employees, they are more tend to perform better in the organization, which results in high appreciation and acknowledgement within the organization; thus, leads to emotional and psychological attachment to their organization (Boukamcha, 2019; H. Khan et al., 2020b).

Also, some other scholars have noted that transformational leadership can increase their overall performance, organizational citizenship behaviour, innovation, creativity, knowledge sharing, openness, competitive advantage, team effectiveness, motivation, and employee championing behaviour (Hadi & Tola, 2019; Islam et al., 2021; Jiang et al., 2017; Mahmood et al., 2019; Waruwu et al., 2020; Yue et al., 2019). On the other hand, transformational leadership can reduce turnover intention, job burnout, stress, depression,

disloyalty, conflict, impaired wellbeing, and stagnant growth of employees (Kammerhoff et al., 2019; Vincent-Höper et al., 2017; Xian et al., 2020).

Similarly, some predictors of transformational leadership result in increasing or decreasing TL. Galian (2021) noted that extraversion is a strong predictor of transformational leadership. The author further noted that TL is always concerned with strong individualised relationships with employees; therefore, the extraversion characteristic helps individuals effectively establish social bonding with employees. However, other scholars have not found extraversion to be a strong predictor of transformational leadership. For instance, Prochazka et al. (2018) found a weak correlation between the extraversion trait and transformational leadership. Chiu et al. (2021) have found that both agreeableness and extraversion have a positive impact on transformational leadership; however, agreeableness has a stronger impact on TL. Similarly, another important contribution by Handoyo and Hidayat (2021) noted that openness to experience is a significant predictor of transformational leadership.

Vasilagos et al. (2017) proposed that emotional intelligence can enhance transformational leadership in the organization, which results in a high level of overall organizational performance and competitive advantage, while Kark et al. (2018) identified self-regulation as a predictor of transformational leadership. Caniëls et al. (2018) and Han and Stieha (2020) stated that the growth mindset of leadership is also a significant predictor to enhance transformational leadership. Thus, based on these findings, it can be concluded that transformational leadership has positive employee outcomes and can be promoted through strong mental and psychological capabilities.

### **2.3. Employee Productivity**

Owing to globalisation, the competition of organisations has greatly increased, which has increased the significance of obtaining maximum output by putting limited

input, which researchers term as productivity of employees in an organisation. To gain a competitive advantage and survive in the market, organisations try to satisfy their stakeholders, including shareholders, employees, suppliers, and consumers. Therefore, maintaining a competitive advantage, along with increasing products and services, is crucial for an organisation, which cannot be achieved without productivity (McNeese-Smith, 1996). Sickles and Zelenyuk (2019) defined it as the efficiency of the production of goods and services, which is calculated with the help of some measures, especially comparing the actual output with set standards.

Cusolito and Maloney (2018) noted that productivity is effectiveness, which is measured in terms of output per input. Similarly, Plag (2020) asserted that productivity is the ratio of output to input. Based on the aforementioned definitions, it can be concluded that productivity is the efficiency and effectiveness of producing goods and services, which is measured as the output per unit of input. The overall productivity of an organisation or the productivity of employees is measured within a specified period, where the output is compared with the invested input (Drucker, 2018). Importantly, these inputs are usually considered in the form of labour, material and other fixed as well as variable expenditures (Sichel, 2019).

Increasing productivity not only proves to be beneficial for the organization but also for employees and shareholders to enhance their overall wellbeing. Significantly employees' promotion, demotion, and performance are often decided based on their productivity (Plag, 2020; Sichel, 2019). Apart from this, organisations try to achieve maximum productivity to enhance their products and services, which in turn leads to higher satisfaction of consumers to enhance their sales or revenues. This enhancement is directly linked to the increased profits of the organisation, as productivity improves the utilisation of limited inputs to obtain maximum outputs (Cusolito & Maloney, 2018;

Drucker, 2018; Sickles & Zelenyuk, 2019). As the major purpose of an organization is to maximize the wealth of shareholders; therefore, increasing profits lead to increasing more profits distribution, timely payments, less turnover, more competitive advantage, and an increasing level of consumers satisfaction (Hanaysha & Majid, 2018; Rodriguez & Walters, 2017).

### **2.3.1. *Types of Productivity***

Primarily, researchers have identified two kinds of productivity: partial and total (Craig & Harris, 1973; Hannula, 2002; Windle & Dresner, 1992). In partial productivity, further division is involved, including labour, capital, material, machine, and personnel (*see figure 2.2*). Hannula (2002) noted that partial productivity is related to the measurement of productivity based on the comparison of output with single input like material, labour, or capital. On the other hand, multifactor or total productivity is measured in terms of overall and total productivity, where organisations compare the total output with total inputs, such as material, labour, or capital (Craig & Harris, 1973).

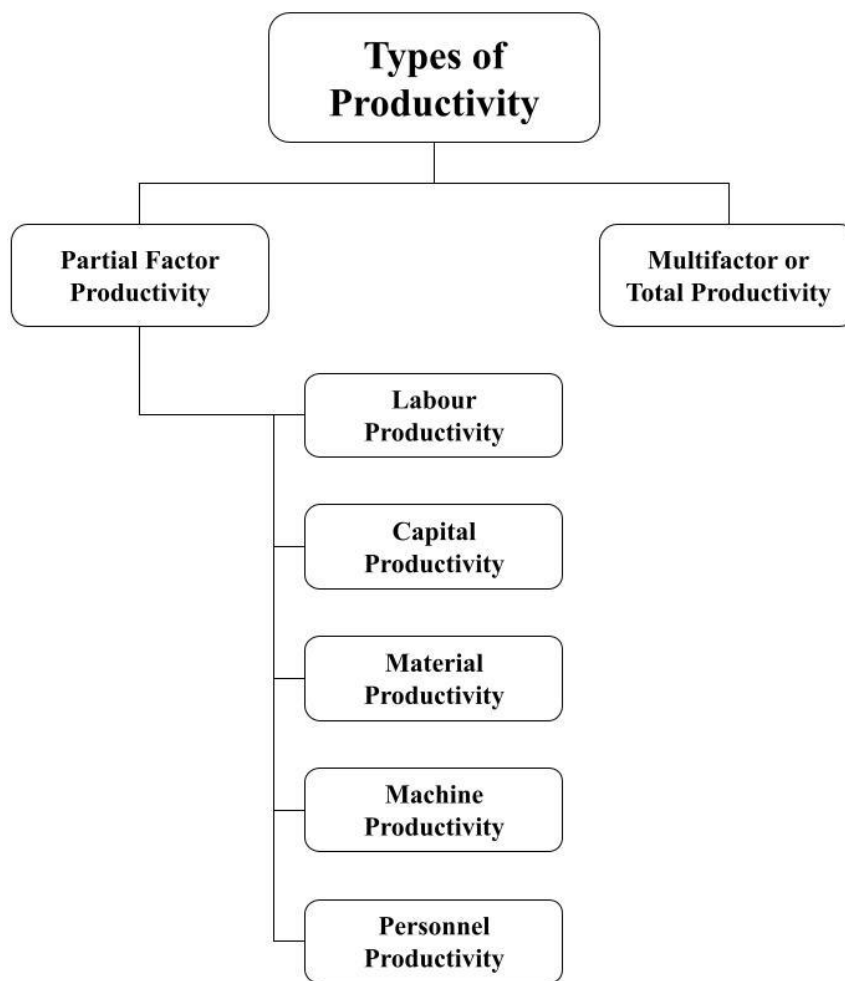
First, partial productivity includes labour productivity, where organisations measure the total output generated by a single labour or person or the output generated by a single person in one hour (Verdoorn, 2002). Previous scholars have proposed different methods and ways to increase labour productivity. Sotskov et al. (2006) proposed that there must not be a blockage from the start of the assembly line to the end of finished goods in order to enhance the productivity of labour. In this case, the reallocation of labour or redefining is prominently beneficial. In addition, workers can be reallocated based on their work requirements and skills, considering rotation and removing bottlenecks (Golnaraghi et al., 2019; Gomez-Salvador et al., 2006).

Labour productivity is also measured in terms of the environment, which is termed green human resource management, where policies, standards, and practices are decided to

ensure the green behaviour of employees or workers (Mousa & Othman, 2020; Peng, 2020). Second, in partial productivity, capital productivity is significant when output is measured against invested capital. Different assets are utilised to generate goods or services, which require the purchase of capital. Therefore, obtaining the maximum output from these assets is considered vital for improving output based on invested capital. For this purpose, management often ensures to use of assets at their maximum capacity, particularly the machines of an organization (S. Chen et al., 2019; Eleyae, 2021).

**Figure 2. 2**

*Types of Productivity*



*Note.* This figure is generated by the author.

Similarly, partial productivity is measured in terms of material productivity, where both direct and indirect materials are compared to the generated output (Fernández-Herrero & Duro, 2019). In other words, how much direct and indirect raw material is used to produce one unit. It can also be measured in terms of per unit cost of material (Fernández-Herrero & Duro, 2019; Ratnaningtyas et al., 2021). The next important type of partial productivity is machine productivity, which Lopes et al. (2021) suggested by comparing the total output with the number of machine hours. Finally, personnel productivity excludes those workers who directly work on machines and work on other tasks to support the production of goods and services, such as employees working in the finance and marketing departments (Daneshmandi et al., 2017).

For such people, direct measures are not feasible; rather, indirect measures are adopted to measure their performance on goals and objectives. Conversely, total productivity, as mentioned above, comprises a comparison of the total output with total input. Previous researchers have majorly worked on total productivity, where training has paramount significance in enhancing multifactor productivity (Kaydos, 2020; Tiruvengadam et al., 2021). However, it is important to note that this study is particularly relevant to employee productivity rather than overall organizational productivity. Therefore, labour and personnel productivity are the most relevant among the above-mentioned types.

### ***2.3.2. Predictors and Outcomes of Employee Productivity***

There is extensive research available to highlight the predictors as well as outcome variables of productivity. For instance, Angioha et al. (2020) conducted a study explored the effects of different predictors of information technology on employee productivity. They found that knowledge of information technology, its frequency of usage, and management support for using information technology help increase employees'

productivity, especially in firms regarding information technology. Khan (2018) explored the effects of training and employees' commitment on their productivity. They found that these two factors strongly predict a high level of productivity. Another important contribution recently made by Russo et al. (2021) identified the predictors of employees' productivity in the context of COVID-19, where employees working from home may have some psychological, social, and economic factors that impact their productivity. However, they focused on psychological factors and found that stress, distraction, anxiety, and physical needs have a negative impact on employees' productivity; however, work motivation has a positive impact owing to the freedom of remote working.

Furthermore, Diah et al. (2020) have considered both social and economic indicators and their impact on employees' productivity. These authors found that an effective social environment of the workforce and economic facilitation, as well as improvement in employees' economic well-being, enhances their productivity; in particular, the rewards system has a strong positive impact on workers' productivity. Apart from the above, various scholars have identified different predictors, including employee engagement (Mani & Nadu, 2011), transactional and transformational leadership (Peters, 1997), organizational and individual strengths (Stander et al., 2014), organizational support (Church, 1995), employees' motivation and job acknowledgement (Shahzadi et al., 2014), and job facilities (Alam et al., 2020; Groen et al., 2019).

Apart from the above, many outcome variables are also identified regarding employees' productivity. Primarily, productivity can be achieved by maximising the production of goods and services and lowering the cost of products or services. In other words, limited inputs may generate a higher level of output (Singh, 2000). Drucker (2018) asserted that employees' productivity not only ensures the enhancement of maximum gain, but also helps an organisation minimise its overall cost. In other words, maximising output

with minimum input lowers the cost of an organisation's products and services, thus leading to more profits and competitive advantage.

Krekel et al. (2019) conducted a study to investigate the impact of employee wellbeing and productivity on organizational performance and found that the productivity of employees has a strong positive impact on organizational performance in terms of increasing sales, more customer satisfaction, lower cost of production, and growth of profitability. In addition, Ekhsan et al. (2019) noted that lowering the cost of production and increasing output from limited input can provide a strong competitive advantage to the organisation. Skelton et al. (2019) have highlighted the negative influence of employees' higher productivity on their turnover intention.

They found that, owing to higher productivity, the organisation provides more support, facilities, and rewards to employees, which in turn helps employees retain or increase their productivity and reduce the overall turnover rate. They also pointed out that productivity also ensures the job security of employees as organizations do not lose productive employees but rather prefer to retain them either through financial or non-financial motivation and rewards (Hannula, 2002; Plag, 2020; Stander et al., 2014). Based on these previous studies, it can be concluded that employees' productivity has vital and paramount significance in the organisation; therefore, organisations try their best efforts to enhance the predicting variables to enhance organizational performance, lower the turnover rate, and increase organizational competitive advantage.

#### **2.4. Employee Innovation**

Traditional organizations were not much flexible with innovative practices, and also there was not much demand for change; however, with the passage of time, organizations have observed rapid changes in consumers' preferences (Chen et al., 2017).

Even today, consumer preferences change every passing day, which creates a more challenging and competitive workplace (Cefis & Marsili, 2019).

Organisations are now striving to cope with changing needs over time. Globalisation has further increased this competition; therefore, to survive in the market for a long period, organisations need to adjust to the changing preferences of customers, which requires a continuous process of creativity and innovation (Ortiz-Villajos & Sotoca, 2018). Klimas and Czakon (2022) has defined innovation as a function of entrepreneurship, where entrepreneurs implement his/her ideas in an organization or business. He further noted that innovation involves both creating something new and increasing the potential of existing products or services in a novel way; thus, innovation is specifically related to entrepreneurship. Similarly, Callegari and Nybakk (2022) defined it as a new idea or notion which is considered new by a community, group of people, or people who may adopt and implement that idea.

#### **2.4.1. *Employee Innovation vs Creativity***

Importantly, some believe that innovation and creativity are two names of the same thing. Although many scholars have used creativity and innovation interchangeably, there is a difference between them. Amabile and Pratt (2016) provided useful contributions in distinguishing creativity and innovation. They noted that creativity is the process or activity in which new ideas or notions are produced. However, innovation is specifically related to the implementation of these ideas into reality. Similarly, Liao and Tsai (2019) assert that creativity is related to the mental state of creating ideas, while innovation is specified by the implementation of new and creative ideas.

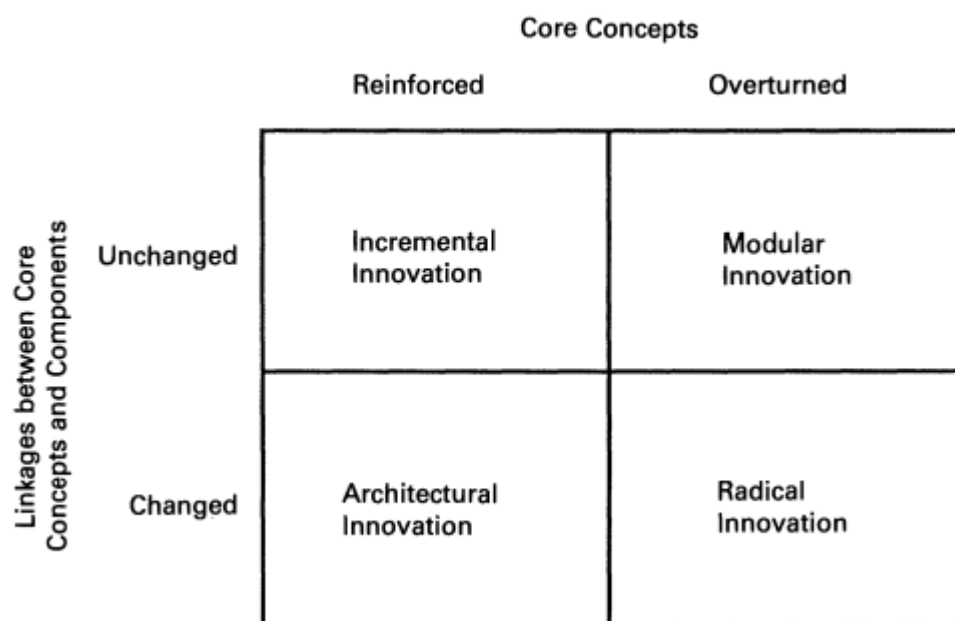
#### **2.4.2. *Types and Dimensions of Employee Innovation***

With respect to the types of innovation, various scholars have proposed frameworks or models which differentiate between different kinds of innovation. For instance, Bower

and Christensen (1996) provided a model in which two kinds of innovation are highlighted: sustaining and disruptive. They stated that sustaining innovation is related to an existing product or market, where entrepreneurs make some changes in the existing product or market in accordance with the changing needs and preferences of customers. However, in disruptive innovation, entrepreneurs introduce new products or services and generate a new market. This later type of innovation is specifically related to long-term policies and practices of the organizations; however, the first type is related to short-term changes; thus, it continues according to the changing needs of consumers (O'Neill et al., 2022).

**Figure 2. 3**

*Types of Innovation*



*Note.* This figure is generated by Henderson and Clark (1990)

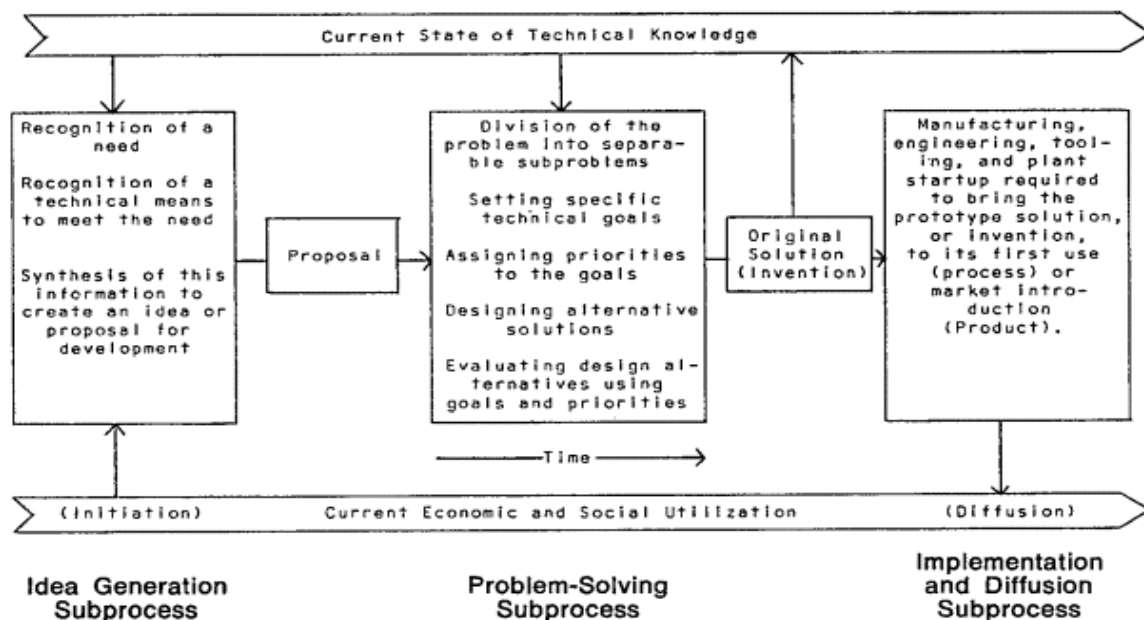
Similarly, Henderson and Clark (1990) provided a framework to distinguish between different types of innovation (*see figure 2.3*). The authors have provided four types of innovation, where incremental innovation is related to the established design, and

organisations improve the existing design of a product or add more features. Importantly, the core functions or design remain the same; however, some components are either changed or improved in accordance with the changing preferences and needs of the consumers. In the second type, which is architectural innovation, the interaction among components is changed while keeping the core design the same. The third type, termed modular innovation, leads to changing the core concepts' design; however, maintaining the same linkage of core concepts and components. Finally, radical innovation leads to new design and core concepts along with changes in architectural design.

With respect to different dimensions, Khan et al. (2021) have highlighted two dimensions of innovation that businesses consider while going for innovation. First, the degree of innovation highlights whether the organisation is developing a new product, creating something new in the existing products, or going towards a new market. The second dimension is innovation type, which denotes a type of innovation, such as product-service system innovation. The current study specifically targets and highlights various aspects of the first dimension of innovation, where organisations focus on the innovation of employees regarding their work and innovation in their products. Therefore, innovation in employees' expertise results in creative and innovative ideas that generate innovative products, processes, and services, which enhances the performance of an organisation.

### **2.4.3. Innovation Process**

In the 20<sup>th</sup> century, Utterback (1971) proposed a three-step model of the innovation process, with three steps: 1) idea generation, 2) problem-solving, and 3) implementation and diffusion ([see figure 2.4](#)).

**Figure 2. 4***The Process of Technical Innovation*

*Note.* This figure is generated by Utterback (1971)

In the first step, the important agents of innovation or management identify the need for innovation. For this purpose, the R&D department plays a significant role in identifying the needs of the masses, particularly the organisation. Sehgal et al. (2021) stated that the identification of a business opportunity or problem requires authentic information; therefore, sources of information play a significant role. They identified some sources of information, including suppliers (they are closer to the end-users), competitors (looking towards their shortcomings and techniques), and independent research and development of the organisation and media. The identification of needs leads to the next step in the recognition of technical means to assess whether the organisation will be able to meet the needs of consumers, followed by synthesising a final idea or proposal for development (Utterback, 1971).

In the second step, which is called problem solving, management first needs to break down the major problem into sub-parts in order to better understand the issue and required technical treatment. Each sub-part of the problem needs to be planned separately in order to assign technical goals and objectives to each part to provide the overall solution to the entire problem. At this stage, it is necessary to set priorities for each goal based on the availability of the technical team, resources of the organisation, and necessary technology. Schmid et al. (2022) asserted that innovation requires only three things, including identification of need, a team of experts along with necessary technology, and sufficient financial funds to process that innovation. At this stage, the team may provide some alternative solutions to reach the optimal and best solution by keeping in mind the resources of the organisation. In this way, all alternative solutions may be evaluated based on these resources, and the best solution is selected.

The final stage requires the organisation to implement a finalised solution to the problem. For this purpose, a prototype of the product may be developed for testing in the market and to evaluate the necessary improvements. Therefore, this stage is very critical in the failure or success of a product or innovation. Utterback (1971) noted that actual performance was compared with the set standards in order to go for the required modifications. As this entire process requires time, money, and effort, much care and importance is required to achieve success in an innovative product.

#### ***2.4.4. Predictors and Outcomes of Employee Innovation***

Owing to the increasing significance of innovation, many researchers have explored its various dimensions, predictors, and outcomes. For instance, Kesting et al. (2015) noted that different styles of leadership could influence the innovation of employees and the overall organisation. They further elaborated that transactional and transformational leadership specifically create a huge difference in innovation before and

after the implementation of these leadership styles. Wallace et al. (2016) found that employees should be provided with an environment of sharing knowledge, and organizations should focus on the well-being and development of employees, which leads to a high level of satisfaction as well as innovation of employees. Likewise, Blázquez Puerta et al. (2021) found that the support of colleagues and management proves to be helpful in enhancing the innovation of employees.

Apart from the above, Che et al. (2019) noted that idea generation is encouraged when useful information is available. They further noted that the accuracy of the information is also important. This implies that information is a significant predictor of innovation. Also, many other predictors are identified by previous researchers, like employee motivation (Gupta, 2020), employee engagement and commitment (Rao, 2016), autonomy and empowerment (Echebiri et al., 2020), and job recognition (Gallus et al., 2019).

On the other hand, many outcome variables have been identified by previous researchers who highlight the importance and need for innovation in an organisation. Afriyie et al. (2019) conducted a study to find the impact of employees' innovation on the overall performance of the organization. They found that employees' innovation enhances the overall performance of the organisation and leads to competitive advantage. Liu (2017) identified that innovation is a strong predictor of the competitive advantage of an organization. An organisation's major purpose in doing business is to earn profit and maximise the wealth of shareholders; therefore, Heil and Bornemann (2018) find that innovation enhances the overall profitability of the organisation, which in turn leads to high shareholder value.

Another major contribution is provided by MacGillivray et al. (2014), who noted that one of the major purposes of innovation is to reduce the cost of products in addition to

increasing the output of performance. Therefore, the authors found that innovation has a negative relationship with cost reduction. This means that more innovation leads to a reduction in the cost of goods and services. Other important outcomes may involve better service, increased efficiency, enhanced customisability, increased productivity, and reduced user effort (Kahn, 2018).

## **2.5. Emotional Stability (ES)**

Compared to traditional organisations, contemporary organisations face several challenges such as the adoption of technological advancement, rapid changes in consumer preferences, and globalisation (Alessandri et al., 2018). Therefore, these challenges create pressures which are exerted on the employees of the organisation. Mostly those organizations that are consistently experiencing progress and growth, their employees feel more stress and pressure owing to maintaining organizational position, competitive advantage, and growth (Kundi et al., 2021). Overall competition among organisations has increased owing to the growth of globalisation, which has particularly affected local organisations, as foreign organisations have increased their competition (Safari, Adelpnah, Soleimani, Aqagoli, et al., 2020). On one hand, this increasing competition has raised emotions in the workplace, even in larger firms, while on the other hand, significantly affecting the performance of local firms. In particular, these effects are catastrophic if employees' emotions are not appropriately managed.

Organizational management continuously puts pressure on employees to find ways through which the satisfaction of consumers, suppliers, and stakeholders can be increased. Such pressure often results in increased stress, depression, and emotional and mental exhaustion (Munir & Azam, 2017). Researchers have highlighted that without emotional stability, the common consequences appear to be a reduction in commitment, creativity, innovation, and productivity of employees, which causes not only a loss of competitive

advantage, but also an overall decrease in profitability (Chaudhry et al., 2017; Pant & Yadav, 2016). Therefore, the first and most important thing is the emotional stability of employees so that they can trust themselves, believe in self-efficacy, motivate themselves, and again work with their full potential to regain their position. Employees can only perform well and remain committed when they are emotionally stable, as creativity, innovation, and productivity are specifically linked to mental activity and presence (Park et al., 2022).

### ***2.5.1. Dimensions of Emotional Stability***

The above discussion shows the significance and importance of ES; however, despite this significance, most of the employees in the organisation may not be able to maintain their emotions. Anger, anxiety, and fear could deteriorate performance, productivity, and mental stability, which prove to be the biggest hurdle in making rational and analysis-based decisions (Kundi et al., 2021). While developing a scale for ES, Chaturvedi and Chander (2010) identified five various dimensions of ES. The first dimension, named ‘pessimism versus optimism, highlights the difference between pessimists and optimists. The pessimists are depressed, stressed, and disappointed employees who lose hope for success. Such employees do not see any opportunity around and feel boring at workplace (Ni et al., 2020). They do not make efforts to find solutions to their problems; rather, they prefer to remain in these situations and accept their inability to deal with them (Murugan & Prabadevi, 2021).

On the other hand, optimist employees are engaged, committed, energetic, active, and optimistic. They find opportunities to improve their skills, increase their performance to attain organizational goals, and achieve consistency in their practices to achieve higher ends (Bharathi et al., 2020). These employees are satisfied with their goals, rewards, and

support of the organization and confident about their capabilities to achieve organizational objectives (Xu et al., 2019).

The second dimension of ES identified by Chaturvedi and Chander (2010) is ‘apathy vs. empathy,’ in which scholars believe that apathetic employees are self-centred, egoistic, and selfish. They think of their own benefits without considering others’ needs and benefits. Such people are usually unable to work in teams. On the other hand, empathetic employees are more concerned for others. They always share their expertise, knowledge, ideas, and skills with other colleagues in order to help them. Such employees are more suitable while working in teams as they are motivated, energetic, and have a helping nature, which enhances the overall success of a team and, consequently, the success of the organisation. The third dimension of ES is ‘dependence vs autonomy’, in which Chaturvedi and Chander (2010) noted that dependent employees lack autonomy and freedom to think on their own. Such employees lack the self-confidence and self-efficacy to deal with problems and wait for the instructions of their bosses (Baltes & Silverberg, 2019). Conversely, independent employees think of themselves as masters of their own fate, fight for their decision freedom, and solve their problems independently. These employees are more likely to succeed in achieving organizational goals (Grieco, 2020).

Furthermore, Chaturvedi and Chander (2010) identified ‘aggression versus tolerance as the fourth dimension of ES. The authors believe that aggressive employees are more violent, egoistic, and often indulge in conflict. These employees are unable to manage their emotions effectively. On the other hand, tolerant employees are decent and are more able to manage their emotions, which results in higher performance, productivity, social relations at the workplace, and higher creativity (Aljawarneh & Atan, 2018; Johnson et al., 2018). Finally, ‘anxiety vs. calm’ was identified as the fifth dimension of ES. Chaturvedi and Chander (2010) found that anxious employees are less resilient, more

reactive to even small issues, and worry about small issues without any logic (Tian et al., 2022b). On the other hand, calm employees are more able to manage their emotions; thus, they remain calm during problematic situations, which helps them think and analyse the situation more rationally as well as accurately (Gong et al., 2019).

### **2.5.2. *Predictors and Outcomes of Emotional Stability***

Emotional intelligence is an important trait examined during the recruitment process (Glodstein, 2014). Therefore, many researchers have identified various predictors as well as outcomes of emotional stability. For instance, certain important predictors of emotional stability may include job empowerment (Gong et al., 2020), job recognition (Clarke & Mahadi, 2017), personality traits (Bharathi et al., 2020), role stressors (Liu & Yu, 2019), and leadership styles (Badri-Harun et al., 2016).

On the other hand, several dependent variables are identified by previous scholars, like Job performance (Miao et al., 2021), employee engagement and commitment, resilience, organizational justice, and job insecurity (Ouyang et al., 2015), turnover intention (Gholipour Soleimani & Einolahzadeh, 2017), job satisfaction, innovation (Kaur, 2012) and others. Based on these findings, it can be concluded that emotional stability should be a necessary component of employees' personalities to enhance their commitment, creativity, innovation, satisfaction, and performance. Conversely, it helps an organisation reduce employees' stress and turnover intention.

## **2.6. Job Burnout (JB)**

Nowadays, jobs are more complicated and challenging than ever before; therefore, in order to maximize their output and maintain a competitive advantage, organizations constantly demand more efficiency, effectiveness, productivity, commitment, and organizational citizenship behaviour (Abudaqa et al., 2022; Alessandri et al., 2018). Consequently, overwhelming work burden, stress, and depression result in employees'

mental exhaustion; this state is termed job burnout (JB). Chen et al. (2022) defined JB as a state where an individual faces extreme physical and mental exhaustion owing to constant depression and stress. Similarly, Mikolajczak et al. (2020) note that JB is the result of continuous demands, and individuals may feel unable to meet these demands; thus, they face pressure, stress, and mental exhaustion.

JB is not only detrimental to the individual himself/herself, but also as a whole, the organisation faces a lower level of creativity, productivity, and commitment (Mikolajczak et al., 2020). Continuous stress and mental exhaustion often result in negative thinking, where individuals do not see any hope or opportunity to get growth, development, dedication, and motivation to work (Atroszko et al., 2020). Maslach and Jackson (1981) proposed an instrument to measure the burnout of professionals, which is still widely used, especially by healthcare professionals. The World Health Organization usually uses this instrument to measure burnout; however, it does not see burnout as a problem to be solved by any psychiatrist, as it does not treat it as a mental disorder. Moreover, Koutsimani et al. (2019) also distinguished depression from burnout and noted that both have associations; however, they are different states of mind. Bianchi et al. (2020) noted that JB is a higher level of mental syndrome as compared to depression.

Tsang et al. (2022) have proposed some predictions regarding the possibility of a burnout situation for an individual if he/she is constantly working long hours or working as a healthcare professional, as it is usually considered to be a more stress-related profession. In addition, Irfan et al. (2023) linked burnout with a lack of balance between professional and personal life, where the individual is unable to fulfil both types of responsibilities; therefore, they often face a high level of stress and mental exhaustion. Owing to the heavy and disastrous consequences of job burnout, organizations are investing heavy amounts in

providing facilities to their employees (Kloutsiniotis et al., 2022; Santa Maria et al., 2021; Zainab et al., 2020).

Traditional organisations are less conscious of the well-being of their employees, particularly the emotional and physical comfort of workers. However, the contemporary era has increased the significance of the mental and physical well-being of employees for the organisation. Now employees are considered to be assets for an organization; therefore, they are appreciated for their work, rewarded for their efforts, and supported in order to get commitment and engagement of employees, which results in a high level of productivity and mental satisfaction employees (Bianchi et al., 2020; Gonçalves et al., 2019; H. Khan et al., 2020b).

### **2.6.1. *Classification of Job Burnout***

In order to better understand JB, it is important to highlight it with reference to its different kinds. Montero-Marin et al. (2014) have classified JB into three different types, including overload, neglect, and lack of development or under-challenge burnout.

Montero-Marin et al. (2014) noted that the first kind of JB, termed overload, occurs when an individual tries to achieve success through extremely hard work and taking the burden. This individual willingly takes this burden in order to become successful, and this situation can continue for a short period; however, in the long run, it may cause emotional and physical exhaustion. Gonçalves et al. (2019) linked overload burnout with the sacrifice of the mental and physical health of an individual, where that individual overwhelmingly chases success through hard work, irrespective of the consequences of his/her health.

The second type, which is neglect burnout, occurs when individuals feel helpless and unmotivated regarding the continuous demands of their job. They consider themselves to be incompetent and unable to fulfil the requirements of a particular job, which results in stress and emotional exhaustion (Mikolajczak et al., 2018; Montero-Marin et al., 2014). On

the other hand, lack of development or under-challenge burnout occurs when individuals feel that there are no growth opportunities for them, the environment is full of boredom, and there is nothing to learn. Thus, continuous stress regarding lack of development results in burnout (Montero-Marin et al., 2014). K. Zhang et al. (2019) stated that this is a two-sided sword, where if individuals receive excessive challenges at the job, they face extreme stress, which results in burnout, while on the other hand, if they do not receive challenges, they also face stress, boredom, and lack of dedication due to repetitive patterns of work; thus, faces high level of burnout.

### ***2.6.2. Predictors and Outcomes of Job Burnout***

JB has both predictors, which lead to burnout or reduce its effects, while outcome variables are the consequences that appear due to JB or may be positively or negatively affected by increasing JB. As JB is an important concept within an organisation, researchers have extensively explored its predictors and outcomes. For instance, Gill et al. (2006a) conducted a study to investigate the impact of transformational leadership on job burnout and stress. They found that transformational leadership played a significant role in reducing it, as this type of leadership is deeply connected to employees. The leader considers their needs and demands to better deal with them; therefore, motivating tactics and fulfilling the needs of employees leads to a lower level of stress and mitigation of burnout (Salem, 2015).

One of the most common and understandable predictors of burnout is continuous stress and depression of employees, which result in physical and mental exhaustion (Khamisa et al., 2015; Wu et al., 2021). Another important contribution is made by Bakker and de Vries (2021), who pointed out that the employee hiring process has a high level of significance as the right employee for the right job is important. Those employees who are reluctant to work in challenging workplaces often face burnout situations. Thus, the

authors noted constant demands and the challenging nature of the job results in JB. Conversely, Wu et al. (2021) found that perceived social support plays a paramount role in mitigating burnout among employees as it works as motivation, personal identity, and valuable recognition in the organization, which results in a lower level of stress, thus, avoiding burnout. Apart from this, several other predictors are highlighted by previous researchers like job stressors (Pflügner et al., 2021), workplace violence (Duan et al., 2019), emotional intelligence (Gong et al., 2019), working environment (Al Sabei et al., 2020), emotional stability and self-efficacy (Alessandri et al., 2018), job involvement and job satisfaction (Lambert et al., 2018), job security (Abate et al., 2018) and many others.

Similar to the predictors of JB, researchers have identified several consequences. One of the most common outcomes of JB is turnover intention, as after facing emotional and physical exhaustion, employees often try to leave the organisation as they consider their organization to be not suitable for them (Ran et al., 2020; Scanlan & Still, 2019). Khechine et al. (2020) highlighted three consequences of JB, including sadness, irritability, and anger. They noted that such employees are unable to work in positions where interaction with consumers is high, as their behaviour may cause heavy losses for the organisation. Rather, these employees, if not treated, should be employed in technical positions in which they do not interact with consumers. However, organisations can provide support, facilities, and acknowledgements to help such employees, which may reduce such behaviour.

Also, owing to JB, employees constantly face less motivation, commitment, and engagement and face a high level of stress, burden, irritability, and anger; therefore, their overall productivity level and performance are negatively affected (Garden, 1991; Lee et al., 2020; Yener et al., 2020). Similarly, innovation, creativity, and organizational

citizenship behaviour have also been reduced owing to a high level of JB (Kasa & Hassan, 2015; Noworol et al., 2017).

## **2.7. Contingent Rewards (COR)**

The main purpose of a business is to earn profit; similarly, employees work primarily for pay (Khaskheli & Ali, 2023). As the business obtains services and earns a profit, employees provide services and get paid. However, previous scholars believe that there are two types of employees in an organisation (Bryant & Allen, 2013; Rogers, 2018). The first is those whose primary purpose is to obtain financial benefits, while others include those employees whose main purpose is not earning financial benefits but rather serving the organisation or getting appreciation.

According to the theory of hierarchy of needs, when an individual is able to fulfil his/her basic physiological, safety, and needs of love, he/she craves self-esteem and not for financial benefit (Rojas et al., 2023). In this case, the main purpose was to obtain appreciation, acknowledgement, and recognition. Based on this understanding, it can be concluded that people are motivated by either financial or non-financial rewards. Therefore, the reward system has a paramount role in motivating employees to keep their productivity, creativity, commitment, innovation, and performance high (Kadir et al., 2019). Primarily, there are two types of rewards: contingent and non-contingent.

Manohar et al. (2017) noted that contingent rewards (COR) are conditional on certain behaviours, actions, or performances. On the other hand, non-contingent rewards are independent of any kind of condition regarding certain behaviour, action, or performance. Similarly, Yamaguchi and Nishimura (2019) noted that COR is conditional on an organisation's specific identified goals. Management specifically utilises it to motivate employees so that objectives and goals can be attained. Thus, the performance of an organisation is rapidly maximised (Yamaguchi & Nishimura, 2019). Hwang and Jung

(2018) asserted that COR is useful in enhancing the motivation of employees. Based on these definitions, it can be concluded that COR is a reward and benefit, which are conditional and linked with specific actions, roles, behaviours, or goals, and organisations utilise it to motivate employees to enhance their commitment, engagement, performance, and productivity.

### **2.7.1. *Contingent Reward Factors***

Nguyen et al. (2022) conducted a study to analyse the negotiation with the help of a reward system. The author identified three factors or behaviours which are related to performance. The first one is termed ‘framing’, which notes the structure and dimensions that are expected to be discussed while deciding the reward system—for instance, specifying the required goals, behaviours, or performance in order to get rewards (Algahtany & Bardai, 2019). The next factor is called ‘clarifying’, where management tries to remove ambiguities and misunderstandings in order to clarify the exchange process. In other words, employees are clarified about what is required in exchange for specified rewards (Ahmad et al., 2022). In addition, the specified rewards were clarified to avoid any clash and ambiguity. This clarification provides a way out and goal for employees, and they know the purpose or reason they are trying. Therefore, their focus and efforts may remain outlined (Li et al., 2022).

The last factor is ‘rewarding’, which focuses on outcomes and results. If the specified and required goals, behaviours, or actions are attained, employees are rewarded as specified and agreed upon. These rewards may be either financial, non-financial, or both (Xu et al., 2019). Financial rewards include promotions, bonuses, or increments. On the other hand, non-financial rewards may include appreciation, acknowledgement, or recognition in front of supervisors, colleagues, or subordinates. These contingent rewards

provide motivation to work with more effort, dedication and commitment (Manohar et al., 2017; Xu et al., 2019).

### **2.7.2. *Predictors and Outcomes of Contingent Rewards***

A better understanding of contingent rewards, their importance, and relatedness can be highlighted by further exploring the relationship between the predictors and outcome variables. Predictors can be identified based on the purposes and causes of contingent rewards, while consequences highlight the outcome variables (Saether, 2020; Santa Maria et al., 2021). One important predictor of COR is transactional leadership. For instance, Jiang et al. (2019) have provided evidence to highlight the significant positive impact of transactional leadership on COR. They noted that, specifically, transactional leadership increases the COR in order to enhance the performance of employees as this leadership style focuses on the exchange process. They further asserted that COR results in a high level of satisfaction, working attitude, and citizenship behaviour. Similarly, Algahtany and Bardai (2019) compared the effects of transactional and transformational leadership on COR and found that transactional leadership is more focused on the reward system; therefore, its impact is comparatively high, while transformational leadership's major focus is the inspiration of followers. Therefore, the personality of such leaders is more influential than the reward system. Similarly, other predictors may include negotiation practices and increased market competition.

The first and most important outcome of COR research is motivation. Saether (2020) conducted a study examined the effects of competitive COR on employees' intrinsic motivation. They found that winners were motivated by success and rewards; however, losers were demotivated by losing to attain goals and then losing the specified rewards. In addition, they also elaborated on providing feedback as well as non-financial

rewards in order to boost their confidence for the next time. They suggested attaching rewards for losers as well in order to avoid performance decline.

Similarly, Saether (2020) linked COR to motivation and found that the attachment of the reward system to performance enhances the motivation of employees to fulfil responsibilities with extra effort in order to get rewards. Additionally, this motivation increases competitiveness, creativity, and innovation. An important contribution regarding highlighting the effects of COR on satisfaction and turnover intention was made by Wazir and Jan (2020). They noted that COR has the potential to motivate employees to perform their duties more efficiently and effectively. Furthermore, good performance results in COR, which enhances the satisfaction of employees. This satisfaction is based on the desires and needs of employees. For instance, higher-ranked employees mostly crave prestige, recognition, and acknowledgement.

On the other hand, lower-level employees mostly require financial rewards. Therefore, their satisfaction was attached to the corresponding reward system, and these needs were identified by leadership. Ali (2008) stated that COR also results in a lower rate of turnover intention as employees get financial or non-financial rewards based on their performance. Also, many other scholars have identified certain outcome variables for COR, like organizational commitment, trust, and satisfaction (Top et al., 2015), productivity (Ahmad et al., 2022), creativity and innovation (Saether, 2020), organizational citizenship behaviour (Testa et al., 2020), reducing absenteeism (Senyamator et al., 2020), stress (Paret & Bublatzky, 2020), other outcome variables.

## **2.8. Theories To Explain Variables' Relationships**

Researchers have used theories to understand and explain these phenomena. Theories also present logical relationships among various variables (Götz, 2021). In this study, the following theories are related to and explain the variables operationally:

### **2.8.1. *Social Cognitive Theory (SCT)***

It was previously named social learning theory and then updated into SCT. The theory was proposed by Bandura (1986). The theory states that individuals learn knowledge primarily from interactions with others, observation, and experiences. Bandura asserted that people's behaviours are the result of their imitation of others' behaviours. The author believes that with close observation, people see the behaviours of others and the related consequences. After that, they guide the later behaviours in light of already observed behaviours. In other words, people remember the sequence of events and imitate the behaviours because they expect similar consequences (Schunk & DiBenedetto, 2020).

In the current study, this theory suggests that people observe the consequences of rewards and punishment owing to their involvement in certain behaviours or increasing productivity; therefore, in search of rewards, they have a high level of emotional stability, productivity, and innovation. In this case, transformational leadership plays a significant role because it attaches rewards to specific behaviours or performance, which motivates employees to develop innovative ideas and implement innovative notions in favour of organizational goals. SCT provides a robust lens for understanding how individuals internalize behaviours and adapt them based on perceived outcomes. In the context of transformational leadership (TL), this theory highlights the role of leaders in shaping employee behaviours by modelling desired actions and attaching meaningful rewards to specific behaviours. For example, transformational leaders create an environment where employees learn through observation and interaction, leading to the adoption of productive and innovative practices (Schunk & DiBenedetto, 2020).

SCT has been used by multiple authors in previous studies to explain the relationship between these variables. For instance, Yang et al. (2021) have applied this theory to the relationship between transformational leadership and innovation and found

that TL has a strong influence over the innovation of employees because employees know that owing to high performance, creativity and innovation, they will be rewarded. Wu et al. (2020) found that TL inspires followers to stay strong and emotionally stable, which also reduces their burnout situation. Arda and Yıldız (2019) also utilized SCT and connected TL with ES. Chen et al. (2018) have linked TL with an increased level of productivity in the context of social cognitive theory. Based on these findings, it can be concluded that social cognitive theory is best suited to explain the impact of transformational leadership on emotional stability and job burnout in the moderating effects of contingent rewards. However, a limitation of SCT is its tendency to focus primarily on the external modeling of behavior without adequately addressing internal psychological factors such as emotional stability or resilience. While SCT is instrumental in explaining how leaders influence innovation and productivity, it must be complemented by theories that delve into intrinsic employee characteristics, such as Conservation of Resource Theory, to provide a more holistic understanding.

### **2.8.2. *Conservation of Resource Theory***

COR theory extends beyond stress mitigation to explain how individuals strategically acquire, maintain, and deploy resources to manage workplace challenges. It is particularly relevant in high-stress environments, such as the petrochemical industry, where resource depletion is a major concern (Hobfoll, 2011). Transformational leadership can play a key role in replenishing these resources by fostering an environment that promotes emotional stability and reduces burnout, thereby enabling employees to sustain high levels of productivity and innovation. In general, this theory highlights the stress of individuals when they lose something valuable. COR was introduced by Hobfoll (1989), who noted three kinds of resources which, if lost, individuals will get stress. These resources include the threat of loss, actual loss, and insufficiency of received resources

after the outflow of available resources. Resources include things which are valuable to individuals. Therefore, owing to the loss of these resources, people get stressed (Zhao et al., 2023). It is also important to note that once a loss is made, individuals become more protective in saving available resources in the future. This would lead to adopting ways which may save them.

In the current study, COR theory states that owing to the loss of resources or failure, employees may experience stress, which results in job burnout, and emotional stability will be lost as well. However, to protect against future threats and losses, individuals will continue to enhance their innovation capabilities and productivity. In this case, when transformational leadership supports such employees, inspires them, and motivates them with contingent rewards, their stress level reduces, which results in emotional stability and the mitigation of job burnout. Eventually, this stability results in high levels of productivity and innovation. Thus, the conservation of resources theory suggests that individuals also work on their self-efficacy and seek motivation as well as emotional stability to save their available resources for the future term, in addition to being motivated for rewards.

Certain previous scholars have also used this theory to link with these variables. For instance, this theory is applied with reference to students' burnout situations (Wang et al., 2021). Wu and Lee (2020) also studied this theory in the context of transformational leadership, emotional stability, and job burnout. Similarly, many scholars have implemented this theory to study these variables. While COR theory effectively captures the dynamics of resource loss and replenishment, its application in organizational contexts often overlooks the interactive effects of leadership styles and motivational mechanisms, such as contingent rewards. By integrating COR theory with SCT, this study provides a comprehensive framework that explains how transformational leadership not only

mitigates resource loss but also builds employee resilience through structured incentives and emotional support.

### **2.8.3. *Path Goal Theory***

Path-Goal Theory emphasizes the strategic role of leaders in clarifying and facilitating pathways to goal achievement. In this study, it aligns with transformational leadership by demonstrating how leaders guide employees toward innovation and productivity while minimizing obstacles such as burnout. By providing contingent rewards, transformational leaders create a goal-oriented culture that fosters both intrinsic and extrinsic motivation (House, 1996). This theory states that leadership is responsible for providing relevant, useful, and beneficial information to employees regarding the goals of the organization. Therefore, leaders' behaviour has a significant influence on changing the behaviour of followers (Fabac et al., 2022). The author further noted that leadership behaviour increases commitment, engagement, and organizational citizenship behaviour; however, it also reduces stress, burnout, and turnover. Therefore, in the context of this study, path goal theory considers the significant role of transformational leadership in enhancing emotional stability, productivity, and innovation, while reducing job burnout. Transformational leadership further enhances its impact on these variables through contingent rewards. However, the prescriptive nature of Path-Goal Theory has been critiqued for its limited focus on contextual variables, such as the unique challenges in the petrochemical industry, including high stress and safety concerns. Incorporating COR and SCT alongside Path-Goal Theory allows this study to address these contextual challenges by integrating employee resource dynamics and behavioural modelling into the leadership framework.

## **2.9. Contemporary Governance and Management Issues in Petrochemical Industries**

The petrochemical industry faces unique governance and management challenges due to its high-risk operational environment, strict regulatory requirements, and reliance on skilled personnel. Despite its significance, few studies have critically examined how transformational leadership impacts employee outcomes like productivity and innovation in this context. Research has highlighted issues such as high employee turnover, skill shortages, and safety compliance as persistent challenges (Hassani et al., 2017; Li et al., 2021). Governance frameworks in the UAE's petrochemical sector often emphasize compliance and efficiency but lack a focus on leadership practices that foster innovation and employee well-being (Al Mansoori et al., 2020).

Additionally, while the sector is critical to the UAE's Vision 2030 goals, there is a research gap in understanding how leadership styles can address job burnout, enhance emotional stability, and motivate employees through contingent rewards (Dakrory, 2023; Davidson, 2010). The rapid technological advancements in the sector further necessitate innovative solutions, yet there is limited evidence of how transformational leadership can bridge the gap between operational efficiency and employee engagement (Turner, 2021). This study addresses these gaps by examining the interconnected roles of transformational leadership, emotional stability, job burnout, and contingent rewards in driving employee productivity and innovation, providing critical insights for governance and management in petrochemical industries.

## **2.10. Chapter Summary**

This chapter highlighted the definitions, types, characteristics, predictors, and outcome variables of the study. First, transformational leadership inspires followers and enhances their commitment, motivation, and performance. At the same time, emotional stability is the reduction of stress, enhancement of mental health, and reduction of

emotional exhaustion. Job burnout refers to a situation in which individuals come to a situation where continuous stress and depression cause mental, physical, and emotional exhaustion. Productivity is the efficiency and effectiveness of employees, whereas innovation is the generation and application of creative and new ideas. Contingent rewards are the attached benefits, both financial and non-financial, which employees may receive after certain goal achievement or specific behaviours.

Social cognitive, path goal, and conservation resources theories can help explain the relationship between these variables. Based on these theories, transformational leadership inspires individuals and enhances emotional stability. While at the same it, transformational leadership decreases burnout, which leads to increased productivity and innovation of employees. In short, transformational leadership increases emotional stability, productivity, and innovation while reducing job burnout. These relationships are improved by enhancing contingent rewards.

## **Chapter 3: Hypotheses Development and Framework**

### **3.1. Introduction**

This chapter highlights the conceptual framework of the study. In addition, previous studies examined the relationship between the variables in this study. Importantly, this chapter highlights these hypotheses. These hypotheses include direct, indirect, and moderating hypotheses.

### **3.2. Transformational Leadership and Emotional Stability**

Based on the five dimensions identified by Chaturvedi and Chander (2010), emotionally stable employees have the traits of optimism, empathy, autonomy, tolerance, and calmness. On the other hand, employees who lack emotional stability possess traits like pessimism, apathy, dependence, aggression, and anxiety. Flynn et al. (2021) noted that emotionally stable employees are more able to deal with issues, and they are resilient. Therefore, in order to maintain these traits, leadership plays a significant role. Romi et al. (2022) asserted that leadership style could improve commitment, loyalty, self-confidence, and optimism, which directly affect performance. Hajncl and Vučenović (2020) asserted that TL has a close interaction with followers; therefore, the leader is able to better understand the emotional level of employees. They also noted that transformational leaders have the capability to inspire and motivate their followers to effectively attain their goals, irrespective of competition level, pressure, and stress level.

Despite the importance of emotional stability and transformational leadership, there is a lack of sufficient evidence regarding their relationships.

Individuals with high emotional intelligence are better equipped to understand and manage their emotions, which contributes to greater emotional stability. They are more capable of maintaining a positive mood and managing stress, which helps them remain

emotionally stable, even in challenging situations. Therefore, researchers believe that emotional intelligence is part of emotional stability (Cece et al., 2019; Suleman et al., 2020). Hassan et al. (2011) has noted that emotional stability is also called emotional intelligence. Therefore, in this study, emotional intelligence was used as an alternative term for emotional stability. Based on this understanding, although insufficient studies are available regarding the relationship between transformational leadership and emotional stability, most studies have highlighted the relationship between emotional intelligence and both transactional and transformational leadership in a way that both leadership styles possess emotional intelligence (Mysirlaki & Paraskeva, 2020). In other words, they presented emotional intelligence as a trait of these leadership styles rather than exploring their impact on employees' emotional stability. For instance, Baba et al. (2021) conducted a study and found that both transactional and transformational leadership has the emotional intelligence of employees; however, importantly, transformational leadership has a higher level of emotional intelligence. Previous scholars have identified the relationship between transformational leadership and different components of emotional stability rather than taking it as a complete variable.

Le et al. (2018) found that TL has a strong impact on increasing the level of optimism and self-efficacy of employees, particularly in the services industry. They also found that such employees try to share their knowledge with other colleagues or subordinates in order to maximise output and performance as a whole. Bakker et al. (2022) stated that transformational leadership acts as a role model for the followers; therefore, as the leader himself/herself is empathetic, he/she inspires followers to follow the same path. The author further highlighted that transformational leaders try to listen to the needs and demands of followers and support them; thus, followers also act accordingly, creating a healthy social environment in the workplace where employees are encouraged to share

their ideas, skills, and knowledge. This environment helps not only the sharp and intelligent employees but also the weaknesses of incompetent employees are covered, which leads towards overall success for the entire organization (Le & Lei, 2018; Sharifirad, 2013).

Buil et al. (2019) conducted a study to find the relationship between TL and the proactive approach of employees. They further examine the effects of autonomy (dimensions of emotional stability). Their results revealed that TL has a strong impact on employees' proactive approaches. Moreover, in the presence of autonomy, the relationship between TL and proactive approach increases. Thus, based on the above-mentioned findings, it can be concluded that TL causes an enhancement in emotional stability of employees. Therefore, the following hypothesis was developed:

*H1: Transformational leadership has a positive effect on emotional stability.*

### **3.3. Transformational Leadership and Job Burnout**

TL plays a paramount role in positively influencing employees in an organisation. As such, the leader tries to understand the needs and demands of followers; therefore, the TL can better communicate and inspire employees in the organisation (Shafi et al., 2020). Primarily, if the difficulties and problems of employees are not mitigated, their commitment, engagement, and productivity can be reduced; therefore, TL always tries to facilitate employees, help them, and support them. This support reduces their ambiguities, conflicts, and burdens; therefore, their stress level also decreases, which in turn has a negative impact on burnout (Tsang et al., 2022). Likewise, many scholars have previously evaluated the relationship between TL and burnout. Bosak et al. (2021) conducted a study in the context of the hospitality industry and collected data from employees. Their results revealed that TL has a negative effect on both job stress and job burnout. They noted that TL was more suitable than any other leadership style in the hospitality industry.

Tian et al. (2022a) conducted a study on MBA students to identify their stress levels and burnout situation and the impact of transformational leadership. This study was conducted only at a university in a north-eastern city. The data revealed that transformational leadership reduced burnout among students and increased their satisfaction levels. However, they also pointed out that the burnout situation is reduced when TL provides rewards and acknowledgement, but if TL contacts only when the set standards are violated or not met, burnout increases instead of decreasing. This means that continuous interaction, along with acknowledgement, is necessary to reduce burnout. Another important contribution is provided by Bosak et al. (2021), who conducted a study in the healthcare sector and found that TL is not only beneficial for increasing satisfaction, but also valuable for reducing the level of burnout among employees.

Apart from the above, Wu et al. (2020) highlighted that spiritual climate in the workplace performs as a supportive factor to enhance the impact of TL on job burnout of employees. In addition, Hildenbrand et al. (2018) evaluated the moderating effects of thriving and followers' openness on the relationship between TL and JB. They found that TL had a strong negative influence on JB, and this effect was enhanced by the moderating effects of thriving and followers' openness. Similarly, Diebig et al. (2017) found that transformational leadership reduces the burnout of followers. They also found that leaders' strain can increase burnout; however, TL mediated this effect and reduced JB. In addition, reducing JB results in reduced turnover intention. Moreover, Liu et al. (2019) found that TL has a negative impact on job burnout, and this relationship is mediated by employee empowerment, which means the increasing employees' empowerment also enhances the impact of TL on JB. Thus, based on the findings of previous studies, the following hypothesis was developed.

*H2: Transformational leadership has a negative effect on job burnout.*

### **3.4. Transformational Leadership and Employee Productivity**

The appropriateness of leadership style in accordance with the needs and requirements of an organization has a high level of significance, and it decides whether the organization is going to perform well or not (Arif, 2021). In addition, the effectiveness and efficiency of employees' performance in terms of productivity are necessary, as the survival of an organisation is comparatively difficult in the long run. Therefore, they need a high level of productive employees along with relevant technology to achieve success. TL transforms followers and inspires them to perform well. Therefore, Vatankhah et al. (2017) conducted a study to evaluate the impact of TL on employee productivity. Data were collected from healthcare professionals in the teaching hospitals. They performed structural equation modelling and found that there had a strong positive influence on productivity. They also noted that the stressful environment of healthcare professionals requires TL to cope better with challenging environments and goals.

A recent study examined the effect of TL and employee motivation on productivity directly, as well as the mediating effect of employees' engagement. Their results showed a positive influence of TL and employee motivation on productivity. They also highlight that employee engagement has a positive mediating role between the effect of TL and motivation on productivity. Gyanchandani (2017) has further evaluated the effects of TL on the productivity of team members. The author found that TL increased the overall effectiveness of team members, who were more able to actively perform within a team with improved productivity. In the context of Khyber Pakhtunkhwa province of Pakistan, a study was carried out by Rehman et al. (2018) to analyse the impact of different leadership styles and organizational cultures on banking employees' productivity. They found that there is no significant effect of organizational culture and autocratic and democratic leadership styles on productivity; however, there is a positive effect of laissez fair,

transactional, and transformational leadership styles on productivity. They further distinguished the effect and noted that TL had the strongest effect on productivity compared to other leadership styles. Similarly, several other studies have found a positive effect of TL on the productivity of employees (Buil et al., 2019; Eliyana & Ma'arif, 2019; Kalsoom et al., 2018). Therefore, based on these findings, the following hypothesis was developed:

*H3: Transformational leadership has a positive effect on employee productivity.*

### **3.5. Transformational Leadership and Employee Innovation**

Innovation is specifically necessary and important in today's scenario as consumers' preferences are changing with the passage of time; therefore, continuous updating of products, introducing new designs with additional features, and completely introducing new products have become the need of the hour. Without innovation, organisations cannot survive for a long period. Therefore, researchers opined that transformational leadership is considered to be one of the most effective and efficient leadership styles in order to encouraging innovation and creativity (Afriyie et al., 2019; Le, 2020). With the increasing need for creativity and innovation, the need for research on leadership style has also increased. Therefore, many researchers have investigated the relationship between different leadership styles and innovation, especially the transformational leadership style, which encourages innovation and creativity among followers.

Lei et al. (2020) investigated the relationship between TL and innovation with the mediation effect of employees' psychological capital. This study was conducted on both individual and organizational levels. They divided employees' psychological capital into self-efficacy and optimism. Their findings reveal that TL has a positive impact on enhancing employees' innovation capabilities. They also found that both self-efficacy and

optimism played significant mediating roles; however, the effect of self-efficacy was stronger. Similarly, Watts et al. (2020) also found a positive relationship between TL and the innovation of employees. They also noted that this relationship is stronger in countries with a high level of uncertainty avoidance than in countries where uncertainty avoidance is low. They further suggested that to enhance the innovation capabilities of employees, supervisors should adopt transformational leadership characteristics, which must be adopted in countries with a high level of uncertainty avoidance.

Another important previous contribution can be highlighted as Al-Husseini et al. (2019) noted that transformational leadership specifically encourages employees to share their thoughts not only with them but also with other colleagues. This encouragement results in the sharing of new ideas and the behaviour of helping others among followers, which enhances their overall performance. However, one of the greatest benefits of increased knowledge sharing is the increasing level of innovation among followers. Thus, TL is beneficial in increasing both knowledge sharing and consequently, the innovation of employees.

Apart from the above, Zhang et al. (2018) evaluated the effects of transformational leadership on the innovation of employees in the construction industry. They noted that innovation in the construction industry is somewhat difficult compared to other industries; however, the implementation of a transformational leadership style can rapidly increase the innovation capabilities of employees. Several other researchers have investigated the impact of TL on employee innovation. For instance, Supermane (2019) examined this relationship in the education sector, while Hui et al. (2018) carried out a study in Vietnamese firms, and Al Ahmad et al. (2019) analysed this relationship in the context of Lebanese banks, and Naguib and Naem (2018) examined it in Egyptian corporations, and all of these studies found a positive relationship. Based on these findings, it can be

concluded that transformational leadership enhances the innovation capabilities of employees; thus, we propose the following hypothesis:

*H4: Transformational leadership has a positive effect on employee innovation.*

### **3.6. Emotional Stability and Employee Productivity**

Goleman (1996) gave more importance to emotional intelligence than intelligence quotient (IQ) because O'Neil (1996) noted that in accordance with the findings of Goleman (1996) if individuals are unable to control their emotions, they may be unable to make a decision in a toxic environment. An individual with a high IQ cannot perform well in a toxic condition if they are unable to control their emotions (O'Neil, 1996). Therefore, emotional stability, which is also used interchangeably in the literature with emotional intelligence, has more significance than IQ. Greenbaum et al. (2021) found that threats to parenting identity can reduce employees' emotional stability, which in turn reduces their workspace efficiency and effectiveness. In other words, a decline in ES leads to a productivity loss.

Brooks and Nafukho (2006) stated that employees with a high level of emotional intelligence are able to make rational decisions in stressful situations. Such employees can also retain their level of motivation, commitment, and self-efficacy, which helps them maintain their productivity level. Brooks and Nafukho (2006) highlighted that emotional intelligence strengthens social and human development, and that employees who are more emotionally stable are more suitable for stressful positions. Sahdat et al. (2011) proposed a positive link between ES and the productivity of employees, particularly in the manufacturing sector. The authors believe that if employees know their emotions, they are in a better position to manage themselves and perform more productively. However, if employees are unable to understand their own emotions, other colleagues, subordinates,

and consumers may be affected by the negative influence of aggression, anxiety, sadness, and pessimism of these employees.

Goleman and Boyatzis (2017) provided four major dimensions that were further divided into 12 elements of emotional intelligence. The four dimensions are self-awareness, self-management, social awareness, and relationship management. If these dimensions are strong, an individual is considered to be emotionally stable. Loksa et al. (2016) and Cox (2002) noted that self-awareness is necessary for employees to utilise their strengths in favour of and to counter their weaknesses in order to obtain maximum output. Apart from this, Palvalin et al. (2017) explored the relationship of self-management with productivity and found that organizations are highly concerned with improving the self-management of employees as those employees with a high level of self-management have a high level of productivity as well. The authors believe that such employees can effectively reduce all restraining elements, while empowering their strong forces to achieve maximum productivity. Besides, Joly et al. (2010) found that social awareness has also positive impact on productivity, while another researcher Panayides (2006) presented a positive impact of relationship management on productivity; thus, based on these findings, the following hypothesis is developed.

*H5: Emotional stability has a positive effect on employee productivity.*

### **3.7. Emotional Stability and Employee Innovation**

Innovation and creativity have become more important in times of pressure, stress, and crisis. Rampa and Agogu   (2021) highlighted that innovation has significance in improving the competitive advantage of organizations; however, it is directly linked with the mental health of individuals. They noted that during a training session, employees are specifically trained to keep calm during a crisis as anxiety, stress, and anger deteriorate the mental state to think rationally; rather, employees make quick decisions without analysing

from different dimensions or such employees may delay finalising the decision; thus, in both conditions, the organisation may face loss (Broshi-Chen & Mansfeld, 2021). A recent study was conducted in the tourism industry to examine business innovation models. It was particularly conducted in the COVID-19 scenario, where a crisis may affect the innovation capabilities of employees. They found that employees' creativity levels and innovation capabilities were negatively influenced by COVID-19. They further evaluated that despite the crisis, innovation capabilities can be utilised to bring organisations out of the crisis.

Tajpour et al. (2018) collected data from 169 employees, and regression analysis was performed to examine the effects of emotional intelligence on innovation. They found a strong positive impact of emotional intelligence on employees' innovation. Conversely, Koch and Adler (2018b) found that continuous stress and crisis situations lead to mental and emotional exhaustion, which decreases the innovation capabilities of employees as they are not able to think confidently; rather, they victimise themselves as less capable, competent, and intelligent to handle the crisis situation, which further reduces their capability to innovatively implement creative ideas. This means that mental stability and innovation are both positively related. However, crises and innovation are negatively associated. Patterson and Zibarras (2017) implemented this model in the healthcare education sector and found that sample participants represented a strong desire regarding the presence of emotional stability to enhance their creativity and innovation.

Some studies also found a negative relationship between emotional stability and innovation or did not find any link between the two variables. Zhou and Tang (2022) found that agreeableness (dimension of ES) has a significant impact on creativity as well as innovation. They highlighted the reason for the negative relationship in that some individuals may lack creative abilities by birth; therefore, despite their emotional stability, they may not be able to think and innovatively act creatively. They further found that

consciousness (a dimension of ES) is not related to innovativeness. The authors provided the same logic.

However, Zhong (2021) noted that the lack of relation is not due to a lack of innovative capabilities by birth, but rather due to less agreeableness and consciousness, which are an important part of emotional stability. Similarly, Blázquez Puerta et al. (2021) and Alsharari and Alshurideh (2020) found a strong relationship between emotional intelligence and innovation. Thus, based on these findings, one can conclude that ES has a positive relationship with the innovation of employees. Based on this understanding, the following hypothesis was developed:

*H6: Emotional stability has a positive effect on employee innovation.*

### **3.8. Job Burnout and Employee Productivity**

From a general perspective, one can imagine working in a toxic environment without commitment or engagement. It is widely recognised that toxic workplaces negatively affect employees' performance owing to increasing levels of stress, depression, ambiguity, conflict, and overload (Anjum et al., 2018). However, if an individual experiences burnout, which has a high level of negative intensity compared to stress and depression, the first and most important negative effect of this situation is the reduction in productivity, innovation, and creativity of employees. Thus, a lack of efficiency and effectiveness among employees can have a significant negative impact on the profitability of an organisation. Therefore, job burnout has been examined by some previous scholars along with the productivity of employees.

Ghasemizad et al. (2017) investigated the correlation between job burnout, productivity, and organizational health. This study was conducted in the context of the petroleum industry in Iran. Their results revealed that strong organizational health has a

positive relationship with productivity, but a negative effect on job burnout. Importantly, this study found that job burnout has a consistently negative impact on employees' productivity owing to their lack of commitment and engagement. Job burnout reduces self-efficacy and confidence and enhances intention to leave the organisation. Thus, productivity is one of the most important negatively affecting factors. Similarly, Woo et al. (2017) examined that a higher level of job burnout reduces the productivity of employees; however, if these employees are satisfied with their organization, the negative effect of job burnout reduces productivity. The authors found a moderating effect of job satisfaction on the relationship between job burnout and productivity.

Likewise, Lee et al. (2020) also contributed with respect to investigating the effects of job burnout on the productivity of employees in the construction sector. They found that continuously increasing job-related demands enhance stress and anxiety among workers; however, if they understand the requirements of their job, they are comparatively safer to avoid burnout. Conversely, if they are unable to understand job-related demands, their stress levels are further enhanced, which results in mental exhaustion. This situation reduces the efficiency and productivity. Similarly, Bhagat et al. (2018) also found that increasing the level of job burnout has a strong negative influence on the productivity level of professionals. Turner et al. (2017) carried out a study on the mental and emotional burnout of physicians and found that high-level burnout, which reduces their overall clinical productivity. Thus, based on these findings, it can be concluded that job burnout is negatively related to employee productivity. Thus, we propose the following hypothesis:

*H7: Job burnout has a negative effect on employee productivity.*

### **3.9. Job Burnout and Employee Innovation**

The majority of researchers have elaborated that job burnout is specifically relevant to mental disorders, psychological issues, and emotional exhaustion; therefore, it reduces

self-efficacy, confidence, creativity, and innovative capabilities (Lambert & Hogan, 2010; Quanle, 2011). Lambert et al. (2018) asserted that stress is the prime factor, which continues constantly, and results in job burnout. Munnangi et al. (2018) noted that job burnout reduces the active mentality and commitment among employees. It is important to note here that creativity and innovation result from sound physical and mental health (Kahn, 2018). As mental capability has a negative relationship with job burnout, owing to increasing JB, employees' innovation decreases. Several scholars have evaluated this relationship. For instance, Noworol et al. (2017) conducted a study examined the relationships among job burnout, creativity, and innovation. They found that increasing professional burnout leads to a lower level of creativity and innovation. They further stated that as the job burnout level increased, the level of creativity and innovation decreased continuously.

Another important contribution was made by Igbokwe et al. (2019) in the context of the educational sector. Data were collected from undergraduate students to identify their innovation in the curriculum. The findings revealed that owing to increasing pressure and burden, students were facing continuous stress, which was converted to mental and emotional exhaustion. This situation has reduced the level of innovation among students. Similarly, in a recent contribution, Lee et al. (2021) conducted a study to investigate whether play at the workplace reduces the burnout situation, which is causing a reduction in innovation and creativity among employees. Their results revealed that owing to playing facilities at the workplace, employees feel relaxed and enjoy working. They further found that relaxation and fun increased their excitement and reduced their stress as well as depression. In other words, the authors found that owing to playing at the workplace, the burnout of employees reduces with the passage of time, and this reduction causes an increase in the innovation of employees (Lee et al., 2021).

Apart from the above, Koch and Adler (2018b) conducted a longitudinal study and found that mental and physical exhaustion cause job burnout which leads to a decrease in employee innovation. In addition, Maslach (2017) found several outcomes for employees and evaluated the effects of job burnout on these outcome variables. They found that a higher level of job burnout results in lower levels of creativity, innovation, organizational citizenship behaviour, engagement, commitment, satisfaction, and productivity, and a higher level of turnover intention. Thus, based on the above findings, the following hypothesis is developed:

*H8: Job burnout has a negative impact on employee innovation.*

### **3.10. Mediation Role of Emotional Stability between Transformational Leadership and Employee Productivity**

To the best of our knowledge, no previous studies have tested the mediating role of emotional stability between transformational leadership and productivity. Rather, they have explored the relationships of each of these three variables with each other individually. For instance, Purwanto (2022) found that transformational leaders are more capable of dealing with employees to enhance their self-efficacy, motivation, and commitment, which increases their overall level of productivity. Similarly, Vatankhah et al. (2017) conducted a study in the context of hospitals and noted that owing to implementing transformational leadership traits, leaders are more influential in increasing the productivity of employees in the health sector. They can manage their outcomes more effectively and, overall, their efficiency increases.

In addition, researchers have also found that transformational leadership has direct effects on improving the mental and emotional intelligence of employees. At the workplace, these leaders are deeply concerned with the needs, desires, and wants of employees and try to fulfil their financial, social, and psychological issues, which increases

the overall emotional intelligence of employees (Baba et al., 2021). They feel relaxed, less stressful, and depressed; therefore, the emotional stability of employees continuously increases under the leadership of transformational leaders (Görgens-Ekermans & Roux, 2021). In addition, some studies have found a relationship between emotional stability and productivity. For instance, Geun and Park (2019) believe that emotionally stable and intelligent employees are better able to keep themselves calm and stable during toxic situations and crises; therefore, their productivity is comparatively higher in such conditions.

According to Baron and Kenny (1986), if the independent variable has a significant influence on both mediators and the dependent variable, while mediators also have a significant influence on the dependent variable, then the mediation relationship will be proved, as the aforementioned studies show that transformational leadership has a significant influence on both emotional stability and productivity of employees. In addition to the significant influence of emotional stability on productivity, emotional stability played a significant mediating role between TL and productivity. Thus, we propose the following hypothesis:

*H9: Emotional stability plays a mediating role between transformational leadership and employee productivity.*

### **3.11. Mediation Role of Emotional Stability between Transformational Leadership and Employee Innovation**

Similar to the previous mediation role of emotional stability, the mediation relationship between transformational leadership and innovation can also be presented. Although previous scholars have not tested the mediation of emotional stability between transformational leadership and innovation, still many scholars have explored the individual correlation of these variables with each other. Matzler et al. (2008) noted that

modern organizations are more concerned about the level of creativity, productivity, and innovation of their employees; therefore, specifically, manufacturing organizations are more frequently moving towards transformational leadership. This change has proven to be effective in changing the innovation capabilities of employees both inside and outside the organisation (Matzler et al., 2008).

Apart from the above, Paulsen et al. (2013) have found that in the presence of transformational leadership, the activities of knowledge sharing, idea generation, creative collaboration, research & development, and innovation capabilities are continuously increased. They further stated that transformational leaders prefer to transform employees into creative, competitive, engaged, committed, and innovative. In addition, the effects of transformational leadership on emotional stability, although limited evidence is available, are relevant for proving the mediating role of emotional stability between TL and innovation. Wang et al. (2018) found that TL reduces the mental exhaustion of nurses in order to make them emotionally and mentally strong, which in turn reduces their turnover intention. Similarly, Singh and Modassir (2007) have also found that TL has a significant positive impact on enhancing the emotional intelligence of employees as well as their citizenship behaviour.

Similar to these relationships, the impact of emotional stability on innovation is also proved. Jafri (2018) argued that emotionally stable employees are more creative and innovative. They tend to bring more new ideas and apply new ways to achieve organizational goals. However, this relationship becomes stronger when employees are provided with autonomy to make decisions and accept their responsibilities. Additionally, leadership support plays a paramount role in enhancing this relationship; thus, based on these relationships, the criteria of Baron and Kenny (1986) are proven. Therefore, the following hypothesis is proposed.

*H10: Emotional stability plays a mediating role between transformational leadership and employee innovation.*

### **3.12. Mediation Role of Job Burnout between Transformational Leadership and Employee Productivity**

Many previous scholars have explored the relationship between transformational leadership and productivity, as well as the relationship between transformational leadership and burnout (Risambessy et al., 2012; Salem, 2015); however, there is a lack of evidence regarding the mediation effect of job burnout between transformational leadership and productivity. Risambessy et al. (2012) noted a significant relationship between these three variables. Similarly, H. Khan et al. (2020b) found that transformational leadership, job burnout, and productivity are significantly correlated with each other. Other studies have reported similar results. In general, Baron and Kenny (1986) noted that if an independent variable has a significant relationship with the mediator and the dependent variable, and the mediator has a significant relationship with the dependent variable, there will be a significant mediation between the independent and dependent variables. A similar understanding prevails. Several studies have shown that transformational leadership has a significant relationship with both job burnout and productivity, and job burnout has a significant relationship with productivity.

Salem (2015) found a significant negative impact of transformational leadership on stress and job burnout. They conducted this study in the context of five-star hotels and highlighted that the implementation of transformational leadership resulted in a considerable reduction in stress and burnout among employees. Similarly, Gong et al. (2013) found a significant negative impact of transformational leadership and a sense of calling on job burnout. Similarly, previous researchers have explored the impact of transformational leadership on productivity. For instance, Kloutsiniotis et al. (2023) found

that owing to implementing transformational leadership, the motivation and productivity of employees will be increased. Similarly, von Thiele Schwarz et al. (2016) evaluated the impact of different leadership styles on the productivity of employees and compared the results. Their findings revealed that autocratic and democratic leadership had no significant impact on productivity; however, transactional and transformational leadership had a significant impact on productivity. Importantly, the effects of transformational leadership are higher compared to transactional leadership.

Other researchers have found a relationship between job burnout and productivity. For instance, Zarza-Alzugaray et al. (2020) found a positive effect of social support and a negative effect of job burnout on employee productivity. They noted that job burnout and social support had an inverse relationship, and that social support also reduced the effects of job burnout. Similarly, Irfan et al. (2023) found a negative impact of job burnout on the productivity of nurses in hospitals. The primary reason is that a higher level of pressure, stress, and burnout among nurses leads to a lower level of productivity, as the conditions prescribed by Baron and Kenny (1986) are fulfilled based on the above-mentioned relationships between the three variables. Therefore, the following hypothesis is proposed.

*H11: Job burnout plays a mediating role between transformational leadership and employee productivity.*

### **3.13. Mediation Role of Job Burnout between Transformational Leadership and Employee Innovation**

In general, it can be implied that owing to transformational leadership, employees become more confident, motivated, and emotionally stable, which prevents them from emotional and mental exhaustion (job burnout). Therefore, lowering stress leads to high mental stability, creativity, and innovation. Although the mediation effect of job burnout between transformational leadership and innovation has not been examined by previous

scholars, with reference to the above-mentioned criteria proposed by Baron and Kenny (1986), one can conclude that if independent and mediator have both significant effects on dependent, while independent also has a significant effect on a mediator, the mediation effect will be proved. Therefore, previous scholars have highlighted the effect of TL on both JB and innovation. Similarly, the effect of TL on JB was also significant; therefore, the mediation effect of JB can be proposed. Following are the findings of previous scholars regarding these direct relationships.

Ul Hassan et al. (2023) found that TL plays an important role in the reduction of job stress, exhaustion, and burnout. Similarly, Tian et al. (2022a) noted that teachers often face a high burden of work, which results in pressure and stress, and continuous stress results in mental and emotional exhaustion, which is termed job burnout. Therefore, the increasing burden leads to job burnout. However, due to the implementation of the qualities, traits, and personality tactics of transformational leadership in educational institutions, teachers' stress and depression levels will be reduced, which will prevent them from experiencing burnout. It means the TL has an inverse relationship with JB. With reference to the relationship between TL and innovation, Khalili (2016) highlighted that transformational leadership encourages a high level of knowledge sharing at the workplace, spreads awareness, fulfils the needs of followers, and inspires them towards high commitment, engagement, and creativity, which helps them achieve innovation. They further noted that TL is also beneficial for the organisation to transform the lives, mental situations, and emotional conditions of employees, which are also linked to improving the innovative capabilities of employees.

Similar to the above, Shafi et al. (2020) further examined the consequences of TL and found that it is directly linked with increasing research and development in the organization. At the individual level, every employee is encouraged to share expertise,

knowledge, and skills with others to improve their skills and knowledge. At the organizational level, TL transforms the mental capability of employees with the continuous practice of creativity and innovative exercise; thus, it leads to a high rate of innovation and competitive advantage. Regarding the relationship between job burnout and innovation, Noworol et al. (2017) found that job burnout primarily reduces the mental capability of individuals to think rationally during a crisis; therefore, their creativity and innovation are negatively affected. In addition, Jain et al. (2017) conducted a review study and presented findings regarding the commonality of previous scholars' beliefs about the negative impact of job burnout on employee innovation. Therefore, as the criteria proposed by Baron and Kenny (1986) are fulfilled, the following hypothesis is proposed:

*H12: Job burnout plays a mediating role between transformational leadership and employee innovation.*

### **3.14. Moderation Effects of Contingent Rewards on the Relationship of Transformational Leadership and Emotional Stability**

In general, transformational leadership helps individuals gain inspiration and social, moral, and financial support, as well as motivation to consistently improve their performance and achieve growth. Also, transformational leadership has the capability to inspire followers to enhance their productivity, innovation, and overall performance (Tsang et al., 2022; Waruwu et al., 2020). Primarily, this leadership style has a strong influence on providing emotional support to employees, enhancing their confidence and self-efficacy in dealing with uncertain problems, stress, and mental exhaustion. Therefore, transformational leadership has a direct influence on increasing the emotional stability of employees (Kailola, 2020).

On the other hand, contingent rewards provide motivation, either financially or non-financially, to employees of the organisation to make their best efforts to achieve

organizational goals (Samson & Ilesanmi, 2019). In addition, in the absence of rewards, employees feel a lack of acknowledgement and recognition of their achievements and successes, which reduces their confidence level and motivation and results in lower morale (Shava & Heystek, 2021). However, a high level of rewards contingent on performance leads to high emotional stability, lower stress, and higher motivation levels. Therefore, similar to transformational leadership, contingent rewards also enhance the emotional stability of employees.

There is limited evidence available regarding the effects of transformational leadership on emotional stability. Similarly, the effects of contingent rewards on emotional stability are also not sufficiently explored. However, the abovementioned studies show that both transformational leadership and contingent rewards have a strong influence on the enhancement of employees' emotional stability. Also, scholars show that contingent rewards and transformational leadership have a significant correlation (Huang et al., 2021). As both predictors have a positive influence on ES, as well as a significant correlation with each other; therefore, it can be concluded that with the utilization of contingent rewards, transformational leadership has a significant influence on increasing the emotional stability of employees. Based on this understanding, the following hypothesis is proposed.

*H13: Contingent rewards have a significant moderating effect on the relationship between transformational leadership and emotional stability.*

### **3.15. Moderation Effects of Contingent Rewards on the Relationship of Transformational Leadership and Job Burnout**

In general, transformational leaders inspire followers to be motivated, stress-free, committed, and engaged, which means that followers will not be overburdened, stressed, or mentally exhausted; therefore, job burnout can be prevented. While the top of that, contingent rewards, if also attached to performance, specific goals, or actions, can lead to

avoiding any kind of burnout or emotional and mental exhaustion. Although the moderation effects of contingent rewards have not been tested by previous scholars, in the presence of the existing literature, one can prove that contingent rewards enhance the negative effects of transformational leadership on job burnout. Previous scholars have found that both TL and CR have a negative influence on JB, which means that, owing to increasing TL and CR, JB will reduce continuously.

Labrague et al. (2020) conducted a study in the context of healthcare and found that the nurses or administrative staff are more inspired, motivated, and committed along with less tension, stress, and emotional exhaustion, and these sampling members are under transformational leadership. They further noted that most of the respondents opined that this leadership has a high level of interaction with followers, tries to determine their needs and demands, and facilitates them, which reduces their stress level despite the high level of work burden. The authors suggested personality-based and reward-based TL to further enhance these effects. Dóci et al. (2020) found that TL has a direct positive link with the mental stability of employees because they feel relaxed while receiving leadership support, inspiration, and motivation; thus, stress level, mental exhaustion, and depression decrease. In another significant contribution by Gaudet et al. (2014), the authors asserted that leadership types based on contingent rewards have a negative influence on mental exhaustion. In other words, they found that leadership styles which implement the contingent reward system can reduce the mental exhaustion of their followers.

Choi et al. (2012) have found a negative relationship between contingent rewards and job burnout. The authors also found that organizational support, especially by supervisors and leadership, had a negative impact on job burnout and turnover intention. It is important to note here that both rewards and leadership style has a negative impact on job burnout as well as turnover intention. In addition, Basińska and Wilczek-Rużyczka

(2013a) found that rewards play a significant role in decreasing the job burnout of surgical nurses despite the heavy burden and strict job demands. Another study found that both health-oriented leadership and rewards have a negative influence on burnout. They further noted that both transactional and transformational leadership play important roles in health leadership. From above findings, it can be concluded that both transformational leadership and contingent rewards have strong inverse relationship with job burnout, emotional exhaustion, and stress, if leadership adopts rewards system, it can have greater impact. Thus, based on these findings, the following hypothesis was developed:

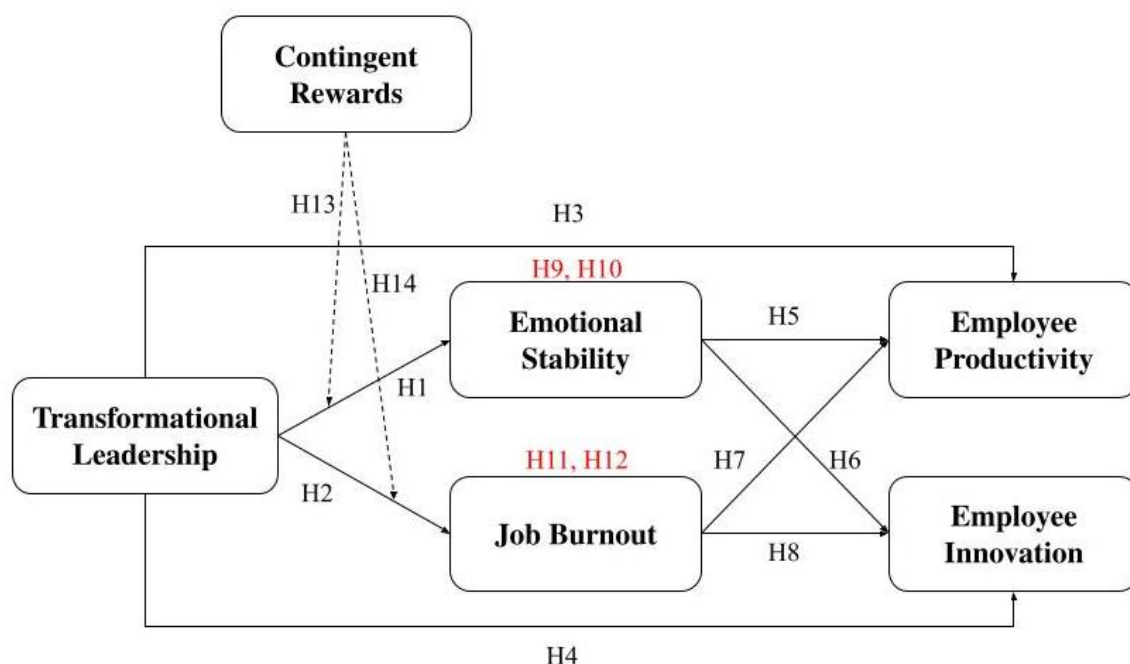
*H14: Contingent rewards have a significant moderating effect on the relationship between transformational leadership and job burnout.*

### 3.16. Conceptual Model

On the basis of theoretical foundations, rational, logical arguments, and previous evidence, the researcher has developed a conceptual model (*see figure 3.1*).

**Figure 3. 1**

*Conceptual Model*



*Note.* This figure is generated by the author.

In this model, there is one independent variable, named transformational leadership, while two mediators are used, namely, emotional stability and job burnout. Additionally, this model contains two dependent variables: employee productivity and employee innovation, while ‘contingent rewards’ are included as moderating variables. Based on the above discussion and previous findings, this model can be explained as follows. Owing to the implementation of transformational leadership, employees feel more emotionally stable and less in burnout conditions. Contingent rewards are introduced as a moderating variable between transformational leadership (IV) and mediating variables (emotional stability and job burnout) because they amplify or mitigate the direct effects of leadership behavior on employee psychological states. Leadership alone may provide guidance and motivation, but the presence of contingent rewards ensures employees are recognized and incentivized for aligning their behavior with organizational goals. Previous studies have emphasized that contingent rewards can enhance emotional stability by reducing uncertainty and anxiety related to employee roles and responsibilities (Hwang & Jung, 2018).

In the case of job burnout, contingent rewards act as a buffer against the negative effects of excessive workload and stress by providing employees with tangible benefits that justify their efforts, thereby reducing the likelihood of burnout (Nguyen et al., 2022). The moderating role of contingent rewards ensures that the positive influence of transformational leadership is reinforced, especially in high-pressure industries such as petrochemical sectors where motivation and recognition are critical for sustaining employee performance. When rewards are attached to their performance, goals, and behaviours, these effects are further influenced. Consequently, lower job burnout and a higher level of emotional stability increase employees’ productivity and innovation levels.

### **3.17. Chapter Summary**

With respect to the contribution of this study, previous studies have not explored the mediating effects of emotional stability and job burnout. In addition, the moderating effects of contingent rewards were lacking. However, the relationship between transformational leadership and emotional stability has not been sufficiently explored. However, the variables considered in this study were proven to be interrelated. Based on previous findings, it appears that transformational leadership has a significant positive impact on emotional stability, productivity, and innovation, while it has a negative influence on job burnout. Apart from this, the positive impact of emotional stability on productivity and innovation has also been found in previous studies, whereas job burnout has a negative effect on both productivity and innovation. However, the mediating role of emotional stability and job burnout was proposed based on Baron and Kenny's criteria. Additionally, this chapter discusses the moderation effects of contingent rewards.

## **Chapter 4: Methodology**

### **4.1. Introduction**

This chapter provides a comprehensive overview of the methods, tools, and techniques used in this study. It begins by discussing the population and sampling techniques employed to provide insight into the selection process. The research design was structured around the research onion model, with each layer of the onion explained in detail, including the reasons for choosing or rejecting specific techniques. The data collection process was thoroughly explained using a questionnaire designed by previous scholars. This chapter discusses the various tests and statistical methods applied to analyse the collected data, providing a clear picture of the analytical approach taken. Additionally, ethical considerations are outlined in this chapter to ensure that the study adheres to the best practices in the research. The chapter concludes by summarising the key findings, highlighting the significance of the research and suggesting areas for future research.

### **4.2. Population and Sample**

This section highlights the selected population as well as the sample for this study. It also elaborates on the sampling techniques and rationale for choosing specific sampling techniques in this study. Furthermore, this section also highlights the sample size and its method of calculation. First, the population is termed the whole group, community, or institution from which the researcher tries to draw conclusions (Barreiro & Albandoz, 2001). Lakshmi (2020) defined it in this way the population is the sum of all the persons, things, organisations, institutions, or any objects which are the subject matter for the researcher. Similarly, Eden and Nielsen (2020) noted that the entire group is a subject matter and of which the researcher is interested in drawing conclusions. Thus, based on these definitions, the current study includes all employees of petrochemical organisations working in Abu Dhabi.

This industry was selected because it contributes approximately 20% to the manufacturing industry and 10% to the GDP of the UAE (Emirates NBD, 2022). In addition, there is limited evidence regarding such research studies in the selected industry. Moreover, it is also convenient for researchers to approach these organisations and collect data through face-to-face interactions. In the case of a small population, it is easy to approach the entire targeted population; however, in the case of a large population, commonly, researchers prefer to select a portion or part of the population, which is termed a sample (Saunders et al., 2009). Therefore, for this study, the researcher chose a sample larger than the required sample size as a large sample represents the entire population more accurately (Eden et al., 2020).

In order to select a sample, it is significant to choose a sampling technique which accurately selects sample participants from the targeted population. Berndt (2020) noted that sampling methods ensure the accuracy of sample selection, which, if not selected correctly, reduces the accuracy and credibility of the study. For instance, if the researcher chooses participants from one department of an organisation, while the population includes employees from all departments, the results represent only one department, and not the entire organisation.

Amongst the sampling techniques, primarily, two kinds are identified by previous scholars based on the exact population. Pace (2021) stated that if the size of the population is known, the researcher will be able to know the probability of selecting each participant; therefore, in this situation, probability sampling techniques are appropriate. On the other hand, if the exact size of the population is not known, the researcher will not be able to identify the probability of inclusion of each participant in the sample; therefore, such a situation will lead to choosing non-probability sampling techniques. In the current study, the targeted population included all employees working in petrochemical organisations in

Abu Dhabi, which is not exactly known; therefore, non-probability sampling techniques were suitable for this study. Among the non-probability sampling techniques, convenience sampling was employed.

Suen et al. (2014) noted that the convenience sampling technique is preferred among researchers owing to the easiness of selecting respondents and collecting data. Sedgwick (2013) asserted that convenience sampling is important to save time. It is also cost-effective as the researcher selects respondents in accordance with his/her own convenience (Etikan et al., 2016). Owing to the ease of the researcher, this sampling method is helpful for collecting a large amount of data (Emerson, 2015). In addition, convenience sampling is appropriate in the collection of data from organisations about which researchers have limited knowledge, while this technique also requires the following limited rules and regulations. Therefore, this technique is suitable in situations where the main concern is the time, cost, and ease of the researcher. Based on these aspects, the current study has selected a convenience sampling technique (Stratton, 2021).

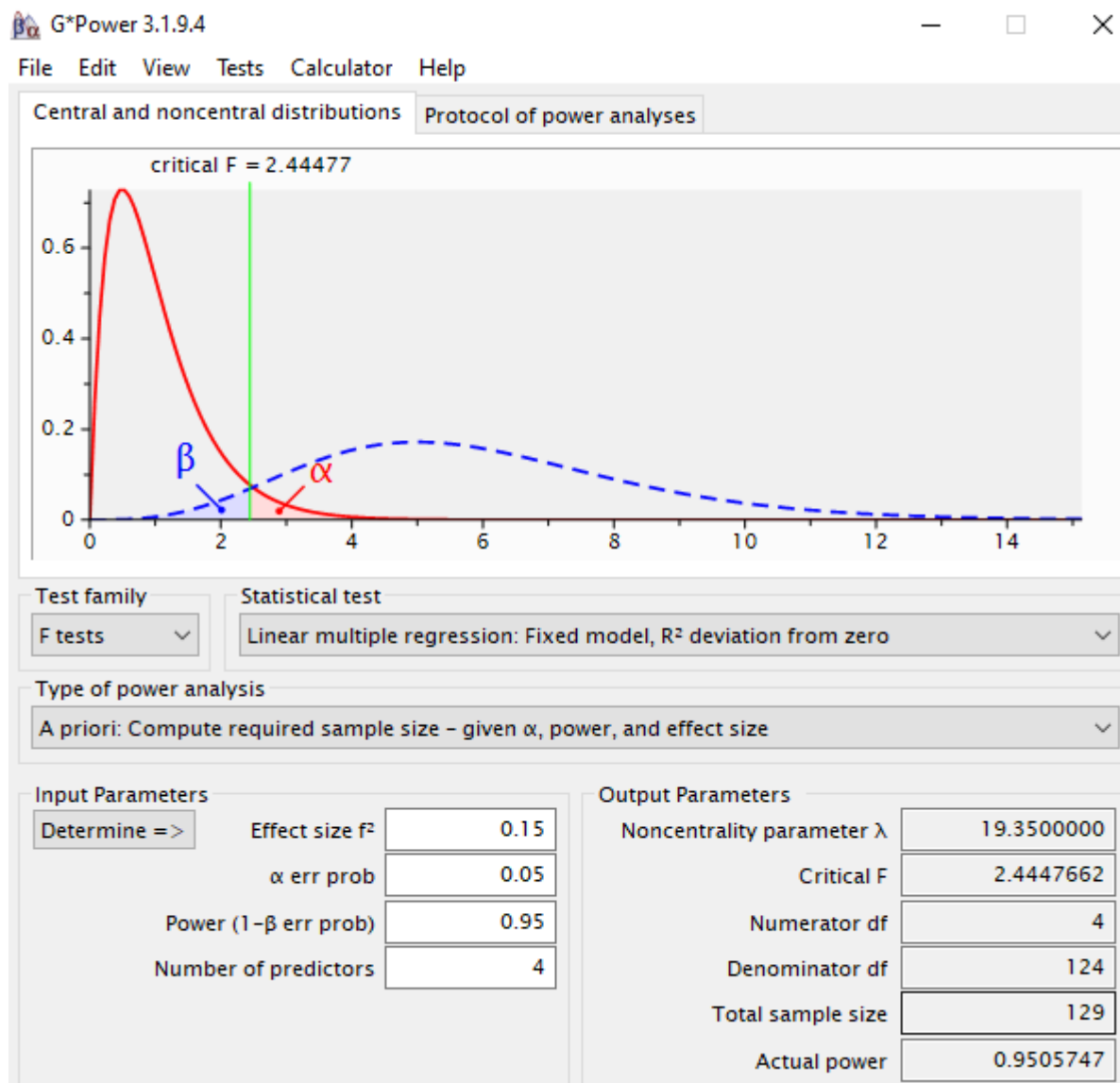
#### **4.2.1. Sample Size**

Scholars ensure the accuracy of their research at each stage; therefore, the sample size is necessary to make it clear that the study has chosen sufficient samples to represent the population. Krejcie and Morgan (1970) argued that a small sample size is a question mark on the findings of a research study, because it may not include the necessary sampling members to represent the entire population. Similarly, Whitley and Ball (2002) noted that a large sample size is a more accurate representation of the population as compared to a small sample. Therefore, in the effort to determine the sample size, many formulas, calculators, software, or methods have been introduced by previous scholars. Amongst these methods, one is the usage of G\*Power software, which is in line with the recommendations of previous scholars (Andrade, 2020b; Kang, 2021). Therefore, the

current study employed the G\*Power software to determine the sample size (see figure 4.1).

**Figure 4. 1**

*Sample Size Calculation with G\*Power*



*Note.* This figure is generated by the author.

In order to calculate the sample size, the researcher has used 0.15 effect size, 0.05 probability of error, and 0.95 power, which is recommended and selected by default in case of finding the sample size for causal relations (Khalilzadeh & Tasci, 2017; Serdar et al.,

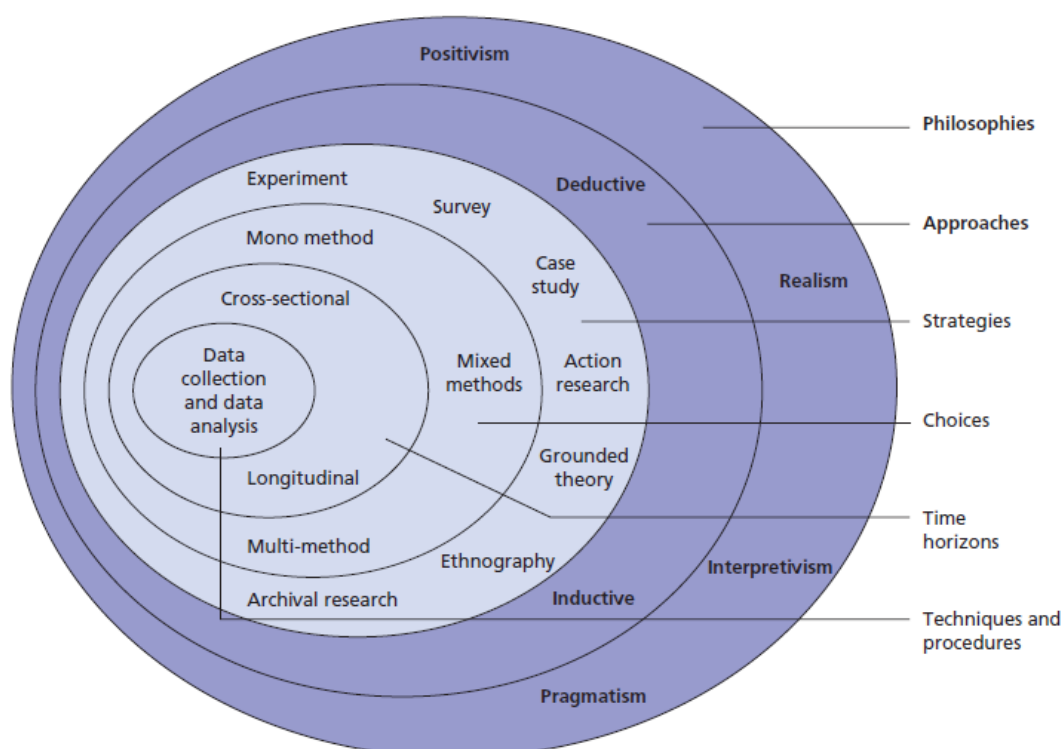
2021). In addition, based on the research framework (see figure 3.1), four predictors were selected in the software, resulting in 129 minimum required sample size for this study. However, the researcher employed a larger sample in order to better represent the population (Zikmund, Carr, et al., 2013).

### 4.3. Research Design

While conducting a research study, every researcher must make certain choices for their study. These choices, if selected incorrectly, can make the study incorrect and invalid. Studdert et al. (2020) highlighted that certain research studies are invalidated owing to wrong methodological choices; therefore, it is significant to employ the right and appropriate methods for the research study.

**Figure 4. 2**

*Research Onion*



*Note.* This figure is generated by Saunders et al. (2009)

A lot of previous researchers have used research onion to explain their choices and selections of study methods. Saunders et al. (2007) have introduced this research onion, which has different layers, and from each layer, a researcher has to choose an option which may be appropriate to a particular study (*see figure 4.2*). Similarly, in this study, each choice was selected based on previous evidence.

#### **4.3.1. Philosophy**

Saunders et al. (2009) argued that the way through which we look into the world and the way in research we collect data and analyse it is termed philosophy. Primarily, how we look at the world is divided into three types, including the first ontology, which is related to the reality of the world. Researchers are divided into two groups: objectivism (existence of social entities without social actors' influence) and subjectivism (existence of social entities with social actors' influence). The second type is epistemology, which is concerned with highlighting the knowledge which is acceptable in a field. In epistemology, there are two kinds of researchers, including those whose point of view is concerned with 'resources' and those concerned with 'feelings.' Amongst these, the first group of researchers is closer to natural scientists. Finally, the third form is termed 'axiology', which is related mainly to the choice of values. It means these researchers believe that the inclusion of values in research has significant importance.

Based on three major kinds of worldviews, the four philosophies presented in figure 4.2 can be explained; however, this study employs positivist philosophy. Positivism philosophy is concerned with taking the approach of natural scientists, where the researcher will not include their own thinking, emotions, or understanding in the results but rather prefer to present the responses and results as they are observed. In other words, positivism philosophy suggests detaching the researcher from the research study in the

view that it will not inculcate its own understanding but rather will pick up the objective approach (Remenyi et al., 1998).

In addition, it supports the ‘resources’ researchers, where findings will be based on observable reality, independent of values, emotions, and social actors. In this philosophy, the researcher utilises the existing theory instead of developing a new one. It means the major purpose of such studies is to prove the findings of existing theories (Saunders et al., 2009). Based on the observable facts and collected data, hypotheses were generated, which were then tested and either rejected or accepted. These findings lead to an improvement in the existing theory, which further suggests improvements by future researchers. Again the cycle repeats itself, and this process continues (Bell et al., 2018).

As mentioned above, this philosophy is concerned with research processes that consider facts, rather than impressions. These facts are related to natural scientists’ views of reality. Such researchers will adopt every choice based on a highly structured methodology in order to provide flexibility for future replications of the studies (Gill & Johnson, 2002). Importantly, this philosophy is selected for this study, as the current research study is concerned with testing the existing theory rather than developing a new one. In addition, the current study was concerned with collecting data without manipulating or inculcating the understanding of the researcher. Zikmund, Carr, et al. (2013) proposed that studies which are concerned with testing the existing theories should go for the positivism philosophy. Apart from this, many previous studies, similar to the current study, have adopted the positivism philosophy (Green et al., 2013; H. Khan et al., 2020b; Salem, 2015).

#### **4.3.2. Approaches**

Sahay (2016) asserted that research approaches are broad and include overall techniques, procedures, or plans based on which researchers adopt the methods of data

collection and analysis. Primarily, there are two types of approaches (deductive and inductive), which are represented in figure 4.2. This study has employed a deductive approach. Saunders et al. (2009) proposed that the deductive approach is related to theory testing. This means that the new theory has not been developed, and the existing theories have been tested. According to Zikmund, Carr, et al. (2013), the deduction approach is considered to be a scientific approach; therefore, it suits the positivism philosophy, where the researcher presents the results without inculcating his/her own thoughts. Sreejesh et al. (2014) have asserted that the deductive approach works on natural sciences. In order to better understand the process of the deductive approach, Robson (2002) noted that five stages are important to discuss.

First, the researcher develops hypotheses, which are developed based on the previous literature or through the identification of the problem statement; thus, this problem helps the researcher to define objectives and research questions in order to develop hypotheses (1). Secondly, these hypotheses are explained with reference to the relationship of variables with each other. In other words, these hypotheses are elaborated on in operational terms (2). The next stage is related to testing these hypotheses by applying various statistical techniques (3).

Subsequently, the researcher analyzes the outcomes based on the results, where either the hypotheses are rejected or accepted (4). The final stage is related to the modification of the theory, if necessary, or similar findings (5). Quinlan et al. (2015) have noted that the deductive approach is best suited for quantitative studies because it adopts the positivism philosophy and maintains structured methods. Importantly, the deductive approach is utilized to analyse the causal relationship between variables, and Saunders et al. (2009) move towards generalization of findings. Based on these choices, a deductive approach was selected for this study.

### **4.3.3. Strategies**

Figure 4.2 shows various research strategies which are either related to the deductive approach or inductive approach (Saunders et al., 2009), and these strategies are important; however, this study has employed a survey strategy based on the following points. Saunders et al. (2009) asserted that the survey strategy is more suitable for the deductive approach and positivism philosophy. The survey is also suitable for the current study and is extensively utilised because it allows researchers to gather a large amount of data, which more accurately represents the population (Bartholomees, 2006). The survey strategy leads to the collection of data with the help of a questionnaire, which is often standardised; therefore, it can be reused for future studies, which means that the studies can be replicated with similar results. This study collected data through a questionnaire in a standardised manner; therefore, this strategy is suitable. In addition, this strategy would allow the researcher to see the causal relationship between the study variables, which is in accordance with the objectives of this study. Based on the above points, it can be concluded that the survey strategy was suitable for the current study.

### **4.3.4. Choices**

With respect to choices, there are majorly three types, as represented in figure 4.2. These types are defined on the basis of quantitative (numeric) and qualitative (non-numeric) data. In general understanding, the mono method is concerned with either selecting quantitative or qualitative data, while multi-method can be referred to as the possibility of choosing multiple types of data; however, in mixed methods, the data will include both quantitative and qualitative (Saunders et al., 2009). From this distinction, it is obvious that the researcher employed a mono-method in the current study; however, this study utilised a quantitative method. Sekaran and Bougie (2019) asserted that quantitative methods would employ quantitative strategies and approaches, such as the deductive

approach and survey strategy with a questionnaire to collect data, while for qualitative methods, the choice will involve inductive along with interviews or observations to collect data.

Furthermore, Gray (2019) elaborated that positivism philosophy is best suited for quantitative data, as numeric data can be evaluated without an alternative explanation. Quantitative methods limit the researchers to asking predefined questions while also limiting the respondents to answer within the defined and provided options. However, importantly, these methods are useful, as data cannot be manipulated; thus, they present the true and fair views of respondents. In addition, quantitative data can be analysed using statistical tools and methods, which are time-saving and accurate. Apart from this, Saunders et al. (2007) and Zikmund, Carr, et al. (2013) recommended utilizing quantitative data along with a deductive approach to the positivism philosophy.

#### **4.3.5. *Time Horizons***

During the research, it is important to decide whether to present the findings at a certain point in time or to present findings in accordance with the series of time frames. Researchers have linked ‘cross-sectional’ with a specific point in time; however, ‘longitudinal’ is concerned with a series of timeframes regarding findings (Gray, 2019; Quinlan et al., 2015). In other words, Saunders et al. (2009) asserted that the collection of data only once during a study is termed cross-sectional while collecting data more than once or in the form of a series is termed longitudinal. Sekaran and Bougie (2019) argued that a cross-sectional design is more suitable when the researcher aims to present findings only once and not at presenting a comparison. The current study employed a cross-sectional design, as there was no objective comparison of the results at multiple time periods.

#### 4.4. Data Collection

The research design explained above mentioned the use of research questionnaires to collect data. In this study, a quantitative structured questionnaire was maintained. Many researchers have highlighted the questionnaire design and the benefits of using a questionnaire (Rattray & Jones, 2007; Sanchez, 1992). Importantly, the questionnaire was structured with predefined questions adopted from instruments developed by previous researchers. With this structured questionnaire, data for this study was collected.

For data collection, a physical visit was preferred instead of an online survey. Previous scholars have highlighted various benefits of field surveys rather than online collecting data. Although the online survey is helpful in saving resources and time, as well as providing access to a large portion of the population, certain disadvantages may lead to preferring face-to-face and paper surveys instead of online surveys. Andrade (2020a) asserted that research is only beneficial; its findings can be generalised to a large audience. However, owing to an online survey, many limitations prevent the generalisation of findings. For instance, Andrade (2020a) noted that, in an online survey, there could be many biases among participants, and the respondents could not be described. Similarly, Duda and Nobile (2010) found that during an online survey, respondents could not be engaged for a long time; therefore, owing to less engagement, they will not fill the responses with full attention, which may lead to filling answers without even reading the questionnaire.

During an online survey, the researcher has to remind the respondents multiple times, which may cause irritation for participants; thus, in search of completion of quick responses, the answers may be filled without attention. In cases where an identification tool is not utilised, it is difficult to find respondents who have completed the responses. Primarily, it could be a family member, friend, or person who may respond multiple times

(Wouters et al., 2014). Apart from this, many respondents may not have Internet access; therefore, reaching the appropriate sample of participants may be limited. Nayak and Narayan (2019) further highlighted a point and stated that lengthy online questionnaires annoyed the participants, resulting in fake responses, as mentioned above, without reading the questions. Similarly, there are other limitations, such as the possibility of deletion of online responses, and the lack of presence of researchers leads to less attention and response rate. Owing to these limitations, this study employed face-to-face or paper surveys by physically visiting petrochemical organisations.

Now important for a face-to-face survey, first, the researcher obtained permission from the management of the company. In accordance with the appointment and given time, the researcher visited petrochemical organisations to collect data. Here, one thing is important to mention, owing to the current COVID-19 situation. The researcher maintained social distancing and other proper precautions to protect themselves and others from the negative effects of the pandemic. As the model of this study suggests, data were collected from all employees, except for those leaders who were not answerable to anyone. In this situation, the employees, first-line managers, and middle-rank managers were selected. Before distributing the questionnaire, the free will and willingness of respondents were inquired about. Each respondent shared a questionnaire in a printed form. The researcher helped respondents if they faced any kind of language issue or difficulty in understanding; however, the final answers were their own in accordance with their understanding and experience.

For data collection purposes, it may not be concerned with the number of employees available on the selected date. Therefore, the researcher visited multiple times to complete the desired number of respondents for this study. It is important to note that a large sample size represents the population of the study more accurately. Therefore, despite

the requirement of 129 respondents, the researcher tried collecting data from a maximum number of employees of petrochemical organisations so that the results could be more generalised. Initially, 550 responses were obtained. The collected data were evaluated before the final sample was finalised. Some responses may not be appropriately filled. For instance, Ballou and Markesich (2009) noted that not all collected responses could be finalised for the sample number; rather, some responses may be removed owing to the inappropriateness of filling responses.

Some participants may not answer all the questions, and some may fill in responses without appropriately reading the questions, which represents a pattern in their filled responses. Thus, such responses should be removed before finalising the sample size. Based on this understanding, the researcher closely examined each collected response and removed questionnaires which would not be filled appropriately. After removing such responses, 539 were finalised as the sample size.

#### **4.5. Data Analysis**

Eden et al. (2020) noted that in order to examine and find useful information from collected data, researchers utilized statistical methods and tools, which is termed data analysis. Eden and Nielsen (2020) elaborated on this as a process of evaluating collected data to extract information for an effective and efficient decision-making process. Therefore, in the current study, data were analysed using different statistical tools and methods with the help of SPSS and SmartPLS.

##### **4.5.1. Data Entering and Cleaning**

After collecting the data, the first task was to enter the data into Excel, which was utilised for both SPSS and SmartPLS, with different file extensions. Data entered into SPSS were coded as prescribed in the questionnaire. For instance, the main variables were evaluated on a scale of 1 to 5; therefore, 1 was coded as strongly disagree and 5 was coded

as strongly agree. After coding, it is important to determine the missing values and outliers. For this purpose, the frequency distribution tells us the missing values, along with the frequency and percentage of all variables. Outliers were examined using descriptive statistics, where the minimum and maximum values indicate whether the entered values were within the defined range. For instance, in scale variables, the defined range is 1 to 5; therefore, if any value out of this range is entered, it is highlighted from the minimum and maximum values. In the case of missing values and outliers, the filled questionnaires were revised to correct the values.

#### **4.5.2. *Exploratory Factor Analysis (EFA)***

The reliability and validity of the instruments are of paramount importance to the credibility of the research study. This study examined the factor loadings, reliability, and validity of these instruments. In addition, the relationships between the variables were examined. Watkins (2018) explored and elaborated on the effects, significance, and importance of EFA. Watkins has noted that EFA highlights the smallest measurement factors, which are also termed dimensions, items, or factors, regarding a variable. The author further noted that the factor loadings of these items represented the contribution of each item in the measurement of the main latent construct or variable.

It should be noted that these factor loadings should be greater than 0.3. Otherwise, these should be removed from the measurement of that variable (Howard, 2016; Peterson, 2000). These factor loadings help identify the reliability, validity, and relationship between the variables. Fink and Litwin (1995) stated that the internal consistency of an instrument or scale is measured through reliability. In other words, consistency requires that if the same instrument is used multiple times to measure a variable, it gives similar results; therefore, consistency is important for measuring the reliability of an instrument. For this

purpose, previous scholars have extensively utilised Cronbach's alpha and composite reliability, both of which were used in this study.

Apart from the above, validity has two kinds, convergent and discriminant, where convergent presents the degree to which the constructs or variables, which should be related, are in reality associated. Thanasegaran (2009) elaborated on this in a simpler way and noted that the items of a single variable should be correlated with other items of the same variable. This shows that these items measure this variable. For this purpose, the common average variance extracted (AVE) method is utilised, which is also used in this study.

On the other hand, the discriminant validity highlights the degree to which the items which should not be related are, in reality, unrelated. Bannigan and Watson (2009) defined it in this way that the items of one variable should have a stronger internal relationship than their correlation with the items of another variable. This method distinguishes the measurement of items of different variables, which means that the items of each variable are developed to measure only that specific variable and not any other variable. This validity is evaluated using the criteria proposed by Fornell and Larcker (1981), where the square root of AVE is compared with the correlations among variables.

The third important aspect of EFA is determining the correlation between variables. For this purpose, the correlation coefficient was utilised, which helped identify the strength of correlation among all variables in the study. In this method, a primary understanding of whether the two constructs are correlated was examined. Different previous scholars have recommended the use of Pearson correlation (Asuero, Sayago, & Gonzalez, 2006; Benesty et al., 2009).

#### **4.5.3. Demographic Analysis**

The first part of the questionnaire was based on information about the participants ([see Appendix A](#)); therefore, this information was examined through frequency distribution. Dicle and Dicle (2018) noted that this analysis presents the outcome in the form of tables and graphs, where the frequency of something, along with the percentage, is displayed. For instance, the frequency distribution of gender highlights how many there are males and females (highlighted in frequency and percentage). Sirkin (2006) recommended using frequency distribution and noted that it is the most common method to evaluate the demographic information of respondents. Therefore, the current study employed this method to extract useful information about respondents.

#### **4.5.4. Descriptive Statistics**

After evaluating the demographic profile, the common and important practice of scholars is to highlight the summarised results in the form of the mean and standard deviation of responses for each main variable. Fisher and Marshall (2009) recommended this test, and George and Mallery (2016) elaborated on it as a method to provide an overview, satellite view, and overall inclination of variables. Here, the mean value represents the central tendency and average values or responses of participants, whereas the standard deviation is important to note the deviation of responses from the average values. These values were significant in highlighting the inclination of the responses. For instance, the main variables were examined at a Likert scale of 1 to 5; therefore, the average response, if they occur to be higher than 3, it means the inclination of most of the respondents' answers is to 'agree on the side.' On the other hand, if the average value is below 3, it means most of the responses have answered either disagree or strongly disagree; therefore, it can be concluded that the majority of the respondents disagree with the questions being asked in the questionnaire particular to that variable.

In addition, descriptive statistics also include the normality of the data, and importantly, the values of skewness and kurtosis are significant. If these values are between +3 and -3, the data are considered as normally distributed and collected, which indicates the approval of further advanced and inferential analysis.

#### **4.5.5. *Common Method Bias***

This bias is identified with the help of Herman's single-factor method. Previous scholars believe that this error or bias appears to be due to the wrong method rather than instruments or scales. For instance, during an electronic survey, many individuals may be unaware of this type of survey, which affects their responses compared to those who are aware of this type of survey. This means that an incorrect survey method is utilised to collect data from the sample participants, who are not aware of it, and hence, their results may be influenced. Therefore, this error must be removed in order to highlight the true representation of participants' responses. Herman's single factor can highlight the presence of this error. Many previous scholars have not only utilised this method but have also recommended it (Aguirre-Urreta & Hu, 2019).

#### **4.5.6. *Multi-collinearity***

In some situations, two or more variables may have a high level of intercorrelation, which may affect the confidence intervals. Hence, the credibility of the true results is negatively affected. Researchers believe that there should not be a high correlation between two or more variables in such a way that those variables may not be distinguished, but rather may be considered as 'one' (Alin, 2010; Mansfield & Helms, 1982). This issue is examined with the help of the variance inflation factor (VIF), where the values of VIF should be between 1 to 5 (Thompson et al., 2017).

#### **4.5.7. Structural Equation Modelling Technique**

In addition to determining the correlation between variables, it is important to evaluate the individual effect of each predictor on the dependent variable. Therefore, regression analysis is commonly utilised for this purpose (Seber & Lee, 2012); however, for complex models, it is not suitable. Rather, the structural equation modelling (SEM) technique is preferred (Keith, 2019). Gefen et al. (2000) also stated that SEM is preferred over regression owing to the quality of SEM's ability to analyse complex models with the capability of assessing both path and indirect effects. Therefore, this technique was utilised because the current study model is complex with path, indirect, and moderating effects.

#### **4.6. Measurements**

This study has six variables, which were measured through adapted scales developed by previous scholars ([see Appendix A](#)). For this purpose, the following are the variables, along with details of the scales:

##### **4.6.1. Transformational Leadership (TL)**

To measure TL, the researcher used a scale developed by McColl-Kennedy and Anderson (2002). This scale comprises four items that measure the personal attention given by leaders to their followers, their sense of mission, enthusiasm, and their use of intelligence. This scale is measured on a 7-point Likert scale; 1 is regarded as strongly agree, and 7 is regarded as strongly disagree. A sample item for transformational leadership is “*our leadership emphasizes the use of my intelligence.*” The authors found 0.89 as the reliability of this scale. Thus, the scale has good reliability, which helps in measuring transformational leadership in this study.

##### **4.6.2. Emotional Stability (ES)**

Judge et al. (2004) developed a 12 items scale to measure ES, which is utilized in this study. This scale measures employees’ confidence and depression levels, their level of

effort to succeed, failure, success, level of control, satisfaction, surety level, capability to deal with problems, and hopefulness. This scale was also measured on a 7-points Likert scale, where 1 = strongly agree and 7 = strongly disagree. The sample item for this scale is “I am capable of coping with most of my problems.” The reliability of the scale measured by the author was 0.87, which is good; therefore, this scale was employed to measure emotional stability in this study.

#### **4.6.3. *Job Burnout (JB)***

In order to measure job burnout, the researcher employed the scale developed by Malach-Pines (2005). This scale comprises five items that measure the level of tiredness, disappointment, hopelessness, depression, and worthlessness or failure of the respondents in this study. All items are measured on a 7-points Likert scale, where 1 is always considered as “always”, while 7 is considered as “never”. The reliability of this scale was measured by the author as 0.88, which is good; therefore, this scale was used to measure job burnout. A sample item for this scale includes “disappointed with people.”

#### **4.6.4. *Employee Productivity (EP)***

The productivity of employees is measured with an instrument developed by CHEN and Tjosvold (2008). This scale comprises five items that evaluate employees’ performance, their level of quickness and efficiency, task accomplishment, and growth in achievements. This scale was measured on a 7-point Likert scale, where 1 would be considered strongly agree, while the 7<sup>th</sup> option would indicate strongly disagree. The reliability of the scale was 0.86, as measured by the authors. The sample item for this scale is “I accomplish tasks quickly and efficiently.”

#### **4.6.5. *Employee Innovation (EI)***

Lukes and Stephan (2017) developed an instrument to measure employees’ innovation in an organisation. This instrument consists of 6 items. Additionally, the

researcher also employed the 3 items scale developed by Howell et al. (2005). These instruments have 0.87 and 0.81 reliability, respectively. Through these two instruments, the researcher evaluated the search of individuals for new ideas, their habits of trying new things, involving people to get help, planning for implementing new ideas, and their level of consistency to not give up. These instruments were measured on a 7-points Likert scale, where 1 = strongly agree and 7 = strongly disagree. A sample item is, “I search for new ideas of other people in order to try to implement the best ones”.

#### **4.6.6. *Contingent Rewards (CR)***

An instrument developed by Densten (2006) was used to measure CR. It consists of five items. This instrument is measured on a 7 points-Likert scale, where 1 is considered strongly agree and 7 is strongly disagree. The reliability of this scale, measured by the authors, was 0.88, which is good. Using this scale, the researcher examined the level of financial and non-financial rewards offered to employees, which are contingent on performance, goal achievement, or specific behaviour.

### **4.7. Pre-Testing of Research Instruments**

Before initiating the final data collection, the research instruments were pre-tested to ensure their validity, reliability, and suitability for the target population. The pre-testing phase involved administering the questionnaire to a pilot sample of 30 employees working in the petrochemical sector in Abu Dhabi, ensuring representation of the broader sample's characteristics in terms of job roles and experience. This pilot sample size is consistent with recommendations in research methodology literature for ensuring sufficient variability in responses (Hertzog, 2008).

#### **4.7.1. *Process of Pre-Testing***

The participants in the pilot study were provided with a detailed explanation of the study's purpose and were asked to complete the survey instrument under conditions similar

to the actual data collection. After completing the questionnaires, structured feedback sessions were conducted to gather insights regarding the clarity, relevance, and overall comprehensibility of the items. Respondents were encouraged to highlight ambiguous or confusing questions, overly complex phrasing, and any items they found irrelevant or redundant.

#### **4.7.2. *Feedback Received and Adjustments Made***

Respondents indicated that some items related to emotional stability and contingent rewards were overly technical or abstract, which could lead to misinterpretation. These items were rephrased using simpler and more context-specific terminology to enhance comprehension. Feedback suggested that certain questions were repetitive, particularly in sections measuring transformational leadership behaviors. To address this, redundant items were eliminated, reducing the total number of questions and making the instrument more concise without compromising its comprehensiveness. Respondents reported that the Likert scale format was not consistently clear across all sections. Adjustments were made to standardize the formatting and ensure consistency throughout the questionnaire. A few items were flagged as potentially irrelevant to the cultural and organizational context of the petrochemical sector in Abu Dhabi. These items were either modified to align with the local context or replaced with more relevant constructs based on prior literature and industry norms.

#### **4.7.3. *Post-Adjustment Validation***

After incorporating these adjustments, the revised instrument was shared with three domain experts for additional feedback on content validity. Their input confirmed that the refined questionnaire effectively captured the constructs of transformational leadership, emotional stability, job burnout, employee productivity, and innovation, while ensuring alignment with the study's objectives and context.

#### 4.8. Ethical Considerations

Ketefian (2015) asserted that each research study must comply with some ethical principles which highlight the credibility of the study. For instance, if some respondents are given bribery to provide biased responses, it will be a questionable practice for the researcher to manipulate the results, which is unethical. Arifin (2018) noted that moral standards highlight mutual respect, promote true knowledge, and prevent researchers from hurting anyone, either emotionally or physically, during the research process. Therefore, Bell and Bryman (2007) introduced 10 different ethical considerations, which can be utilised in any research study. Based on the proposed considerations, the author ensured that no participants were forced to participate in the study, irrespective of the lack of many respondents in the company. This means that the respondents willingly participated without providing any bribery or financial benefits of participation (1).

In any way, there was no violence or harm to anyone during this research process, both emotional and physical. Ma et al. (2018) pointed out that not only human beings but also all living things, as well as non-living things, should be protected and avoid any kind of harm during the research process (2). Third, in accordance with the recommendation of Bell and Bryman (2007), the dignity of respondents was maintained, and the researcher did not use any abusive, violent, discriminatory, or unethical language against the participants. Canagarajah and Stanley (2015) noted that any kind of discrimination based on race, colour, caste, or gender should be avoided; in particular, language should be non-discriminatory (3). One of the most important ethical considerations is ensuring the privacy of participants. The researcher ensured the use of personal details only for this study, and this information was not shared with anyone else.

Most importantly, the information is kept safe in passwords and encryption-protected drives (4). The researcher acknowledged the previous researchers' work with

appropriate references (5). Researchers have avoided any kind of subjectivity; rather, they prefer to professionally ensure objectivity (6). Furthermore, the researcher complied with the principles and laws regarding the data protection acts of the UAE Panel Code (7). Any kind of funding or affiliation with persons or organisations related to research has been declared (8). During communication regarding this research, honesty and transparency are maintained (9). Finally, the researcher avoided any misleading or incorrect information as well as bias. This research ethics were ensured during this research project.

#### **4.9. Chapter Summary**

This chapter elaborates on the techniques and methods used in this study. First, the study population included all employees working in petrochemical organisations in Abu Dhabi. Convenience sampling was used, and the sample size was 539. In the research design, the researcher chose a survey strategy with a cross-sectional time horizon and quantitative method. In addition, philosophy is positivist with a deductive approach. It is also important to note that data collection is based on a face-to-face visit with a pre-appointment, along with caring about all ethical considerations and precautions to avoid the negative effects of a pandemic. The collected data were evaluated using SPSS and SmartPLS, which mainly applied the structural equation modelling technique, resulting in path coefficients and indirect as well as moderating effects.

## **Chapter 5: Results and Findings**

### **5.1. Chapter Overview**

This chapter explains the results and findings of this study. This includes an explanation of the preliminary evaluation, which was specifically related to examining missing values, outliers, normality, and common method bias. Furthermore, this chapter analyzes the demographic characteristics using a frequency distribution. This chapter discusses all psychometric properties, including factor analysis, multicollinearity, reliability, and validity of the constructs. Simultaneously, the structural equation modelling technique is explained with reference to direct, indirect, and moderating effects. This chapter has specifically explained the structural model in five steps, including collinearity statistics, assessing the relevance of path coefficients, coefficient of determination, assessment of effect size, and assessment of predictive relevance.

### **5.2. Preliminary Evaluation**

The preliminary evaluation of survey data is an important step in research because it allows researchers to assess the quality and completeness of the data before analysis (Kwak & Kim, 2017). This evaluation can help researchers to identify potential errors or biases in the data and ensure that the data meets the requirements for the research questions and hypotheses (DeSimone et al., 2015). Survey data may contain missing values, invalid responses, or outliers, which can affect the accuracy of the analysis. Preliminary evaluation can help researchers to identify and address these issues before analysis. Survey data may have been collected by different individuals or methods, leading to inconsistencies or errors (Mishra et al., 2019). Preliminary evaluation can help researchers ensure that the data are of high quality and meet the standards for research (Mertler & Vannatta, 2016).

The survey data may not represent the entire population of interest, which can affect the validity and generalisability of the results. Preliminary evaluation can help

researchers assess the representativeness of a sample and identify any potential biases or limitations (Chu et al., 2016). Finally, the survey data may have been collected using different measures or scales, which can affect the comparability of the data. Preliminary evaluation can help researchers to ensure that the variables are measured consistently and appropriately (Teh et al., 2020). Based on this significance, this study first includes a preliminary evaluation of the collected data before advanced analysis. Particularly, the researcher analysed the missing values, outliers, and common method bias. In this regard, the following sections provide detailed evaluation.

### **5.2.1. *Missing Values and Outliers***

Missing values refer to survey responses which may not be entered by the researcher during data entry, or may not be initially filled in by respondents. On the other hand, outliers are those values which may not fall under the defined range of responses (Teh et al., 2020). For instance, in this research, the main variables were measured on 7 points Likert scale. Here, any value outside the range of one to seven values is considered an outlier. Missing values and outliers can have a negative impact on survey data for several reasons. First, missing values and outliers can bias the results of a survey by distorting the true values of the data. This can lead to inaccurate estimates and can make it difficult to draw valid conclusions from the data (Kwak & Kim, 2017). Second, missing values can reduce the statistical power of the analysis, making it more difficult to detect significant differences or relationships between the variables. This can lead to reduced precision in the estimates and make it more difficult to draw meaningful conclusions from the data (Mertler & Vannatta, 2016).

Thirdly, missing values and outliers can reduce the effective sample size of the survey, which can reduce the power of the analysis and make it more difficult to detect significant differences or relationships between variables (Teh et al., 2020). Outliers can

violate the assumptions of normality, homoscedasticity, and independence, which are necessary for many statistical analyses. This can lead to invalid statistical tests or biased estimates (Mishra et al., 2019). Finally, missing values and outliers can increase the complexity of the analysis by requiring additional statistical methods to handle them. This can make the analysis more difficult to interpret and increase the risk of errors or biases (Mertler & Vannatta, 2016).

In order to avoid these issues, the researcher performed frequency distribution to identify missing values and outliers. The frequency distributions of all items and variables were examined. In a frequency distribution, the minimum and maximum values provide the range of each item and variable, which is necessary to evaluate whether there is any value outside this range. Similarly, the frequency distribution also provides information about missing values. In the initial phase, the researcher removed the questionnaires with missing values before finalising the sample size. However, after the entry of data into the SPSS software, the researcher found no missing values or outliers; therefore, the first step of the preliminary evaluation of data was acceptable.

### **5.2.2. Data Normality**

Data normality in research refers to the distribution of a variable or set of variables in a sample (Mishra et al., 2019). Normality refers to the distribution being bell-shaped and symmetrical, with most of the observations clustering around the mean and a few observations in the tails (Knief & Forstmeier, 2021). Data normality is an important consideration in research because it can affect the choice of statistical tests and validity of the results. Researchers should carefully examine the distribution of their data and, if necessary, use appropriate methods to handle non-normality before conducting any statistical analyses (Orcan, 2020). Incorporating normality statistics allows researchers to assess the robustness of their findings. While SmartPLS is designed to handle non-normal

data, deviations from normality might still impact the interpretation of the results. In addition, including normality statistics promotes transparency and reproducibility in your research (Talib et al., 2022). Therefore, this study used normality statistics to ensure that data were normally distributed.

Skewness and kurtosis are two important measures for analysing data normality in survey research. Skewness indicates whether the distribution is symmetric or skewed (Qu et al., 2020). A normal distribution is symmetric, with the majority of observations clustering around the mean and a few observations in the tails. If the distribution is skewed, it means that the majority of the observations are clustered around one side of the distribution, while the other side has fewer observations (Khatun, 2021). Kurtosis indicates whether the distribution is peaking or flat or not. A normal distribution has a kurtosis value of lower than 3, which means that the distribution is neither too flat nor too peaked (Kwak & Park, 2019). Most researchers suggest that both skewness and kurtosis values should be in the range of  $-3$  to  $+3$  (Khatun, 2021; Mishra et al., 2019; Orcan, 2020). Any value beyond this range indicated that the data were not normally distributed. Table 5.3 shows the values of skewness and kurtosis, which are all within the defined range; therefore, it can be concluded that the data are normally distributed.

### **5.2.3. Common Method Bias**

Common method bias (CMB) is a type of measurement bias that occurs in survey research when the same method or source is used to collect data on multiple variables (Jordan & Troth, 2020). This is also referred to as the method or shared method variance. This bias can arise for various reasons such as the survey context, questionnaires, or respondents (Zhonglin, 2020). In CMB, the respondents may be influenced by the survey method or questionnaire design rather than the construct being measured (Chang et al., 2020). For example, if a survey measures both a predictor and outcome variable using the

same self-reported questionnaire, there is a risk that the respondent's responses to the predictor variable could influence their responses to the outcome variable, leading to an artificial correlation between the two variables (MacKenzie & Podsakoff, 2012).

CMB can be problematic because it can lead to inflated or spurious relationships between variables, which can affect the validity and reliability of survey research results (Kock et al., 2021). If CMB is not addressed, it can undermine the validity of statistical tests and result in inaccurate conclusions regarding the relationships between variables (Conway & Lance, 2010). It is important to identify and analyse CMB because it can undermine the validity of statistical tests and result in inaccurate conclusions regarding the relationships between variables. If CMB is not addressed, it can lead to incorrect interpretations of research findings, which can have significant consequences (MacKenzie & Podsakoff, 2012). For example, in organizational research, incorrect conclusions about the relationships between variables can lead to poor decision making and ineffective interventions.

Harman's single-factor test is an important method for identifying common method bias (CMB) in survey research. Harman's single-factor test is a statistical approach that examines whether a single factor underlies a large proportion of the variance in the data, indicating the presence of CMB (Aguirre-Urreta & Hu, 2019). Harman's test involves conducting a factor analysis on all survey items and examining the resulting factor loadings to determine whether a single factor explains a substantial portion of the variance in the data (Kock, 2020). Fuller et al. (2016) asserted that if a single factor accounts for over 50% of the variance in the data, it indicates a potential issue with common method bias. To evaluate common method bias, the researcher performed factor analysis using SPSS by fixing a number of factors to 1 to examine the percentage.

**Table 5.1***Total Variance Explained*

| Component | Initial Eigenvalues |                  |                 | Extraction Sums of Squared Loadings |                  |                 |
|-----------|---------------------|------------------|-----------------|-------------------------------------|------------------|-----------------|
|           | Total               | % of<br>Variance | Cumulative<br>% | Total                               | % of<br>Variance | Cumulative<br>% |
| 1         | 13.549              | 35.254           | 35.254          | 13.549                              | 35.254           | 35.254          |
| 2         | 5.855               | 14.756           | 50.009          |                                     |                  |                 |
| 3         | 5.473               | 13.778           | 63.787          |                                     |                  |                 |
| 4         | 1.368               | 3.508            | 67.295          |                                     |                  |                 |
| 5         | 1.052               | 2.697            | 69.992          |                                     |                  |                 |
| 6         | .864                | 2.216            | 72.209          |                                     |                  |                 |
| 7         | .799                | 2.048            | 74.256          |                                     |                  |                 |
| 8         | .663                | 1.699            | 75.955          |                                     |                  |                 |
| 9         | .615                | 1.576            | 77.531          |                                     |                  |                 |
| 10        | .574                | 1.472            | 79.003          |                                     |                  |                 |
| 11        | .518                | 1.329            | 80.332          |                                     |                  |                 |
| 12        | .477                | 1.224            | 81.556          |                                     |                  |                 |
| 13        | .455                | 1.167            | 82.723          |                                     |                  |                 |
| 14        | .439                | 1.124            | 83.848          |                                     |                  |                 |
| 15        | .421                | 1.080            | 84.927          |                                     |                  |                 |
| 16        | .401                | 1.028            | 85.955          |                                     |                  |                 |
| 17        | .384                | .985             | 86.940          |                                     |                  |                 |
| 18        | .354                | .907             | 87.848          |                                     |                  |                 |
| 19        | .343                | .880             | 88.728          |                                     |                  |                 |
| 20        | .325                | .833             | 89.561          |                                     |                  |                 |
| 21        | .316                | .809             | 90.371          |                                     |                  |                 |
| 22        | .300                | .769             | 91.139          |                                     |                  |                 |
| 23        | .295                | .757             | 91.896          |                                     |                  |                 |
| 24        | .271                | .696             | 92.592          |                                     |                  |                 |
| 25        | .265                | .680             | 93.272          |                                     |                  |                 |
| 26        | .249                | .640             | 93.912          |                                     |                  |                 |
| 27        | .246                | .630             | 94.542          |                                     |                  |                 |
| 28        | .229                | .588             | 95.130          |                                     |                  |                 |
| 29        | .219                | .562             | 95.692          |                                     |                  |                 |
| 30        | .208                | .535             | 96.226          |                                     |                  |                 |

|    |      |      |         |
|----|------|------|---------|
| 31 | .201 | .515 | 96.741  |
| 32 | .189 | .485 | 97.226  |
| 33 | .185 | .475 | 97.702  |
| 34 | .171 | .440 | 98.141  |
| 35 | .166 | .426 | 98.567  |
| 36 | .161 | .412 | 98.979  |
| 37 | .143 | .368 | 99.347  |
| 38 | .130 | .332 | 99.680  |
| 39 | .125 | .320 | 100.000 |

*Extraction Method:* Principal Component Analysis

*Note.* This table is generated by the author.

For this purpose, a table of the explained total variance was used. Table 5.1 shows the values of total variance explained, where a single factor is presented with 35.254% of the variance. It means a single factor which maximum explains variance shows only 35.254% variance, which is smaller than 50%; therefore, it can be concluded that there is no common method bias in the collected data.

### 5.3. Demographic Profile

A demographic profile refers to all the demographic characteristics included in the study, such as gender, age, qualification, and experience. (Bell et al., 2022). Analysing the demographic characteristics of sample respondents in research is important for identifying biases or limitations in sample selection, examining patterns or trends within the data, controlling for potential confounding variables, identifying disparities or inequities within a population, and providing context for readers (Zikmund, Babin, et al., 2013). Therefore, including information about demographic characteristics in research articles or theses is necessary for ensuring the validity and generalizability of the study results (Hair et al., 2019).

When analysing the demographic characteristics of survey respondents, one of the most prominent and helpful methods for analysing demographic characteristics is frequency distribution (Bell et al., 2022). Frequency distribution is a method of organising data into categories, and then determining the number of observations that fall into each category. It is a simple and straightforward method that provides a visual representation of the data that is easy to understand and interpret (Zikmund, Babin, et al., 2013).

Frequency distribution is particularly useful for analysing demographic characteristics because it allows researchers to identify the most common categories or values for each characteristic (Burns & Burns, 2008). This information can then be used to describe the characteristics of the sample population and compare the sample to other populations or benchmarks. A frequency distribution can also be used to identify patterns or trends within data (Greener, 2022). Frequency distribution is also useful for identifying outliers or unusual values within the data. This information can then be used to identify potential errors or biases in the data or to identify areas for further investigation (Hair et al., 2019).

Table 5.2 shows the frequency distribution of the demographic characteristics of respondents. According to this table, 539 respondents participated in this study, of whom 348 (64.6%) were male and 191 (35.4%) were female. Hence, the majority of the respondents are males. Similarly, this table shows that the majority of the respondents, 277 (51.4%), fell in the age range of 35 to less than 45 years, while the least number of respondents, 14 (2.6%), were less than 25 years old. Therefore, the table shows that more than 50% of respondents are above 35 years of age which also indicates the average age of employees working in the petrochemical industry in Abu Dhabi. Furthermore, table 5.2 shows that 175 (32.5%) respondents were single, while 364 (67.5%) were married, which indicates that the majority of the employees working in the petrochemical industry are

married. Of the total respondents, 205 (38%) had no children, while the majority of the participants, 236 (43.8%), had one to three children. However, the least number of respondents (3.5%) had approximately four to six children.

**Table 5.2**

*Demographic Characteristics*

|                    |                         | Frequency | Percent |
|--------------------|-------------------------|-----------|---------|
| Gender             | Male                    | 348       | 64.6    |
|                    | Female                  | 191       | 35.4    |
|                    | Total                   | 539       | 100.0   |
| Age                | Less than 25 years      | 14        | 2.6     |
|                    | 25 – less than 35years  | 165       | 30.6    |
|                    | 35 – less than 45 years | 277       | 51.4    |
|                    | 45 and above years      | 83        | 15.4    |
|                    | Total                   | 539       | 100.0   |
| Marital Status     | Single                  | 175       | 32.5    |
|                    | Married                 | 364       | 67.5    |
|                    | Total                   | 539       | 100.0   |
| Number of Children | No Child                | 205       | 38.0    |
|                    | 1-3                     | 236       | 43.8    |
|                    | 4-6                     | 79        | 14.7    |
|                    | More than 6             | 19        | 3.5     |
|                    | Total                   | 539       | 100.0   |
| Position           | Worker                  | 279       | 51.8    |
|                    | Junior Manager          | 174       | 32.3    |
|                    | Middle Manager          | 63        | 11.7    |
|                    | Senior Manager          | 23        | 4.3     |
|                    | Total                   | 539       | 100.0   |
| Education Level    | Diploma                 | 50        | 9.3     |
|                    | Intermediate            | 37        | 6.9     |
|                    | Graduation              | 223       | 41.4    |
|                    | Masters                 | 215       | 39.9    |
|                    | PhD                     | 14        | 2.6     |
|                    | Total                   | 539       | 100.0   |

|            |                         |     |       |
|------------|-------------------------|-----|-------|
| Experience | Less than 1 year        | 49  | 9.1   |
|            | 1 – less than 5 years   | 94  | 17.4  |
|            | 5 – less than 10 years  | 174 | 32.3  |
|            | 10 – less than 15 years | 120 | 22.3  |
|            | 15 and above years      | 102 | 18.9  |
|            | Total                   | 539 | 100.0 |

*Note.* This table is generated by the author.

Out of 539 respondents, most of the participants, counted as 279 (51.8%), are workers, while the least number of respondents, counted as 23 (4.3%), are senior managers. Furthermore, table 5.2 shows that only 14 (2.6%) of the total respondents had a PhD degree, while the majority of the respondents, 223 (41.4%), had graduated, followed by 215 (39.9%) who had master's qualifications. Table 5.2 also shows the frequency distribution of experience of respondents. According to this table, only 49 (9.1%) respondents had less than one year of experience, while the majority of the respondents, who were 174 (32.3%), had 5 to less than 10 years of working experience. Overall, more than 70% of the respondents have above 5 years of working experience, which is important for choosing experienced respondents who can better answer the questions, as suggested by Greener (2022).

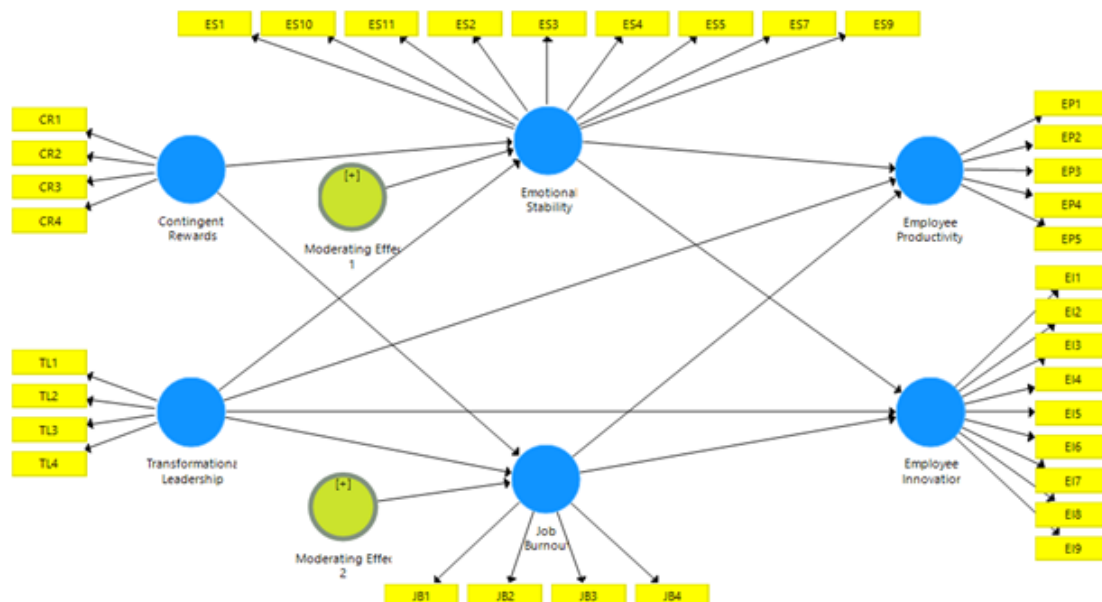
#### **5.4. Operationalization of Constructs**

Operationalisation is a vital process in survey research that involves defining and measuring abstract constructs or variables in observable terms. Although operationalisation is mostly relevant to models when variables are multidimensional, its significance is also important for variables without dimensions (Wright et al., 2012). The operationalisation of constructs is achieved through the use of survey questions or other data collection methods. The process ensures that the constructs being studied can be accurately measured and analysed, providing reliable and valid measures that allow for the comparability of data across studies and researchers (Emmerich et al., 2016).

The importance of operationalisation in survey research is multifaceted. Firstly, it helps to establish clear definitions of the constructs under study, facilitating accurate measurements and valid conclusions (Bell et al., 2018). Second, it allows for the development of consistent measures, ensuring data accuracy and reliability (Greener, 2022). Thirdly, operationalization promotes comparability of results between studies, enabling researchers to make meaningful comparisons across different samples and contexts (Saunders et al., 2007). Finally, it is especially important in survey research because it involves the measurement of abstract or subjective constructs such as attitudes, beliefs, and values. The operational definitions help standardize the interpretation of questions, leading to consistency in data and ease of comparison across studies (Zikmund, Babin, et al., 2013).

**Figure 5. 1**

*Operationalization of Constructs*



*Note.* This figure is generated by the author.

Figure 5.1 shows the operationalisation of the constructs used in this study. The researcher did not use the dimensions of these constructs in the conceptual framework; therefore, figure 5.1 also shows only the latent constructs which are used in the model. In this model, transformational leadership is an exogenous variable that is measured using four items. Emotional stability and job burnout are mediating variables between exogenous and endogenous variables. Her emotional stability was originally measured with 12 items, while job burnout was measured with five items. However, owing to four faulty items, there were some issues in the results; hence, three items from emotional stability and one item from job burnout were removed.

The initial results, which contain issues, are presented in Appendices A, B, and C. Figure 5.1 also shows that employee productivity (measured with five items) and employee innovation (measured with nine items) are the two endogenous variables, while contingent rewards (measured with four items) are moderating variables in the relationship between transformational leadership and the two mediating variables (emotional stability and job burnout). Importantly, figure 5.1 shows that there are two models, including the outer and inner models. The outer model consists of variable items, whereas the inner model consists of latent constructs.

### **5.5. Descriptive Statistics**

The term descriptive statistics refers to a technique for summarising and explaining data in a clear and meaningful way (Fisher & Marshall, 2009). This entails using quantitative measures to describe the data's central tendency, variability, and distribution (Nick, 2007). Descriptive statistics have applications in a variety of fields, including survey research, and can aid researchers in comprehending and interpreting the data they have gathered (Kaur et al., 2018). Descriptive statistics provide a way to summarise and explain the collected data. Researchers can use this information to gain an overall

understanding of the responses and to identify any patterns or trends in the data (Marshall & Jonker, 2010). For example, by computing the mean and standard deviation of responses to a specific survey question, researchers can determine the typical or average response and extent of variation in responses.

In addition, descriptive statistics can aid researchers in effectively communicating the results of their research to others (Conner & Johnson, 2017). By using descriptive statistics to summarise the data, researchers can provide a more accessible and understandable representation of their findings. This is particularly important when presenting data to a wider audience or communicating with nonexperts (Pérez-Vicente & Ruiz, 2009).

**Table 5.3**

*Descriptive Statistics*

|                             | Mean      | SD        | Skewness  |            | Kurtosis  |            |
|-----------------------------|-----------|-----------|-----------|------------|-----------|------------|
|                             | Statistic | Statistic | Statistic | Std. Error | Statistic | Std. Error |
| Transformational Leadership | 2.5765    | 1.12055   | .956      | .105       | 1.104     | .210       |
| Emotional Stability         | 2.5553    | 1.02376   | .723      | .105       | .754      | .210       |
| Job Burnout                 | 5.5083    | 1.04206   | -.609     | .105       | -.078     | .210       |
| Employee Productivity       | 2.4111    | 1.05543   | .661      | .105       | .148      | .210       |
| Employee Innovation         | 2.9911    | 1.24178   | .539      | .105       | -.217     | .210       |
| Contingent Rewards          | 2.2069    | .92133    | 1.141     | .105       | 2.323     | .210       |

*Note.* This table is generated by the author.

Importantly, descriptive statistics can assist in identifying outliers or unusual responses that may necessitate further investigation (Kaur et al., 2018). For example, if the mean response to a survey question is significantly higher or lower than anticipated, this may indicate outliers or unusual responses that need to be investigated further (Conner & Johnson, 2017). Descriptive statistics are often used in combination with inferential statistics in survey research to draw conclusions regarding the population being studied

(Mishra et al., 2019). While descriptive statistics provide a summary of the data collected, inferential statistics are used to make inferences about a larger population based on the data collected from a sample. Therefore, descriptive statistics are a critical component of survey research and can provide valuable insights into the collected data (Marshall & Jonker, 2010).

Table 5.3 shows two important descriptive statistics, including the mean and standard deviation (SD), to summarise the results of this study. With reference to this study, the mean values indicated the average responses of the participants. For instance, all variables, except job burnout, were measured on a 7-point Likert scale where 1 = strongly agree, 7 = strongly disagree, and 4 = neutral. Here, if the mean values were lower than 4, they indicated that, on average, most of the respondents agreed with the statements in the questionnaire, while mean values higher than 4 indicated that most of the respondents disagreed with the statements in the questionnaire. The SD values indicate the variation in responses from the mean responses. All variables that have lower than four mean values are expected to have a positive relationship with each of them, while job burnout has a mean value greater than four, which indicates an opposite relationship with all other variables. Hence, descriptive statistics, including mean and SD values, are important to provide a summary of the results, especially the indication of the relationship between variables and the direction of the relationships.

## **5.6. Confirmatory Factor Analysis (CFA)**

CFA is a statistical method commonly used in survey research to reveal the underlying factors or dimensions that account for the patterns of correlations among a set of observed variables (Gorsuch, 2013). The purpose of CFA is to decrease the number of observed variables and to uncover a smaller set of latent variables (known as factors) that account for the variance in the data (Kline, 2014). In survey research, factor loadings are

critical for factor analyses. Factor loadings demonstrate the correlation between each observed variable and latent variable (factor). In essence, factor loadings show how much each observed variable contributes to each factor (Kline, 2013). Factor loadings may be positive or negative and range between -1 and 1. A positive loading implies that the observed variable is positively associated with the factor, whereas a negative loading implies a negative association (Bandalos & Finney, 2018). The loading's absolute value indicates the strength of the association between the observed variable and the factor, with a loading of 0 indicating no relationship between the observed variable and the factor (Kline, 2014).

Factor loadings are important in survey research because they provide information about the underlying structure of the data, help identify underlying factors or dimensions that explain the variation in the observed variables, and measure the convergent and discriminant validity of the factor model (Shrestha, 2021). Researchers can use factor loadings to interpret the results of the factor analysis and to make decisions about which observed variables should be included in each factor (Kline, 2013). Factors with high loadings (e.g., above 0.5 or 0.6) are considered to be good indicators of the underlying construct and can be used to create composite scores or indices for further analysis (Kline, 2014).

**Table 5.4**

*Psychometric Properties of Constructs*

| Variable Name                  | Item | Loadings | VIF   | Cronbach's<br>Alpha | Rho_A | CR    | AVE   |
|--------------------------------|------|----------|-------|---------------------|-------|-------|-------|
| Transformational<br>Leadership | TL1  | 0.865    | 2.369 | 0.889               | 0.891 | 0.923 | 0.750 |
|                                | TL2  | 0.883    | 2.591 |                     |       |       |       |
|                                | TL3  | 0.879    | 2.476 |                     |       |       |       |

|                       |      |       |       |       |       |       |       |
|-----------------------|------|-------|-------|-------|-------|-------|-------|
|                       | TL4  | 0.836 | 2.066 |       |       |       |       |
| Emotional Stability   | ES1  | 0.798 | 2.376 | 0.943 | 0.945 | 0.952 | 0.689 |
|                       | ES2  | 0.791 | 2.799 |       |       |       |       |
|                       | ES3  | 0.842 | 3.665 |       |       |       |       |
|                       | ES4  | 0.838 | 2.973 |       |       |       |       |
|                       | ES5  | 0.801 | 2.485 |       |       |       |       |
|                       | ES7  | 0.860 | 3.379 |       |       |       |       |
|                       | ES9  | 0.867 | 3.840 |       |       |       |       |
|                       | ES10 | 0.838 | 3.345 |       |       |       |       |
|                       | ES11 | 0.831 | 3.052 |       |       |       |       |
| Job Burnout           | JB1  | 0.848 | 2.159 | 0.882 | 0.886 | 0.919 | 0.740 |
|                       | JB2  | 0.841 | 2.108 |       |       |       |       |
|                       | JB3  | 0.838 | 2.199 |       |       |       |       |
|                       | JB4  | 0.910 | 3.117 |       |       |       |       |
| Employee Productivity | EP1  | 0.811 | 2.130 | 0.912 | 0.915 | 0.935 | 0.741 |
|                       | EP2  | 0.874 | 2.990 |       |       |       |       |
|                       | EP3  | 0.910 | 3.967 |       |       |       |       |
|                       | EP4  | 0.892 | 3.269 |       |       |       |       |
|                       | EP5  | 0.813 | 1.973 |       |       |       |       |
| Employee Innovation   | EI1  | 0.794 | 2.306 | 0.926 | 0.929 | 0.939 | 0.629 |
|                       | EI2  | 0.783 | 3.083 |       |       |       |       |
|                       | EI3  | 0.753 | 2.882 |       |       |       |       |
|                       | EI4  | 0.811 | 2.343 |       |       |       |       |
|                       | EI5  | 0.813 | 2.998 |       |       |       |       |
|                       | EI6  | 0.804 | 3.342 |       |       |       |       |
|                       | EI7  | 0.798 | 2.948 |       |       |       |       |
|                       | EI8  | 0.816 | 2.487 |       |       |       |       |
|                       | EI9  | 0.766 | 2.197 |       |       |       |       |
| Contingent Rewards    | CR1  | 0.806 | 1.750 | 0.872 | 0.871 | 0.913 | 0.723 |
|                       | CR2  | 0.889 | 3.145 |       |       |       |       |
|                       | CR3  | 0.880 | 2.987 |       |       |       |       |
|                       | CR4  | 0.824 | 1.850 |       |       |       |       |

*Note.* This table is generated by the author.

In survey research, the interpretation of factor loadings is often guided by certain guidelines although there are no fixed or universal standards. Some researchers have suggested general guidelines for interpreting the size and significance of the factor loadings. A widely used set of guidelines for factor loadings was proposed by (Hair et al., 2019). According to their guidelines, factor loadings greater than 0.5 are considered to be "good" indicators of the underlying construct, while factor loadings greater than 0.7 are considered "strong" indicators. Table 5.4 shows that all of the factor loadings are greater than 0.7, which means that these factor loadings are very strong; therefore, based on factor loadings, there is no need to remove any item from the model.

### **5.7. Collinearity Statistics**

Multicollinearity is a frequent problem in survey research, occurring when two or more independent variables in a statistical model are highly correlated (Shrestha, 2020). This strong correlation between independent variables can lead to difficulties in interpreting the results and impact the accuracy of the statistical analysis (Kim, 2019). A key issue with multicollinearity is that it can make it challenging to identify the individual contributions of each independent variable to the dependent variable (Senaviratna & Cooray, 2019). This is because of the unstable estimates of the regression coefficients that result from the high correlation between the independent variables, which makes it challenging to interpret the outcomes (Ullah et al., 2019). Additionally, multicollinearity can cause the standard errors of the regression coefficients to increase, making it more difficult to identify significant effects (Abonazel et al., 2023). Multicollinearity can also produce inaccurate conclusions about the relationships between variables, potentially leading researchers to make incorrect decisions or conclusions based on data. Therefore, it is necessary to detect and address multicollinearity in survey research (Kalnins, 2022).

One common method for identifying multicollinearity is to use diagnostic measures, such as variance inflation factors (VIFs), which are an appropriate tool to measure multicollinearity because it is a simple and widely used method for identifying the extent to which multicollinearity may affect regression analysis (Tsagris & Pandis, 2021). VIF allows researchers to identify the degree of multicollinearity among predictor variables in a model and determine whether multicollinearity is severe enough to warrant remedial action, such as removing highly correlated variables or using a more complex statistical model (Bayman & Dexter, 2021).

One advantage of using the VIF is that it is easy to interpret and calculate. It provides a numerical value that can be compared to the established thresholds to determine the degree of multicollinearity in the data. Additionally, VIF is widely available in many statistical software programs, making it a convenient tool for researchers to use (Vörösmarty & Dobos, 2020). A VIF greater than 5 is often seen as an indication of substantial multicollinearity (Marcoulides & Raykov, 2019). Table 5.4 shows the values of VIF, which are lower than 5; therefore, it can be concluded that there is no multicollinearity issue in the data and model.

## **5.8. Scale Reliability**

Scale reliability is a measure of the consistency and stability of a measurement instrument, such as a survey questionnaire, over time or across different samples (Sürücü & Maslakci, 2020). In survey research, scale reliability is important because it ensures that the instrument is measuring what it is intended to measure and that the results are valid and trustworthy (Fitzner, 2007). According to Farrell (2010), scale reliability is "the degree to which scores obtained by a specific instrument are consistent across raters, items, and time." Thanasegaran (2009) defines scale reliability as "the degree to which a measurement instrument is free from error and yields consistent results when used repeatedly to measure

the same construct." Hair et al. (2019) define scale reliability as "the extent to which a measurement instrument produces consistent and stable results when used to measure a construct."

In addition to ensuring the validity of survey results, scale reliability is important because it allows researchers to make meaningful comparisons across different samples or time points (Thanasegaran, 2009). If a measurement instrument is reliable, then the results obtained from it can be compared over time or across different groups of people with confidence. This allows researchers to identify trends, patterns, and changes in the construct of interest (Sürücü & Maslakci, 2020). Scale reliability is typically measured using internal consistency reliability coefficients, such as Cronbach's alpha, Composite Reliability (CR), or Rho\_A. These coefficients assess the degree to which the items on a scale are interrelated and measure the same construct (Fitzner, 2007).

Cronbach's alpha is an important measure of reliability in survey research, for several reasons. First, it is a widely recognised and accepted measure of internal consistency and reliability. Second, it is relatively easy to calculate and interpret, making it accessible to researchers with varying levels of statistical expertise. Third, it is suitable for use with Likert-type scales, which are usually used in survey research (Espinoza & Novoa-Munoz, 2018). The second measure of reliability is composite reliability which is an important measure in survey research because it provides evidence that a construct is reliable and can be used in subsequent analyses. It is particularly useful when constructs are measured by multiple items with varying loadings, as it considers the intercorrelations among items (Peterson & Kim, 2013).

The third measure of reliability is Rho\_A, also known as Rho Alpha, which is an important measure of reliability in survey research because it provides a more accurate estimate of the true reliability of a construct than traditional measures, as mentioned above

(Van Nguyen & Habók, 2021). It considers the factor loadings of each item as well as the covariance between the items and the construct to estimate reliability. By using Rho\_A, researchers can ensure that their constructs are internally consistent and reliable, which increases the validity of their findings (Ahmad et al., 2019). Owing to their limitations and preferences over others, this study has included all of these methods to measure reliability. Table 5.4 shows the values of these measures. Commonly, these three measures have the same threshold standard, which is 0.7 (Boyd, 2002; Şimşek & Noyan, 2013). This means that values lower than 0.7 are not acceptable for reliability. According to Table 5.4, all the values of the reliability measures are above 0.7; therefore, the reliability is acceptable.

### **5.9. Construct Validity**

Construct validity determines the degree to which a test or measure correctly measures the theoretical construct it was developed to assess (Bowman & Goodboy, 2020). In survey research, construct validity is crucial because it ensures that survey questions and scales are accurately measuring the concepts and constructs that the research aims to investigate (Flake et al., 2022). If the survey questions and scales do not have good construct validity, the results and conclusions drawn from the survey may be inaccurate and misleading (Bell et al., 2022). Commonly, there are two methods used to establish construct validity in survey research, including convergent validity and discriminant validity (Greener, 2022). These methods involve comparing the survey questions and scales to other measures that assess similar constructs or concepts, examining the relationships between the survey questions and constructs, and testing the survey questions and scales against a known criterion (Hair et al., 2019). The two methods are explained separately below.

### **5.9.1. Convergent Validity**

Campbell and Fiske (1959) noted that convergent validity is "the extent to which two measures of the same concept are positively related." DeVellis (2012) defines convergent validity as "the extent to which scores on a measure are related to (converge on) other measures that are theoretically or conceptually related to the construct being measured." Hair et al. (2014) describe convergent validity as "the extent to which a particular measure is related to other measures that are theoretically expected to be related to it." Overall, these definitions emphasise that convergent validity is concerned with establishing the relationship between a measure and other measures that are theoretically expected to be related to it. This is an important aspect of construct validity, as it demonstrates that a measure is indeed measuring what it is supposed to measure.

In survey research, convergent validity is crucial as it aids in determining the level of consistency in measuring a specific construct using a set of measures (Flake et al., 2022). If the measures are not correlated or the correlation is low, it may suggest that the measures are either unreliable or do not measure the same underlying construct (Carlson & Herdman, 2012). Therefore, it is essential to establish convergent validity to ensure that the measures used in survey research are both reliable and valid. Average Variance Extracted (AVE) is a crucial metric for determining convergent validity because it helps to ensure that a given construct is measured consistently across its indicators (Cheung & Wang, 2017).

When the AVE exceeds 0.5, it indicates that at least half of the variation in the construct is accounted for by its indicators, which suggests a high level of convergent validity (Saunders et al., 2007; Zikmund, Babin, et al., 2013). The use of AVE is supported by various scholars, such as Fornell and Larcker (1981), who first introduced the concept of AVE to assess convergent validity and Hair et al. (2014), who recommended using AVE

as a measure of convergent validity in structural equation modelling. Kline et al. (2012) also emphasized the widespread use of AVE as a criterion for convergent validity in social science research. Based on the above-mentioned criteria and threshold, the values of AVE must be equal to or higher than 0.5 to prove the availability of convergent validity. Table 5.4 shows that all the values of AVE are greater than 0.5; therefore, the convergent validity is acceptable.

### **5.9.2. Discriminant Validity**

Discriminant validity is a type of construct validity that refers to the extent to which a construct is distinct from other constructs to that it should not be related. In other words, it measures whether a measure truly measures a unique construct or measures the same construct as other measures (Rönkkö & Cho, 2022). In survey research, discriminant validity is important because it ensures that the measures used in the study are distinct from each other and are not measuring the same construct (Henseler et al., 2015). If the measures used in the study are not distinct from each other, then it can lead to an overestimation of the relationship between the constructs, which can lead to inaccurate or misleading results (Ab Hamid et al., 2017).

Commonly, there are two methods used to measure discriminant validity, including the Fornell-Larcker criterion and the Heterotrait-Monotrait Ratio of Correlations (HTMT) (Ab Hamid et al., 2017). The Fornell-Larcker criterion is a widely used and accepted approach for assessing discriminant validity in survey-based research; however, it is not without limitations and should be used in conjunction with other methods and assessments (Hilkenmeier et al., 2020). However, it is a widely accepted measure of discriminant validity. According to this criterion, the square root of the AVE should be higher than the correlations of any latent variable with all other variables (Fornell & Larcker, 1981).

**Table 5.5***Fornell-Larcker Criterion*

| Variables                   | 1            | 2            | 3            | 4            | 5            | 6            |
|-----------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Contingent Rewards          | <b>0.851</b> |              |              |              |              |              |
| Emotional Stability         | 0.658        | <b>0.830</b> |              |              |              |              |
| Employee Productivity       | 0.609        | 0.798        | <b>0.861</b> |              |              |              |
| Employee Innovation         | 0.593        | 0.745        | 0.721        | <b>0.793</b> |              |              |
| Job Burnout                 | -0.663       | -0.819       | -0.733       | -0.726       | <b>0.860</b> |              |
| Transformational Leadership | 0.615        | 0.815        | 0.707        | 0.715        | -0.740       | <b>0.866</b> |

*Note.* This table is generated by the author.

Table 5.5 shows the diagonal highlighted values of the square root of AVE, while the other values in rows and columns are correlations between variables. Based on these values, the diagonal values are greater than their corresponding values in the rows and columns; therefore, it can be concluded that the discriminant validity is acceptable. However, some authors have also suggested using other methods of measuring discriminant validity (Ab Hamid et al., 2017; Hilkenmeier et al., 2020); therefore, this study has also examined the discriminant validity through Heterotrait-Monotrait Ratio (HTMT) method.

HTMT is a metric introduced by Henseler et al. (2015) to measure the discriminant validity. It determines the extent to which the correlations between two constructs (heterotrait correlations) are greater than the correlations between different indicators of the same construct (monotrait correlations) (Ab Hamid et al., 2017). The HTMT ratio can be obtained through the two-step process outlined by Henseler et al. (2015), where the HT/MT ratio is first calculated as the average of the heterotrait correlations divided by the average of the monotrait correlations, followed by taking the square root of the HT/MT ratio to get the HTMT ratio. Additionally, the bootstrap method can be used to obtain the

HTMT ratio by using PLS-SEM. The bootstrap method involves generating a large number of samples from the original data set, estimating the model parameters for each sample, and then calculating the HTMT ratio for each set of estimated parameters (Afthanorhan et al., 2021). The distribution of the HTMT ratio can then be used to obtain a confidence interval and test for the significance of the ratio.

**Table 5.6**

*Heterotrait-Monotrait Ratio of Correlations (HTMT)*

|                             |       |       |       |       |       |
|-----------------------------|-------|-------|-------|-------|-------|
| Contingent Rewards          |       |       |       |       |       |
| Emotional Stability         | 0.722 |       |       |       |       |
| Employee Productivity       | 0.679 | 0.856 |       |       |       |
| Employee Innovation         | 0.655 | 0.792 | 0.779 |       |       |
| Job Burnout                 | 0.754 | 0.895 | 0.812 | 0.799 |       |
| Transformational Leadership | 0.696 | 0.887 | 0.781 | 0.782 | 0.831 |

*Note.* This table is generated by the author.

A commonly accepted threshold for HTMT is 0.9, which means that if the HTMT ratio between two constructs is higher than 0.9, then it is considered that there is insufficient discriminant validity between those constructs (Ab Hamid et al., 2017; Afthanorhan et al., 2021). To establish adequate discriminant validity, Hair et al. (2019) suggest that the HTMT ratio should be less than 0.85, while Kline (2015) recommends not exceeding 0.90. If the HTMT ratio is lower than the threshold, then discriminant validity is supported, meaning that the constructs are distinct and measure different concepts. On the other hand, if the HTMT ratio is higher than the threshold, then discriminant validity is not supported, and the constructs are not distinct from each other, meaning that they may be measuring the same concept. Table 5.6 shows the ratio of HTMT, where all values are lower than 0.90; therefore, discriminant validity is supported.

### 5.10. Correlation Coefficients

The correlation coefficient is a statistical measure that evaluates the relationship between two variables (Ganti, 2020). According to Asuero, Sayago and González (2006), the correlation coefficient is "the degree to which two variables are related in a linear way." Similarly, Cohen et al. (2009) define it as "a number that measures the degree of association between two variables."

**Table 5.7**

*Correlations*

|                             | 1       | 2       | 3       | 4      | 5      | 6 |
|-----------------------------|---------|---------|---------|--------|--------|---|
| Transformational Leadership | 1       |         |         |        |        |   |
| Emotional Stability         | .810**  | 1       |         |        |        |   |
| Job Burnout                 | -.737** | -.817** | 1       |        |        |   |
| Employee Productivity       | .704**  | .795**  | -.728** | 1      |        |   |
| Employee Innovation         | .709**  | .737**  | -.721** | .716** | 1      |   |
| Contingent Rewards          | .612**  | .655**  | -.662** | .606** | .590** | 1 |

\*\* . Correlation is significant at the 0.01 level (2-tailed).

*Note.* This table is generated by the author.

In the survey research, correlation coefficients were used to examine the relationships between different variables. They can help to identify whether there is a positive or negative association between variables and the strength of that association (Abdi, 2007). Correlation coefficients are important because they can provide insight into the underlying structure of data, which can help researchers make informed decisions about which variables to include in their analyses. The significance threshold is 0.05, as suggested by multiple scholars (Bujang & Baharum, 2017; Taylor, 1990). This means that the values of correlation which are significantly greater than 0.05 are not acceptable or refer to no correlation. Some scholars have also preferred a significance threshold of 0.01, which is better and represents a higher confidence interval (Obilor & Amadi, 2018). In

Table 5.7, the double asterisk symbol shows that the relationship is significant at a significance value lower than 0.01. It is also important to mention that correlation is represented with “r” and significance is represented with “p”. According to this table, transformational leadership has a positive relationship with emotional stability ( $r=81\%$ ,  $p<0.01$ ), employee productivity ( $r=70.4\%$ ,  $p<0.01$ ), employee innovation ( $r=70.9\%$ ,  $p<0.01$ ), and contingent rewards ( $r=61.2\%$ ,  $p<0.01$ ), and a negative relationship with job burnout ( $r=-73.7\%$ ,  $p<0.01$ ).

Here, a positive relationship represents the same direction of variables which means that if one variable increases, the other variable also increases, or vice versa. Similarly, all other variables were significantly correlated with each other. However, it is important to mention that job burnout had a significant negative relationship with all other variables, while these variables were positively correlated with each other. Table 5.10 shows that all of these variables have a strong correlation; hence, this table represents the relationship between variables in addition to the strength and direction of the relationship.

### **5.11. Assessment of the Structural Model**

The assessment of the structural model is an important step in survey research as it confirms the validity and reliability of the findings. It involves evaluating the path coefficients and standardised residuals to confirm that the model accurately represents the relationships among latent variables (Chintagunta et al., 2006). For this purpose, Structural Equation Modelling (SEM) technique is employed, which is a powerful tool for analysing survey data and testing theoretical models. It can help researchers gain insights into complex relationships between variables and can aid in the development and refinement of theories in the social sciences (Thakkar & Thakkar, 2020).

Although regression analysis can also be used to measure and test hypotheses, SEM is preferred over regression analysis in survey research owing to multiple reasons. For

instance, SEM allows for the simultaneous estimation of multiple relationships among variables, whereas regression analysis estimates only one relationship at a time (Nunkoo & Ramkissoon, 2012). As such, SEM can capture the complex relationships among variables and provide a more comprehensive understanding of the underlying mechanisms.

According to Kline (2015), SEM is particularly useful when testing complex hypotheses that involve multiple dependent and independent variables, as well as mediating and moderating variables. SEM can be used to test the measurement properties of the scales used to measure constructs. Owing to the above reasons, SEM was performed in this research for hypotheses testing. However, this approach is further divided into five steps, as proposed by Hair Jr, Hult, Ringle and Sarstedt (2021). The five steps are elaborated in detail below.

#### ***5.11.1. Step One: Assessment of Collinearity***

In section 5.7, the researcher explained the collinearity statistics and highlighted the importance of VIF for measuring multicollinearity; however, this is particularly explained regarding an outer model or observed variables. In this section, collinearity is explained with reference to the inner model or latent constructs of the sub-models. In the first and second models, emotional stability and job burnout were endogenous variables, while contingent rewards and transformational leadership were exogenous variables. In the third and fourth models, employee productivity and employee innovation are endogenous variables, respectively, while emotional stability, job burnout, and transformational leadership are exogenous variables. Values of VIF lower than 5 represent the lack of collinearity which is an acceptable standard value referred to by multiple scholars (Bayman & Dexter, 2021; Tsagris & Pandis, 2021). Table 5.8 shows that all the values of VIF are lower than 5; therefore, they represent acceptable collinearity for the inner model.

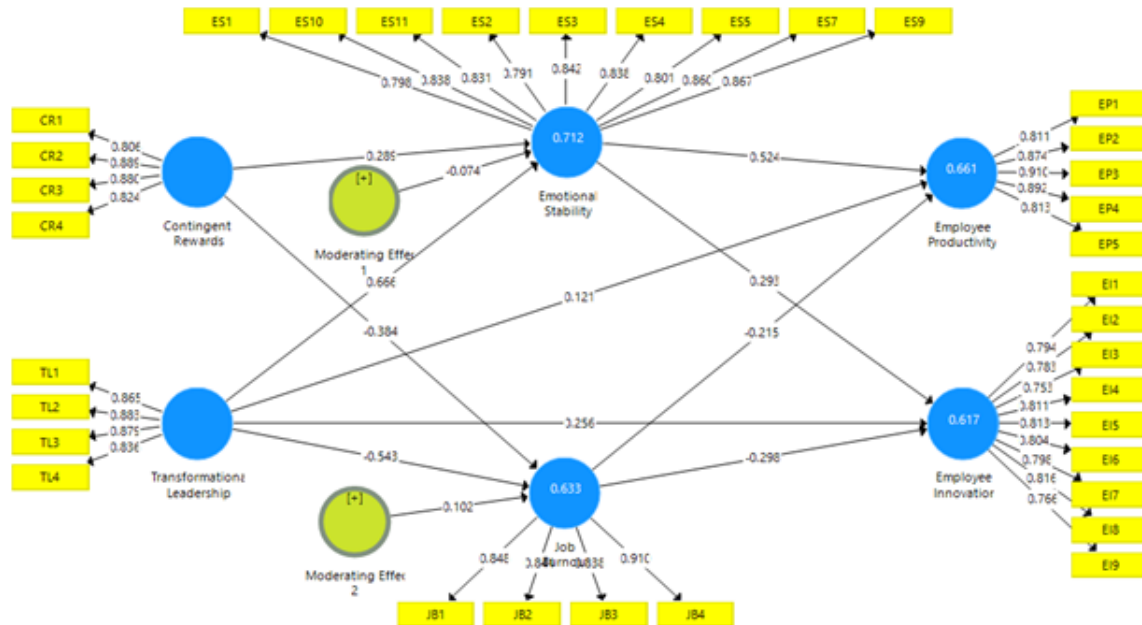
**Table 5.8***Inner Model Collinearity*

|                             | Emotional<br>Stability | Job Burnout | Employee<br>Productivity | Employee<br>Innovation |
|-----------------------------|------------------------|-------------|--------------------------|------------------------|
| Contingent Rewards          | 1.761                  | 1.761       |                          |                        |
| Emotional Stability         |                        |             | 4.290                    | 4.290                  |
| Employee Productivity       |                        |             |                          |                        |
| Employee Innovation         |                        |             |                          |                        |
| Job Burnout                 |                        |             | 3.183                    | 3.183                  |
| Transformational Leadership | 1.612                  | 1.612       | 3.127                    | 3.127                  |

*Note.* This table is generated by the author.

**5.11.2. Step Two: Assessment of Path Coefficients**

The assessment of path coefficients is a critical step in the evaluation of structural models in survey research. This involves examining the statistical significance, magnitude, and direction of the coefficients and considering their theoretical implications in relation to the research question or hypothesis being tested (Rashid, 2020). Particularly, path coefficients represent the direct effects of predictors on the outcome variables. For this purpose, bootstrapping with 5000 iterations was performed using SmartPLS software to determine the significance of the relationships. Here the researcher has adopted a significance level of 0.05, as suggested by Rashid (2020).

**Figure 5. 2***Assessment of Structural Model*

*Note.* This figure is generated by the author.

Figure 5.2 shows the results of bootstrapping. In this figure, the factor loadings, effect of predictors on outcome variables, and coefficient of determination values are represented. In all these relationships, positive relationship shows that the enhancement of predictors increases the outcome variables, while negative relationships show that predictors decrease the outcome variables. For a clear understanding, path coefficient values are represented in Table 5.9. According to this table, transformational leadership has a 0.666 positive impact on emotional stability at significance  $p=0.000<0.05$ . This relationship supports the first hypothesis of this study. Here the beta value of 0.666 means that upon increasing one point of transformational leadership, the emotional stability of employees will increase by 0.666. Similarly, beta values in other relationships can be interpreted. Table 5.9 further shows that transformational leadership has a 0.543 negative impact on job burnout at a significance level of  $p=0.000<0.05$ . This relationship supports

the second hypothesis of this study and indicates that transformational leadership decreases job burnout among employees.

**Table 5.9**

*Direct Effects*

| Hypotheses                                           | $\beta$ | Mean   | SD    | T      | P     |
|------------------------------------------------------|---------|--------|-------|--------|-------|
| Transformational Leadership -> Emotional Stability   | 0.666   | 0.664  | 0.039 | 17.213 | 0.000 |
| Transformational Leadership -> Job Burnout           | -0.543  | -0.540 | 0.046 | 11.857 | 0.000 |
| Transformational Leadership -> Employee Productivity | 0.121   | 0.119  | 0.057 | 2.141  | 0.032 |
| Transformational Leadership -> Employee Innovation   | 0.256   | 0.254  | 0.057 | 4.471  | 0.000 |
| Emotional Stability -> Employee Productivity         | 0.524   | 0.524  | 0.062 | 8.450  | 0.000 |
| Emotional Stability -> Employee Innovation           | 0.293   | 0.294  | 0.061 | 4.765  | 0.000 |
| Job Burnout -> Employee Productivity                 | -0.215  | -0.217 | 0.064 | 3.371  | 0.001 |
| Job Burnout -> Employee Innovation                   | -0.298  | -0.298 | 0.059 | 5.011  | 0.000 |

*Note.* This table is generated by the author.

Table 5.9 also shows that transformational leadership has a 0.121 positive impact on employee productivity at  $p=0.032<0.05$ . This relationship is significant and thus supports the third hypothesis of this study. Similarly, transformational leadership has a 0.256 positive impact on employee innovation at  $p=0.000<0.05$ ; therefore, the fourth hypothesis of this study is accepted. Besides, table 5.9 shows that emotional stability has a 0.524 positive impact on employee productivity at  $p=0.000<0.05$ . Therefore, the fifth hypothesis of this study is accepted. Similarly, emotional stability has a 0.293 positive impact on employee innovation, and this relationship is accepted at a significance level of  $p=0.001<0.05$ . Therefore, the sixth hypothesis of this study is accepted. Furthermore, job burnout has a 0.215 negative impact on employee productivity at  $p=0.000<0.05$ . Therefore, the seventh hypothesis of this study is accepted.

Finally, job burnout has a 0.298 negative impact on employee innovation at significance  $p=0.000<0.05$ . Therefore, the eighth hypothesis of this study is accepted. Amongst these effects, emotional stability is the most influential predictor of employee productivity, while job burnout is the most influential predictor of employee innovation. In the case of both mediating variables (emotional stability and job burnout), transformational leadership has a stronger impact on emotional stability as compared to its impact on job burnout. Also, job burnout is negatively affected by transformational leadership, while it negatively affects employee productivity and employee innovation.

### **5.11.3. Step Three: Assessment of Coefficient of Determination**

R-squared, or the coefficient of determination is a significant measure in survey research that indicates how well a model fits the data. According to Hair (2009), it is defined as the proportion of the total variance in the dependent variable explained by the independent variables in the model. Field (2013) describes it as the proportion of variance in the dependent variable that can be predicted from the independent variables, while Tabachnick et al. (2013) explain it as the proportion of variance in the dependent variable that is accounted for by the independent variables. A high R-squared value suggests that the model is a good fit for the data, as it explains a large proportion of the variance in the dependent variable, while a low R-squared value indicates that the model does not fit the data well and may need to be improved (Kasuya, 2019; Tjur, 2009).

**Table 5.10**

*Coefficient of Determination or R<sup>2</sup>*

|                       | R Square | R Square Adjusted |
|-----------------------|----------|-------------------|
| Emotional Stability   | 0.712    | 0.711             |
| Employee Productivity | 0.661    | 0.659             |
| Employee Innovation   | 0.617    | 0.615             |
| Job Burnout           | 0.633    | 0.631             |

*Note.* This table is generated by the author.

Chin (1998) suggested that endogenous latent constructs in the inner model with R<sup>2</sup> values of 0.67, 0.33, or 0.19 can be considered substantial, moderate, or weak, respectively. Table 5.10 shows the values of R<sup>2</sup>. All of the four listed variables are endogenous in sub-models, as described in section 5.11.4 below. Table 5.10 shows that R-square values are moderate to substantial; therefore, it shows a good fit of models.

#### **5.11.4. Step Four: Assessment of F Square**

When evaluating the quality of a structural model, two measures - Cohen's f<sup>2</sup> and Stone-Geisser's Q<sup>2</sup> - are commonly used. Cohen's f<sup>2</sup> is a measure of the structural model's effect size and is determined by comparing the increase in R<sup>2</sup> to the proportion of variance that remains unexplained in the endogenous construct (Cohen, 1988). The magnitude of the effect size can be classified as small, medium, or large depending on whether the f<sup>2</sup> value is 0.02, 0.15, or 0.35, respectively (Fritz et al., 2012). The formula for calculating f<sup>2</sup> involves estimating the R<sup>2</sup> values of the endogenous construct when an exogenous construct is either included or excluded from the model.

$$f^2 = \frac{R^2_{included} - R^2_{excluded}}{1 - R^2_{included}}$$

The values of R<sup>2</sup> were obtained when all constructs were included in the model, while R<sup>2</sup> was excluded after removing the selected exogenous construct. The effect size was then calculated for each significant path coefficient. Table 5.11 shows the values of f<sup>2</sup>, which are provided with reference to different models. In the first model, emotional stability is considered an endogenous variable, whereas contingent rewards and transformational leadership are exogenous variables.

Based on this model, table 5.11 shows that contingent rewards have a medium effect size on emotional stability, while transformational leadership has a large effect size. In the second model, employee productivity is the endogenous variable, while emotional

stability, job burnout, and transformational leadership are the exogenous variables. Here, emotional stability has a medium effect size on employee productivity, job burnout has a small effect size, and transformational leadership has an even smaller effect size.

**Table 5.11**

*Assessment of F Square*

|                                | Emotional<br>Stability | Employee<br>Productivity | Employee<br>Innovation | Job<br>Burnout |
|--------------------------------|------------------------|--------------------------|------------------------|----------------|
| Contingent Rewards             | 0.165                  |                          |                        | 0.228          |
| Emotional Stability            |                        | 0.189                    | 0.052                  |                |
| Employee Productivity          |                        |                          |                        |                |
| Employee Innovation            |                        |                          |                        |                |
| Job Burnout                    |                        | 0.043                    | 0.073                  |                |
| Transformational<br>Leadership | 0.956                  | 0.014                    | 0.055                  | 0.498          |

*Note.* This table is generated by the author.

In the third model, employee innovation is the endogenous variable, while emotional stability, job burnout, and transformational leadership are the exogenous variables. According to Table 5.11, all three exogenous variables have a small effect size on employee innovation. In the final model, job burnout was the endogenous variable, while contingent rewards and transformational leadership were exogenous variables. Contingent rewards had a medium effect size, while transformational leadership had a large effect on job burnout.

#### **5.11.5. Step Five: Blindfolding Procedure**

Stone–Geisser’s Q2 is a measure used to evaluate the predictive ability of a structural model (Najjari et al., 2022). It involves a "blindfolding" procedure using SmartPLS, where a portion of the data is obtained from the model estimation process (Berz & Berz, 2016). The model is then used to predict the values of the held-out data, and the accuracy of the predictions is measured using Q2 (Ringle et al., 2015). It measures the

proportion of variance in the endogenous construct that is predicted by the model.

Specifically, it compares the predictive accuracy of the model to the predictive accuracy of a null model, which assumes that the predicted values of the endogenous construct are equal to their mean values. The higher the Q2 value, the better is the predictive ability of the model (Fit, 2013).

The blindfolding procedure is used to guard against overfitting, which occurs when a model is too complex and fits the data too closely, leading to a poor predictive performance on new data (Ringle et al., 2015). By retaining a portion of the data and evaluating the model's performance, the blindfolding procedure provides a more accurate assessment of the model's true predictive ability.

**Table 5.12**

*Predictive Relevance or Q2*

|                             | SSO      | SSE      | Q <sup>2</sup> (=1-SSE/SSO) |
|-----------------------------|----------|----------|-----------------------------|
| Contingent _Rewards         | 2156.000 | 2156.000 |                             |
| Emotional Stability         | 4851.000 | 2511.690 | 0.482                       |
| Employee Productivity       | 2695.000 | 1399.060 | 0.481                       |
| Employee Innovation         | 4851.000 | 3003.325 | 0.381                       |
| Job Burnout                 | 2156.000 | 1167.743 | 0.458                       |
| Transformational Leadership | 2156.000 | 2156.000 |                             |

*Note.* This table is generated by the author.

Normally, a Q2 value higher than zero is considered acceptable and confirms predictive relevance (Fit, 2013). Table 5.12 shows the predictive relevance in the case of all sub-models, as described in the previous section. According to Table 5.12, the Q2 values are greater than zero ( $Q2 > 0$ ); therefore, these models confirm predictive relevance.

#### **5.11.6. Mediation Analysis**

In this section, the indirect effects of transformational leadership on employee productivity and employee innovation are explained. Table 5.13 shows the specific indirect

effects, whereas Table 5.14 shows the total indirect effects. Specific indirect effects refer to the indirect effects of transformational leadership on employee productivity and innovation by separately highlighting the mediating roles of emotional stability and job burnout. However, the total indirect effects represent the indirect effects of transformational leadership on employee productivity and innovation by combining the mediation effects of emotional stability and job burnout. It is also pertinent to note that mediation is generally categorised as full or partial.

Full mediation occurs when an exogenous variable has no direct impact on an endogenous variable; rather, it has only an indirect impact. However, partial mediation occurs when an exogenous variable has both direct and indirect significant impacts on the endogenous variable (Hair Jr, Hult, Ringle, Sarstedt, et al., 2021). Partial mediation can be further divided into complementary and competitive forms. Complementary partial mediation occurs when owing to the mediator, the relationship between exogenous and endogenous variables increases, while competitive partial mediation occurs when the mediator variable decreases the relationship between exogenous and endogenous variables (Carrión et al., 2017).

Table 5.13 shows that transformational leadership has a 0.348 positive and significant indirect effect on employee productivity through emotional stability. This relationship was considered significant at  $p=0.000<0.05$ . Therefore, the ninth hypothesis of this study was accepted. This relationship represents partial complementary mediation, as transformational leadership has significant direct and indirect effects on employee productivity, and emotional stability as a mediator increases the effect of transformational leadership on employee productivity from 0.121 to 0.348.

Table 5.13 also shows that transformational leadership has a 0.195 positive and significant indirect effect on employee innovation through emotional stability ( $p = 0.000 <$

0.05). This relationship supports the tenth hypothesis of this study. In addition, this is a partial competitive mediation, as transformational leadership has significant direct and indirect effects on employee innovation, whereas emotional stability as a mediator decreases the impact of transformational leadership on employee innovation from 0.256 to 0.195.

**Table 5.13**

*Specific Indirect Effects*

| Hypothesized Relationships                                                  | $\beta$ | Mean  | SD    | T     | P     |
|-----------------------------------------------------------------------------|---------|-------|-------|-------|-------|
| Transformational Leadership -> Emotional Stability -> Employee Productivity | 0.348   | 0.348 | 0.047 | 7.459 | 0.000 |
| Transformational Leadership -> Emotional Stability -> Employee Innovation   | 0.195   | 0.196 | 0.042 | 4.586 | 0.000 |
| Transformational Leadership -> Job Burnout -> Employee Productivity         | 0.117   | 0.116 | 0.033 | 3.530 | 0.000 |
| Transformational Leadership -> Job Burnout -> Employee Innovation           | 0.161   | 0.160 | 0.033 | 4.889 | 0.000 |

*Note.* This table is generated by the author.

Moreover, table 5.13 shows that transformational leadership has a 0.117 positive and significant indirect effect on employee productivity through job burnout. This relationship was considered significant at  $p=0.000<0.05$ . Therefore, this supports the eleventh hypothesis of this study. This relationship also shows partial competitive mediation, as transformational leadership has significant direct and indirect effects on employee productivity while considering the mediation role of job burnout, which shows partial mediation. In addition, the mediating role of job burnout decreased the impact of transformational leadership on employee productivity from 0.121 to 0.117; therefore, it showed partial competitive mediation. Finally, table 5.13 shows that transformational leadership has a 0.161 positive and significant indirect effect on employee innovation through job burnout. This relationship was considered significant at  $p=0.000<0.05$ . Therefore, this relationship supports the twelfth hypothesis of this study. It also shows a

partial competitive mediation owing to the availability of direct and indirect significant impacts of transformational leadership on employee innovation in the mediating role of job burnout, where job burnout has decreased the impact of transformational leadership on employee innovation.

**Table 5.14**

*Total Indirect Effects*

|                                                      | $\beta$ | Mean  | SD    | T      | P     |
|------------------------------------------------------|---------|-------|-------|--------|-------|
| Transformational Leadership -> Employee Productivity | 0.465   | 0.465 | 0.041 | 11.292 | 0.000 |
| Transformational Leadership -> Employee Innovation   | 0.356   | 0.356 | 0.039 | 9.179  | 0.000 |

*Note.* This table is generated by the author.

Table 5.14 shows the total indirect effects. According to this table, transformational leadership has a 0.465 positive indirect effect on employee productivity through the combined mediating role of emotional stability and job burnout. Here, it is noticeable that the combined indirect effect is greater than the specific indirect effect. This total indirect effect was larger than the direct effect. Table 5.14 also shows that transformational leadership has a 0.356 positive indirect effect on employee innovation through the combined mediation role of emotional stability and job burnout. This total indirect effect was greater than the direct and specific indirect effects of transformational leadership on employee innovation.

**Table 5.15**

*Total Effects*

|                                                      | $\beta$ | Mean  | SD    | T      | P     |
|------------------------------------------------------|---------|-------|-------|--------|-------|
| Transformational Leadership -> Employee Productivity | 0.586   | 0.583 | 0.041 | 14.410 | 0.000 |
| Transformational Leadership -> Employee Innovation   | 0.612   | 0.610 | 0.036 | 17.198 | 0.000 |

*Note.* This table is generated by the author.

Table 5.15 shows the total effects, which include all direct and indirect effects, whether mediated by one variable or multiple variables (Rashid, 2020). Hence, these effects were a combination of both direct and indirect effects. Therefore, Table 5.15 shows that transformational leadership has a 0.586 positive and significant effect on employee productivity, with 0.121 direct and 0.465 indirect combined effects. Furthermore, the table shows that transformational leadership holds a 0.612 positive and significant effect on employee innovation. In this total effect, 0.256 direct and 0.356 indirect effects are included.

#### **5.11.7. Moderation Analysis**

This section presents the moderating role of contingent rewards. Table 5.16 shows the moderating effects of contingent rewards. According to this table, the interaction between contingent rewards and transformational leadership has a 0.074 negative effect on emotional stability at  $p=0.002<0.05$ . This relationship supports the thirteenth hypothesis of this study. Here, the negative relationship shows that, in the presence of contingent rewards, the positive impact of transformational leadership on emotional stability is reduced.

**Table 5.16**

#### *Moderating Effects*

| Hypotheses                                 | $\beta$ | Mean   | SD    | T     | P     |
|--------------------------------------------|---------|--------|-------|-------|-------|
| Moderating Effect 1 -> Emotional Stability | -0.074  | -0.073 | 0.024 | 3.149 | 0.002 |
| Moderating Effect 2 -> Job Burnout         | 0.102   | 0.101  | 0.031 | 3.255 | 0.001 |

*Note.* This table is generated by the author.

Furthermore, table 5.16 shows that the interaction between transformational leadership and contingent rewards has a 0.102 positive effect on job burnout at  $p=0.001<0.05$ . This relationship supports the fourteenth hypothesis of this study. Here, the

positive relationship indicates that, in the presence of contingent rewards, the negative impact of the transformational relationship on job burnout increases.

#### **5.11.8. Hypothesized Summary of Results**

Based on the direct, indirect, and moderating effects, Table 17 shows that all hypotheses are supported. This table shows the hypotheses, and their results based on the direct, indirect, and moderating effects, as explained above.

**Table 5.17**

#### *Summary of Hypothesized Results*

|     | Hypotheses                                                                                                                               | Result    |
|-----|------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| H1  | Transformational leadership has a positive effect on emotional stability.                                                                | Supported |
| H2  | Transformational leadership has a negative effect on job burnout.                                                                        | Supported |
| H3  | Transformational leadership has a positive effect on employee productivity.                                                              | Supported |
| H4  | Transformational leadership has a positive effect on employee innovation.                                                                | Supported |
| H5  | Emotional stability has a positive effect on employee productivity.                                                                      | Supported |
| H6  | Emotional stability has a positive effect on employee innovation.                                                                        | Supported |
| H7  | Job burnout has a negative effect on employee productivity.                                                                              | Supported |
| H8  | Job burnout has a negative effect on employee innovation.                                                                                | Supported |
| H9  | Emotional stability plays a mediating role between transformational leadership and employee productivity.                                | Supported |
| H10 | Emotional stability plays a mediating role between transformational leadership and employee innovation.                                  | Supported |
| H11 | Job burnout plays a mediating role between transformational leadership and employee productivity.                                        | Supported |
| H12 | Job burnout plays a mediating role between transformational leadership and employee innovation.                                          | Supported |
| H13 | Contingent rewards have a significant moderating impact on the relationship between transformational leadership and emotional stability. | Supported |
| H14 | Contingent rewards have a significant moderating impact on the relationship between transformational leadership and job burnout.         | Supported |

*Note.* This table is generated by the author.

## 5.12. Chapter Summary

A preliminary evaluation was performed with a frequency distribution to identify missing values and outliers, which resulted in zero missing values and outliers. The normality of the data was checked using skewness and kurtosis, and their values were below the defined standards. Common method bias was examined using Harmon's single-factor model, and in the total variance explained, a single factor represented less than 50% of the variance. The demographic profile shows that the majority of the respondents were male, falling in the age range of 35 to less than 45 years, married, with to 1-3 children, working as a worker with a graduation qualification, and having 6 to less than 10 years of working experience. The psychometric properties showed strong factor loadings, lower than 5 VIF values, and above 0.7, values of Cronbach's alpha, composite reliability, and Rho\_A; hence, they represented acceptable reliability. In addition, the AVE values were above 0.5, indicating an acceptable convergent validity. Discriminant validity was assessed using both the Fornell-Larcker criterion and HTMT ratio, which resulted in acceptable values.

The five-step assessment of the structural model represented acceptable collinearity, a small to moderate effect size, sufficient predictive relevance, and a moderate coefficient of determination. In addition, path coefficients, indirect effects, and moderating effects supported all the developed hypotheses. It is important to mention that transformational leadership has a comparatively stronger impact on employee innovation than its impact on employee productivity. In contrast, emotional stability has a comparatively stronger mediating role between transformational leadership and productivity. In the case of transformational leadership and employee innovation, job burnout had a stronger mediating effect. Importantly, both moderating effects are also proven and show that, in the presence of contingent rewards, the positive impact of

transformational leadership on emotional stability is reduced, while the negative impact of transformational leadership on job burnout is increased.

## **Chapter 6. Discussion**

### **6.1. Introduction**

This chapter highlights the discussion on the findings of this study. In particular, it provides a separate discussion of all developed hypotheses. The findings of this study are logically discussed in relation to previous studies.

### **6.2. Discussion on Findings**

This section is subdivided into multiple sections to highlight separate discussions with reference to each hypothesis.

#### **6.2.1. *The Impact of TL on ES***

The first hypothesis of this study posited that Transformational Leadership (TL) has a positive impact on Emotional Stability (ES) among employees in the petrochemical industry. The results of this study support this hypothesis, suggesting that TL behaviours contribute to increased ES among employees. Previous studies have also supported the positive relationship between TL and ES as components of emotional/psychological well-being. For example, a study by Arnold et al. (2007) found that TL was positively related to psychological well-being. Another study by Kelloway et al. (2012) found that TL is positively related to psychological well-being among employees. These findings support the idea that TL can have a positive impact on ES across different cultures and contexts. Furthermore, a study by Stein et al. (2021) found that TL was negatively related to emotional exhaustion, which is a dimension of burnout. This supports the idea that TL can have a buffering effect on the negative effects of job stressors such as emotional exhaustion.

One of the key components of TL is individualised consideration, which involves providing support, coaching, and feedback to each employee on an individual basis

(Bakker et al., 2022). In doing so, transformational leaders can create a supportive and empowering work environment that fosters employee well-being and resilience. The positive relationship between TL and ES can be explained by several factors. For instance, transformational leaders create a sense of purpose and meaning in the workplace by inspiring their followers to work towards a shared vision or goal. This can reduce feelings of stress and anxiety among employees and contribute to their overall emotional well-being (Stordeur et al., 2001).

The positive relationship between TL and ES can be further justified by the fact that transformational leaders create a culture of trust and open communication within an organisation. This can lead to a sense of psychological safety among employees, which refers to the perception that one can speak up, take risks, and express oneself without fear of negative consequences (Leithwood & Jantzi, 2005a). Psychological safety has been found to be positively related to ES, as individuals who feel safe and supported in their work environment are more likely to experience positive emotions and less likely to experience negative emotions (Newman et al., 2017).

Apart from the above, transformational leaders provide individualized support and feedback to their followers, which can increase feelings of competence and confidence (Anderson, 2017). This, in turn, can lead to improved emotional well-being as individuals with higher levels of self-efficacy tend to experience less stress and anxiety (Sebastian, 2013). Finally, research has shown that TL can have a buffering effect on negative stressors in the workplace. When employees are faced with high levels of job demands or work pressure, transformational leaders can provide emotional and instrumental support, helping employees to cope with these stressors and maintain their ES (Cheung & Wong, 2011).

There may be some unique aspects of the petrochemical industry and Abu Dhabi that influence the relationship between TL and ES. For example, the petrochemical industry is known for its high-risk and high-pressure work environment, which can be particularly stressful for employees (Hassani et al., 2017). In such an environment, TL may be particularly effective in helping employees feel more supported and empowered, contributing to greater ES. Additionally, the petrochemical industry is often characterized by a hierarchical and bureaucratic organizational structure, which can create barriers to communication and collaboration (Li, 2016).

TL, with its emphasis on open communication, collaboration, and empowerment, may be particularly effective in breaking down these barriers and promoting a more positive work environment (Fitzgerald & Schutte, 2010). For example, in Abu Dhabi, there is strong emphasis on loyalty, respect for authority, and group harmony (Al Hebsi & Wilkins, 2022). TL, which emphasises empowerment, collaboration, and individual creativity, may be perceived differently in this context than in other cultural contexts. Leaders who are more directive and authoritarian may be preferred in certain situations. Based on the above discussion, it can be concluded that existing evidence also supports the positive relationship between TL and ES in the context of the petrochemical industry in Abu Dhabi.

### **6.2.2. *The Impact of TL on JB***

hypothesis of this study posits that TL has a negative impact on Job Burnout (JB). The results of this study support this hypothesis, indicating that TL is associated with lower levels of JB among employees in the petrochemical industry in Abu Dhabi. JB is a significant concern for organizations worldwide, as it is associated with a range of negative outcomes, including decreased job satisfaction (Kim et al., 2017), decreased organizational commitment (Salehi & Gholtash, 2011), and increased turnover intentions (Ran et al.,

2020). Through TL, employees may experience a sense of purpose and mean in their work, opportunities for growth and development, and a supportive work environment., resulting in a reduction in JB (Alshehhi et al., 2019; Bakker et al., 2022). The findings of this study are consistent with previous research, which also found a negative relationship between TL and JB. For example, a study by Cheng et al. (2016) found that TL was negatively related to JB among nurses, and a study by Salem (2015) found a negative relationship between TL and JB among hotel employees. These studies suggest that TL may be a powerful tool for reducing JB across a range of industries and contexts.

The relationship between TL and JB is a critical issue in today's organisations, and it is essential to understand the nuances of this relationship in the context of the petrochemical industry in Abu Dhabi. In the petrochemical industry, employees often work in hazardous and high-pressure environments, which can lead to stress and burnout (Emirates NBD, 2022). Transformational leaders can mitigate this by creating a work environment that is supportive and empowering, where employees feel valued and respected and where their contributions are recognised and appreciated. By doing so, transformational leaders can promote employee well-being, reduce stress and burnout, and enhance productivity and innovation (Hildenbrand et al., 2018; H. Khan et al., 2020b).

The negative relationship between TL and JB can be explained by several factors. For instance, transformational leaders often provide their employees with a sense of meaning and purpose in their work, which can reduce feelings of cynicism and exhaustion that are commonly associated with burnout (Risambessy et al., 2012; Wu et al., 2020). By inspiring and motivating employees, transformational leaders can create a sense of passion and commitment towards work that can reduce the likelihood of burnout (Prochazka et al., 2018). Similarly, transformational leaders often involve their employees in decision-making processes and provide them with a high degree of autonomy in their work (Den

Hartog & Belschak, 2012). This can reduce feelings of emotional exhaustion, as employees feel that they have more control over their work and are able to better manage their workload (Gong et al., 2013). By giving employees a greater sense of control, transformational leaders can also reduce feelings of depersonalisation, which are often associated with burnout. Hence, the above discussion highlights the negative relationship between TL and JB, which is consistent with existing studies.

### **6.2.3. *The Impact of TL on EP***

The third hypothesis, which posits that TL has a positive influence on Employee Productivity (EP), is supported by a significant body of research. TL has been shown to have a positive impact on employee outcomes, including productivity (Kapur, 2019; Masi & Cooke, 2000; Peters, 1997; Ratnaningtyas et al., 2021; Vatankhah et al., 2017). One reason why TL is effective in enhancing EP is that it fosters a sense of shared vision and purpose between leaders and followers (Al Ahmad et al., 2019; Arif & Akram, 2018). Transformational leaders are able to communicate a clear and compelling vision to their organisation, which helps motivate employees to work towards a common goal. This shared vision creates a sense of alignment between the organisation's goals and employees' personal goals, which can increase their commitment and motivation to perform their work tasks (Vatankhah et al., 2017).

Furthermore, TL has been shown to increase employee self-efficacy, which is an individual's belief in their ability to perform a given task (Luthans & Youssef, 2007). This increase in self-efficacy can lead to greater confidence in employees' ability to complete their work effectively, which can in turn lead to increased productivity. Studies have also found that TL can increase employee creativity and innovation, which can have a positive impact on productivity (Jung & Avolio, 2000). Leaders who are transformational encourage their employees to think creatively and to come up with new ideas, which can

lead to the development of innovative solutions to problems, improved processes, and new products or services. The positive relationship between TL and EP is justified by the fact that the TL model emphasises the importance of creating a vision for the organisation and inspiring employees to work towards that vision. This shared vision creates a sense of purpose and direction for employees, which can increase their motivation to perform their work tasks. This motivation, in turn, can lead to increased productivity (Bass, 1985).

Some studies have found mixed or even negative results regarding the relationship between TL and EP. For example, a study by Kark et al. (2003) found that the relationship between TL and productivity was contingent on the team's level of task interdependence. Another study by Astuty and Udin (2020) found that the relationship between TL and EP was partially mediated by perceived organizational support. However, it is worth noting that these studies were conducted in different contexts and with different measures of TL and productivity, which could account for the differences in the findings. In the context of the petrochemical industry and Abu Dhabi, there may be unique factors that affect the relationship between TL and EP. Therefore, it is important to interpret these findings in the context of specific studies. Based on the above discussion, it can be concluded that TL is a strong predictor of EP.

#### **6.2.4. *The Impact of TL on EI***

The fourth hypothesis that TL has a positive impact on Employee Innovation (EI) is consistent with previous research in the field (Kao et al., 2015; Sehgal et al., 2021). Transformational leaders are known for their ability to inspire and motivate their followers to be creative and think outside the box. By setting a clear vision, providing support and encouragement, and challenging their followers to reach their full potential, transformational leaders can create a culture of innovation within their organisations. In the context of the petrochemical industry, which is often characterized by complex and

technically challenging tasks, innovation is critical for staying competitive (Hassani et al., 2017; Li, 2016). By fostering a culture of innovation through TL, organisations in this industry can improve their products and services, develop new technologies, and increase their efficiency (Emirates NBD, 2022).

It's worth noting that the relationship between TL and innovation is not straightforward and may be influenced by various factors, such as the organizational culture, the level of resources available, and the characteristics of the employees (Al Ahmad et al., 2019; Hui et al., 2018; Khan & Khan, 2019). Nonetheless, the hypothesis that TL has a positive impact on EI is well supported by previous research and is likely to be relevant in the context of the petrochemical industry in Abu Dhabi. In the context of Abu Dhabi, there is a growing need for innovation in the petrochemical industry to keep up with ever-evolving market demands and advancements in technology (Davidson, 2010). A TL style can help foster a culture of innovation and creativity within the organization, ultimately leading to increased competitiveness and profitability (Lei et al., 2020; Putra et al., 2020).

There are some studies, such as W. Zhang et al. (2019) and J.-X. Chen et al. (2019), that have found no significant relationship between TL and EI. These studies suggest that the relationship may be more complex and dependent on contextual factors, such as organizational culture and structure, industry, and individual characteristics. Therefore, based on above discussion, it can be concluded that TL has a major role in fostering innovation among employees of Petrochemical industry in Abu Dhabi.

#### **6.2.5. *The Impact of ES on EP***

The fifth hypothesis, stating that ES has a positive influence on EP, is consistent with prior research on organizational behaviour and human resource management. ES refers to an individual's ability to manage their emotions and maintain a calm and

composed demeanour, even in stressful situations. This ability can lead to a more positive work environment, increased job satisfaction, and improved productivity. Research has shown that ES is positively related to various workplace outcomes, including job satisfaction, job performance, and productivity (Chaudhry et al., 2017; Greenbaum et al., 2021; Judge et al., 2004; Kundi et al., 2021). Employees who are emotionally stable are less likely to be affected by stress and negative emotions, allowing them to remain focused on their work and become more productive (Vittersø, 2001). Additionally, emotionally stable individuals are more likely to engage in problem solving and creative thinking, which can lead to increased innovation and improved productivity (Alessandri et al., 2018).

In the context of the petrochemical industry and Abu Dhabi, ES may be particularly important given the high-pressure and potentially hazardous nature of the work (Hassani et al., 2017). Employees in this industry may face a variety of stressors, such as tight deadlines, high-risk work environments, and complex tasks (Li, 2016). ES can help employees manage these stressors effectively and remain productive even in challenging circumstances. Similarly, in the context of Abu Dhabi, where the economy is heavily reliant on the oil and gas industry (Al Mansoori et al., 2020), the relationship between ES and productivity may be particularly important. Employees in this industry may face unique challenges related to the nature of the work and the cultural context in which they operate and may require a certain level of ES to perform their job effectively.

The positive relationship between ES and EP can be explained by multiple factors. For instance, emotionally stable employees are more likely to have a positive outlook towards their work and are better equipped to handle stress and work-related pressures, which in turn can lead to increased productivity (Aghdasi et al., 2011; Alessandri et al., 2018). Additionally, employees with high levels of ES tend to have a stronger sense of

self-efficacy (Alessandri et al., 2018; Judge et al., 2004), which is the belief in one's ability to accomplish tasks and achieve goals. This self-efficacy can lead to increased motivation, effort and persistence towards achieving work-related goals, which can ultimately result in higher levels of productivity (Den Hartog & Belschak, 2012; Yener et al., 2020).

Furthermore, ES are linked to higher levels of job satisfaction (Khalatbari et al., 2013).

Employees who are satisfied with their jobs are more likely to be engaged in their work and have a positive attitude towards their tasks, which can also lead to higher levels of productivity (Greenbaum et al., 2021). Overall, the discussion highlights the logical explanation of the positive relationship between ES and EP, which is also supported by existing literature.

#### **6.2.6. *The Impact of ES on EI***

The sixth hypothesis, stating that ES has a positive impact on Employee Innovation (EI), is supported by previous research (Park et al., 2022). ES is a personality trait characterised by a person's ability to remain calm and stable in stressful situations (Chaturvedi & Chander, 2010). This trait is important in the workplace, as it allows employees to deal with challenging situations without being overwhelmed by negative emotions, leading to a more positive work environment and better performance (Greenbaum et al., 2021). Studies have shown that ES is positively associated with creativity and innovation in the workplace (Koch & Adler, 2018a; Tajpour et al., 2018). ES enables individuals to remain focused, adaptable, and open to new ideas, thereby promoting creativity and innovation (Khalatbari et al., 2013; Park et al., 2022). When employees feel emotionally stable, they are more likely to engage in creative problem-solving, generate new ideas, and take calculated risks that can lead to innovation (Badri-Harun et al., 2016; Miao et al., 2021).

In the context of the petrochemical industry, ES is particularly relevant as this industry is known for its complex and high-pressure work environments. Petrochemical plants require a high level of safety, reliability, and process optimization (Huang et al., 2012). Employees in this industry must be able to handle the stress associated with high-pressure work environments and adapt quickly to changing conditions to ensure safety and efficiency (Poorabdian et al., 2013). ES can help employees manage the stress associated with this industry, positively impacting innovation (Murugan & Prabadevi, 2021). In the context of Abu Dhabi, ES is an important trait for employees in the petrochemical industry. Abu Dhabi is known for its rapidly growing economy, and its petrochemical industry is a major contributor to this growth (Davidson, 2010). As such, the industry demands highly skilled and motivated employees who are capable of handling the challenges associated with this industry. ES can help employees in Abu Dhabi deal with the demands of the industry and remain focused and motivated, leading to a positive impact on innovation (Al Ghailani et al., 2018).

The positive relationship between ES and EI can be justified by the fact that ES helps individuals remain calm and focuses on challenging and uncertain situations. This emotional state allows them to think creatively and generate new ideas even in the face of ambiguity and risk. In contrast, individuals with low ES may become anxious or stressed in such situations, which can lead to a lack of focus and creativity (Koch & Adler, 2018b; Stordeur et al., 2001). Moreover, ES may also help individuals to better handle constructive criticism and feedback, which are important elements of the innovation process. When employees are emotionally stable, they are less likely to take criticism personally and more likely to view it as an opportunity to learn and improve. This can lead to a more positive and productive work environment, in which employees feel comfortable sharing and building upon each other's ideas.

### **6.2.7. *The Impact of JB on EP***

The seventh hypothesis states that JB has a negative impact on EP, and the results of this study support this hypothesis. JB is a phenomenon that arises when an employee experiences exhaustion, cynicism, and reduced professional efficacy in response to chronic occupational stressors (Ran et al., 2020; Wang et al., 2019). It can manifest in several ways, including physical, emotional, and mental exhaustion, depersonalization, and feelings of inadequacy in one's job (Abate et al., 2018; Alessandri et al., 2018). When employees experience JB, they are likely to be less motivated and engaged, which can lead to decreased productivity (Risambessy et al., 2012).

Employees may also experience physical and emotional exhaustion, which can lead to absenteeism, tardiness, and reduced overall performance (Abate et al., 2018; Ran et al., 2020). Previous research has also found a negative relationship between JB and productivity. Mirkamali et al. (2019) found that JB is negatively associated with several dimensions of job performance, including productivity, quality of work, and job satisfaction. Another study by Risambessy et al. (2012) found that JB is negatively associated with productivity.

In the context of the petrochemical industry, JB can be particularly prevalent because of the high levels of stress and pressure that employees face in this industry. The industry involves working with hazardous materials, dealing with tight deadlines, and working long hours, which can lead to chronic stress and burnout (Huang et al., 2012; Li, 2016). In Abu Dhabi, the petrochemical industry is a significant contributor to the economy, and JB is a common problem in this industry (Emirates NBD, 2022). A study by Abudaqa et al. (2022) found that JB was a significant predictor of employee turnover intention in the petrochemical industry in the UAE. While there is consistent evidence supporting a negative relationship between JB and EP, some studies have found mixed or

conflicting results. For example, a study by Molero et al. (2018) found that the relationship between JB and EP was mediated by self-efficacy and self-esteem. These findings suggest that the impact of JB on productivity may depend on individual factors, and that more research is needed to fully understand this relationship. Another study by Zaid (2019) used three dimensions of JB, namely exhaustion, depersonalisation, and personal accomplishment, and found that depersonalisation had no significant impact on employee performance in the context of university staff.

#### **6.2.8. *The Impact of JB on EI***

The finding that JB has a negative impact on EI (eighth hypothesis) is consistent with previous research in the field. JB has been found to be associated with decreased creativity and innovation in the workplace (Noworol et al., 2017; Safari, Adelpanah, Soleimani, Heidari Aqagoli, et al., 2020). This negative relationship can be explained by the fact that JB leads to emotional exhaustion, reduced job satisfaction, and decreased motivation and engagement, all of which are necessary for creativity and innovation in the workplace (Drafahl, 2020). When employees experience burnout, they may have less energy and enthusiasm to explore new ideas, take risks, and generate innovative solutions to problems (Karavasilis, 2019). Furthermore, the relationship between JB and EI can be explained through the conservation of resources theory, which proposes that individuals have a limited number of resources, such as energy and time, which they can use to cope with work demands (Hobfoll, 2011). JB depletes these resources, leaving employees with less energy and motivation to engage in innovative activities (Neveu, 2007). Furthermore, burnout can lead to cynicism and a lack of commitment to the organization, which can reduce an employee's willingness to contribute new ideas (Alarcon et al., 2011).

Studies have found that JB is negatively related to various aspects of innovation such as idea generation, creativity, and implementation (Ren & Zhang, 2015). For

example, a study conducted by Bakker et al. (2014) found that burnout was negatively related to innovative work behaviour among healthcare professionals. Another study by Demerouti et al. (2001) found that burnout is negatively related to creative thinking among teachers. Moreover, in the context of the petrochemical industry, where work is often demanding and high-stress, JB can be particularly detrimental to EI. In such an environment, employees may struggle to maintain their motivation and enthusiasm, which are critical for developing and implementing new technologies and processes (Heydari et al., 2019).

There is limited contradicting evidence available regarding the relationship between JB and EI. However, some studies have found that burnout can lead to a higher motivation for change and new ideas as a coping mechanism (Halbesleben & Buckley, 2004). These studies suggest that the relationship between JB and innovation may be complex and influenced by various factors, such as individual differences and situational factors (Alessandri et al., 2018; Kim et al., 2017; Koroglu & Ozmen, 2022). Overall, evidence supports the hypothesis that JB has a negative impact on EI. Organisations should be mindful of the negative effects of burnout on employee creativity and should provide support and resources to prevent and manage burnout.

#### **6.2.9. *ES as a Mediator (Between TL and EP)***

The finding that ES mediates the relationship between TL and EP (the ninth hypothesis) is consistent with previous research. In addition, Cubel et al. (2016), ES is one of the most important personality traits that affects job performance. ES is also positively related to other important job-related outcomes such as job satisfaction and organizational commitment (Baba, 2017). TL has been found to be positively related to EP (Greenbaum et al., 2021). By providing a vision and inspiring employees, transformational leaders can increase employee motivation, which in turn can lead to higher levels of productivity (Al

Ahmad et al., 2019; Bakker et al., 2022). In addition, transformational leaders can provide employees with the necessary resources and support to achieve their goals, which can also enhance productivity (Alshehhi et al., 2019; Arif & Akram, 2018).

However, the relationship between TL and EP is not direct because ES plays a mediating role in this relationship. In other words, transformational leaders can influence EP by promoting ES in the workplace. Employees who are emotionally stable are more likely to be motivated, committed, and productive (Kundi et al., 2021). ES also allows employees to better manage stress and adversity, which can increase their ability to focus on their work and achieve their goals (Strizhitskaya et al., 2018). Importantly, the results show that when the effects of TL are combined with ES, these effects are amplified, as emotionally stable individuals are better equipped to respond to the leadership behaviours of their supervisors (Mathew & Gupta, 2015). The mediating role of ES in the relationship between TL and EP has also been supported in previous studies. For example, Xiong Chen and Aryee (2007) found that ES mediates the relationship between TL and job satisfaction. In addition, Jaiswal and Dhar (2015) found that ES mediated the relationship between TL and employee creativity.

The relationship between ES, TL, and EP has been explored in several studies, and the results have consistently supported the mediating role of ES in this relationship (Bono & Ilies, 2006; Ilies et al., 2005). ES can act as a buffer against stressors and negative emotions, allowing employees to remain focused and engaged in their work (Kundi et al., 2022). In addition, emotionally stable individuals are more likely to experience positive emotions, which are associated with higher levels of job satisfaction and performance (Chaudhry et al., 2017; Judge et al., 2004).

However, some studies have contradicted the mediating role of ES between TL and EP. For example, a study by Rahman et al. (2020) found that while TL had a positive effect

on employee creativity and job satisfaction, ES did not mediate this relationship. Similarly, a study by Erdogan and Enders (2007) found that the relationship between TL and employee performance was not mediated by ES. The reasons for the contradictions between studies could be due to differences in sample size, industry, culture, and measurement tools (Erdogan & Enders, 2007; Rahman et al., 2020). Additionally, the role of ES as a mediator may be influenced by other individual or contextual factors such as the level of autonomy given to employees or the presence of supportive work environments. Overall, while some studies have found support for the mediating role of ES between TL and EP, other studies have contradicted this relationship. Therefore, further research is needed to fully understand the mechanisms through which TL affects EP and the role of ES in this process.

#### **6.2.10. ES as a Mediator (Between TL and EI)**

The tenth hypothesis that ES mediates the relationship between TL and EI was also supported by this study. The results suggest that TL positively influences ES, which in turn positively affects EI. This indicates that ES acts as a mediator between TL and EI. Although previous studies have not examined the mediation relationship of ES between TL and EI, some studies have proposed a direct effect of TL on ES and ES on EI. For instance, Zwingmann et al. (2016) found a negative impact of TL on ES, while Park et al. (2022) found a positive impact of ES on creativity.

The mediating relationship of ES with the impact of TL on EI can be justified by several theoretical frameworks. For instance, TL theory emphasises the importance of leaders inspiring and motivating their followers to achieve higher levels of performance and develop innovative solutions to challenges (Çekmecelioğlu & Özbağ, 2016). This is achieved through behaviours such as intellectual stimulation, individualised consideration, and idealised influence. These behaviours increase employees' intrinsic motivation,

creativity, and willingness to take risks, which can lead to greater innovation (Koh et al., 2019). ES theory suggests that individuals who are emotionally stable are better able to regulate their emotions, cope with stress, and respond positively to challenges (Chaudhry et al., 2017; Judge et al., 2004).

This allows them to maintain a more positive and proactive mindset that is critical for creative thinking and innovation. Furthermore, emotionally stable individuals are less likely to experience JB, which is associated with reduced creativity and innovation (Noworol et al., 2017). Therefore, when employees perceive their leaders as transformational, they are more likely to experience positive emotional states and be motivated to engage in innovative activities (Ratnaningtyas et al., 2021; Vatankhah et al., 2017). This is because transformational leaders can create a supportive environment that fosters creativity and innovation. ES mediates this relationship by allowing employees to better regulate their emotions and respond positively to challenging situations, which increases their capacity for innovative thinking and behaviour (Judge et al., 2004; Kundi et al., 2021).

In the context of the petrochemical industry, where innovation is critical for sustainability and growth, this mediation relationship is particularly relevant. Petrochemical companies need to constantly innovate to remain competitive and meet the evolving demands of their customers and the market (Li, 2016; Poorabdian et al., 2013). Transformational leaders who prioritise innovation and inspire their employees to think creatively can help companies achieve their goals. Furthermore, ES is critical for employees working in this high-pressure and potentially hazardous industry, where safety and risk management are paramount (Alessandri et al., 2018; Park et al., 2022). Research has also suggested that the relationship between ES and innovation is stronger in collectivist cultures, such as Abu Dhabi, where social harmony and group cohesion are

valued (Al Hebsi & Wilkins, 2022; Davidson, 2010). In these cultures, ES is associated with greater interpersonal skills and the ability to work effectively in a team, which are essential for innovative collaboration. Therefore, the mediating relationship between ES and TL is particularly important in the context of Abu Dhabi's petrochemical industry, where teamwork and collaboration are critical for success.

#### **6.2.11. JB as a Mediator (Between TL and EP)**

Based on the findings of this study, JB has a negative impact on EP, whereas TL has a positive impact on EP; therefore, it is plausible that JB mediates the relationship between TL and EP. The results support this relationship, which is related to the eleventh hypothesis of this study. Specifically, it may be that when employees experience high levels of JB, they are less likely to be motivated and engaged in their work, which could lead to decreased productivity (Abudaqa et al., 2022; Alessandri et al., 2018). On the other hand, when employees experience lower levels of JB, they may be more likely to feel motivated and engaged, which could lead to increased productivity. Furthermore, when TL is present, it may be able to mitigate the negative effects of JB on productivity. This is because transformational leaders are known to provide their employees with support, encouragement, and resources to help them cope with stress and maintain their motivation, even in challenging circumstances (Cheng et al., 2016; Kapur, 2019). Importantly, the findings of this study are consistent with previous studies (Gill et al., 2006b; H. Khan et al., 2020a).

The mediating role of JB between TL and EP can be justified for several reasons. First, TL style can create a positive work environment by inspiring and motivating employees to achieve organizational goals (Weberg, 2010). This positive work environment can reduce JB and increase EP (Gill et al., 2006a; Ratnaningtyas et al., 2021). In addition, JB can lead to decreased productivity because of its negative impact on

employee well-being, including physical, emotional, and mental exhaustion (Baruch-Feldman et al., 2002; Nayeri et al., 2009). This exhaustion can lead to a decrease in motivation, engagement, and focus, which ultimately impacts productivity.

Transformational leaders who are aware of their employees' well-being can take measures to prevent or reduce JB by providing social support, work-life balance, and career development opportunities. This can improve employee morale, job satisfaction, and productivity (Kapur, 2019; Vatankhah et al., 2017). Finally, research has shown that JB is a significant predictor of turnover intentions and absenteeism, which can negatively affect organizational productivity (Mirkamali et al., 2019; Woo et al., 2017). Thus, reducing JB by implementing TL can have a positive impact on both employee well-being and organizational productivity.

In the context of the petrochemical industry in Abu Dhabi, JB can be a prevalent issue because of the demanding and highly stressful nature of the work. However, TL can help mitigate the negative effects of JB by creating a supportive and motivating work environment. Furthermore, the unique cultural and contextual factors of Abu Dhabi, such as emphasis on family and social relationships, can also impact JB and productivity. Therefore, it is important to consider these factors when examining the relationship between TL, JB, and productivity in the petrochemical industry of Abu Dhabi. However, it is important to note that the relationship between TL, JB, and EP is likely to be complex and multifaceted. The specific factors that mediate this relationship may depend on a variety of contextual factors, such as the nature of the work, the culture of the organization, and the personal characteristics of the employees (Davidson, 2010; Emirates NBD, 2022; Turner, 2021).

### **6.2.12. JB as a Mediator (Between TL and EI)**

The twelfth hypothesis, that JB mediates the relationship between TL and EI, suggests that the effect of TL on EI is partially transmitted through its influence on JB. In other words, transformational leaders can reduce JB among their employees, which in turn enhances their innovative behaviour. There is some evidence to support this hypothesis. A study by H. Khan et al. (2020a) found that TL has a negative impact on JB, which in turn leads to a low level of EI, as found by Noworol et al. (2017). Similarly, a study by Chen et al. (2022) also found that TL has a strong negative effect on JB in a sample of hospital employees, while burnout leads to decreased innovative work behaviour (Zainab et al., 2020).

It is important to note, however, that not all studies have found support for the mediating role of JB between TL and EI. For example, Tian et al. (2022b) found that JB does not mediate the relationship between TL and EI in a sample of teachers. JB can negatively impact EI by reducing motivation and creativity. When employees experience burnout, they may feel exhausted, disengaged, and emotionally drained, leading to a decrease in their ability to generate new ideas and approaches (Noworol et al., 2017). In contrast, TL can foster a work environment that promotes innovation by providing employees with a sense of purpose, encouraging them to take risks, and providing the necessary resources and support to implement their ideas (Al-Husseini et al., 2019).

JB plays a crucial role in determining the extent to which TL contributes to innovation by mediating the relationship between TL and EI. When employees experience low levels of burnout, they are more likely to be motivated and engaged (Igbokwe et al., 2019), leading to increased innovation (Gupta, 2020). On the other hand, when employees experience high levels of burnout, they may be less likely to engage in innovative activities due to reduced motivation and creativity (Lee et al., 2021; Quanle, 2011). Overall, JB

plays a crucial role in determining the extent to which TL influences EI. By reducing burnout levels, transformational leaders can create a work environment that fosters creativity, risk taking, and innovation among employees.

#### **6.2.13. Contingent Rewards as a Moderator (On the Relationship of TL and ES)**

The thirteenth hypothesis suggests that contingent rewards (COR) have a moderating effect on the relationship between transformational leadership and emotional stability. The results of this study indicate that this moderating effect is negative, which suggests that the provision of COR actually weakens the positive impact of transformational leadership on emotional stability. This finding may seem counterintuitive, as rewards are commonly believed to motivate employees and enhance their job satisfaction and well-being (Saether, 2020). However, there are several reasons why COR may have a negative moderating effect on the relationship between transformational leadership and emotional stability. For instance, the provision of COR may create a culture of extrinsic motivation, where employees focus more on achieving specific goals or objectives in order to receive rewards rather than on developing intrinsic motivation, which is driven by personal values and goals (Hwang & Jung, 2018; Vansteenkiste & Deci, 2003). This can lead to a decrease in job satisfaction and a sense of disillusionment among employees, which can ultimately affect their emotional stability (Manohar et al., 2017; Saether, 2020).

Similarly, the provision of COR may create a sense of competition among employees, which can be detrimental to their emotional well-being (Yamaguchi & Nishimura, 2019). When employees are pitted against each other, they may become more focused on outperforming their colleagues rather than on achieving their own personal goals and objectives. This can create a sense of stress and anxiety among employees, which can ultimately lead to decreased emotional stability (Chaudhry et al., 2017; Liu &

Yu, 2019). It is important to note that the relationship between COR and emotional stability may depend on a variety of factors, including the nature of rewards, cultural context, and individual differences among employees (Goschke & Bolte, 2014). Previous research has shown that COR can have a negative effect on intrinsic motivation, which may in turn impact emotional stability (Saether, 2020). Additionally, the way rewards are perceived and distributed within an organisation can also play a role in their effectiveness. For example, if employees perceive that rewards are unfair or inequitable, this may lead to negative reactions and reduced emotional stability.

Finally, the provision of COR may create a sense of entitlement among employees, where they expect to receive rewards for their performance regardless of whether or not they have truly earned them. This can lead to a decrease in job satisfaction and a sense of disillusionment among employees, which can ultimately affect their emotional stability. Overall, the negative moderating effect suggests that the provision of COR may not always be an effective strategy for enhancing employee well-being and emotional stability. It may be more beneficial for organisations to focus on developing intrinsic motivation among employees and creating a culture of collaboration and cooperation rather than competition and reward-seeking.

#### **6.2.14. Contingent Rewards as a Moderator (On the Relationship of TL and JB)**

The fourteenth hypothesis of this study suggests the moderating effects of COR on the relationship between TL and JB. The results support this relationship and indicate a positive moderating effect. Transformational leaders who provide COR are likely to motivate their followers to work towards achieving their goals (Puni et al., 2018), resulting in higher levels of job satisfaction, lower levels of JB, and greater commitment to the organization (Arnold et al., 2015; Puni et al., 2018). The use of COR can therefore act as a buffer against the negative effects of JB. In the context of the relationship between TL and

JB, the use of COR can play a significant moderating role. The provision of COR may help to mitigate the negative effects of JB by increasing employee motivation and engagement. Transformational leaders who offer COR can help to create a positive work environment where employees feel valued and supported, leading to lower levels of JB (Chen et al., 2022; Salem, 2015).

This finding is consistent with those of previous studies that have examined the relationship between rewards and job burnout. One study found that the provision of COR reduced the negative impact of JB on employee engagement and job satisfaction (Basińska & Wilczek-Rużyczka, 2013b). Another study found that COR acts as a buffer against the negative effects of JB on turnover intention (Koo et al., 2020). Studies have shown that COR can serve as a buffer against JB by increasing employees' sense of control and autonomy, providing them with a clear sense of goals and expectations, and reinforcing their sense of competence and accomplishment (van Dam et al., 2012).

Moreover, transformational leaders who use COR can help employees avoid burnout by providing them with clear goals and expectations. These goals can help employees stay focused and motivated and provide a sense of direction and purpose that is often lacking in the face of the demands and stressors of the workplace (Gaudet et al., 2014). Finally, COR can also reinforce employees' sense of competence and accomplishment, providing them with positive feedback and recognition for their efforts (Camps & Torres, 2011; Walumbwa et al., 2008; Xu et al., 2019), which can help counterbalance the negative effects of JB (Choi et al., 2012).

### **6.3. Chapter Summary**

This chapter highlights the discussion on the results of this study. It is important to note that TL has a positive impact on ES, EP, and EI and a negative impact on JB. Emotional stability acts as a mediator between TL and both dependent variables including

EP and EI. This mediation is partial; however, its inclusion amplifies the relationship between TL, EP, and EI. In the case of JB mediation, the impact of TL on EP and EI was reduced. These relationships were supported by the results of previous studies.

The moderating effects of COR are interesting as they represent a relationship opposite to what is commonly found and believed. For instance, the moderating effect of COR on the relationship between TL and ES is negative, which means that COR reduces the relationship between TL and ES; however, certain studies are available to support this relationship as rewards often target extrinsic motivation. Therefore, intrinsic motivation often reduces, which leads to a lower impact of TL on ES. However, this chapter also discusses the moderating effect of COR on the relationship between TL and JB, which is positive and indicates that in the presence of COR, TL is further capable of reducing JB.

## **Chapter 7. Conclusion**

### **7.1. Introduction**

This chapter explains the conclusions of the study. Specifically, this section involves research implications, limitations, future indications, and conclusions. In terms of research implications, both the theoretical and practical implications of the findings are highlighted. The limitations of the study highlight all the methodological and contextual limitations of this study, while future indications are mostly designed based on research implications and limitations. Finally, this chapter provides the conclusions of the study.

### **7.2. Research Implications**

This section is divided into two types of research implications, theoretical and practical, which are elaborated separately below.

#### **7.2.1. *Theoretical Implications***

Based on the findings of this study, several theoretical implications can be drawn that contribute to the existing literature in the field of organizational behaviour and management. First, the results of this study suggest that transformational leadership has a significant impact on both employee productivity and innovation. This finding reinforces the existing literature on the importance of transformational leadership in driving positive employee outcomes. This study extends the theoretical foundation of COR by highlighting how transformational leadership enables employees to conserve emotional and mental resources during high-pressure scenarios. By demonstrating the mediating role of emotional stability and job burnout, this study provides a nuanced understanding of how transformational leadership mitigates stressors and enhances resourcefulness, which is critical for sustainable productivity and innovation. The findings of this study provide further evidence for the value of investing in leadership development programs and training that emphasises transformational leadership behaviours. Second, the study's results

also highlight the importance of individual-level factors, specifically emotional stability, in shaping employee outcomes. Emotional stability is often overlooked in research on leadership and organizational behaviour; however, this study shows that it is a key factor in predicting both productivity and innovation. This has implications for hiring and selection practices as well as for the design of interventions aimed at promoting employee well-being. Furthermore, this study integrates SCT to explain the moderating role of contingent rewards. By reinforcing behaviours through rewards, the study demonstrates how leadership practices and rewards systems synergistically enhance employees' motivation, emotional stability, and performance outcomes, bridging theoretical gaps in leadership and incentive integration.

Third, the study's results demonstrate the negative impact of job burnout on both employee productivity and innovation. This highlights the importance of addressing burnout in the workplace through measures such as workload management, organizational support, and employee well-being initiatives. Organisations should be aware of the costs of burnout, not only in terms of employee well-being but also in terms of decreased productivity and innovation. Finally, the study's results also suggest that contingent rewards can play a moderating role in mitigating the negative impact of burnout on employee outcomes. This has implications for the design of performance management systems and incentive structures.

By emphasising contingent rewards, organisations can create a more positive work environment and reduce the likelihood of burnout. Overall, the findings of this study have important theoretical implications for the study of organizational behaviour and leadership. By emphasising the importance of transformational leadership, individual-level factors, such as emotional stability, and the negative consequences of job burnout, this study provides valuable insights for organisations seeking to promote employee productivity and

innovation. Additionally, this study's findings on the moderating role of contingent rewards highlight the importance of designing incentive structures that foster positive work environments and reduce the risk of burnout.

### **7.2.2. *Practical Implications***

Following are some practical implications of this study based on the findings. First, organisations should select and train leaders in transformational leadership. Additionally, they should ensure that their leaders provide contingent rewards to employees and that they promote emotional stability in the workplace. Industry practitioners in the petrochemical sector must consider sector-specific challenges, such as high-stress operational environments and diverse workforce dynamics, when implementing these strategies. Leadership development programs tailored for petrochemical leaders should focus on fostering resilience, adaptability, and the ability to manage innovation pressures effectively. This will help create a positive work environment and reduce job burnout, which, in turn, will enhance employee productivity and innovation. Second, organisations should design jobs that are challenging and provide opportunities for growth and development. This will increase employee engagement and motivation and reduce job burnout. Third, organisations should provide support to employees experiencing job burnout through counselling and coaching. They should also ensure that employees have a good work-life balance, which can help reduce job burnout.

Fourth, organisations should recognise and reward employees who demonstrate high levels of emotional stability, productivity, and innovation. This will encourage employees to continue exhibiting these behaviours and promote a positive work culture. Fifth, organisations should regularly monitor the levels of employee job burnout and provide feedback to employees on their performance. This will help to identify potential burnout situations early and take preventive measures to reduce the negative impact on

employee productivity and innovation. Moreover, organisations should implement data-driven employee monitoring systems to identify trends in burnout levels and provide predictive analytics for pre-emptive interventions. For example, digital dashboards can track engagement metrics, offering actionable insights to HR and leadership for real-time decision-making. Finally, organisations should also consider the cultural fit of employees when hiring, as it can influence their emotional stability and ability to work effectively under transformational leadership. Employing individuals who share the values and culture of an organisation can enhance job satisfaction and engagement.

Overall, the practical implications of this study suggest that organisations can benefit from promoting transformational leadership, emotional stability, and contingent rewards in the workplace. By doing so, they can reduce job burnout and increase employee productivity and innovation, ultimately leading to improved organizational performance.

### **7.3. Study Limitations**

Although this study provides valuable insights into the research question, multiple limitations should be noted. First, a convenience sampling technique was used to select participants. Although this method can be useful in certain situations, it also has several limitations that can affect the validity and reliability of a research study. For instance, it can lead to sampling bias (Etikan et al., 2016). This is because the sample may not be representative of the target population, as individuals who are easily accessible or willing to participate may have different characteristics or experiences than those who are not. This could limit the generalisability of the study's findings to a wider population.

Similarly, convenience sampling can lead to a lack of diversity in the sample (Farrokhi & Mahmoudi-Hamidabad, 2012). For example, if a researcher recruits participants from a single location or through social media, the sample may not be representative of individuals from other regions or demographics. This can influence the

external validity of the study's findings as the results may not be applicable to other groups or contexts. Importantly, convenience sampling can also lead to self-selection bias (Caputo, 2017). This occurs when individuals who choose to participate in a study have certain characteristics or experiences that differ from those who do not participate. This can affect the internal validity of the study, as it may be difficult to determine whether the results truly reflect the variable being studied or whether they are influenced by other factors.

Second, the data was collected through self-report surveys, which are subject to response bias (Rosenman et al., 2011). Respondents may have had difficulty accurately recalling their experiences or emotions, which could have affected the validity of the results. Additionally, participants may have been inclined to provide socially desirable responses, meaning they provided answers that they thought would be more acceptable to the researchers. This could have influenced the results and may not accurately reflect their true perceptions and behaviours. Third, this study used a cross-sectional design, which means that data were only collected at one point in time. This limits the ability to make causal inferences or to examine changes in variables over time (Solem, 2015). Fourth, data were collected through face-to-face visits by the organisations. This method may have resulted in a higher response rate, but it may also have introduced a social desirability bias or interviewer bias.

Fifth, the study was conducted in a specific context (the petrochemical industry in Abu Dhabi) and included only a limited number of variables. This means that the findings may not be generalisable to other industries or contexts. Sixth, while quantitative methods can provide valuable insights, they may not capture the full complexity and nuances of human experiences and behaviours (Queirós et al., 2017). Finally, although the study measured a range of variables, there may be other factors, such as organisational culture,

team dynamics, and employee motivation, that were not included that could influence the relationships between the variables studied. These factors may limit the generalisability of the findings or their ability to fully explain the results.

#### **7.4. Future Directions**

Based on the limitations and implications discussed earlier, several future research directions could be built upon this study.

First, while this study focused on the petrochemical industry in Abu Dhabi, future studies can replicate research in different industries and regions to determine if similar findings can be obtained. This can help in understanding whether the results are generalisable to other contexts or whether there are specific industry or regional factors that influence the relationships between variables. Second, this study used a cross-sectional design which limits its ability to make causal inferences. Future studies can use a longitudinal design to track changes in variables over time and to better establish the temporal sequence of relationships between variables. Third, while this study used a quantitative approach, future studies could also use qualitative research methods to provide a more in-depth understanding of the experiences and perceptions of employees, leaders, and managers in relation to the variables under investigation.

Fourth, this study focused on emotional stability and job burnout as mediators, and contingent rewards as moderators. Future studies can investigate other variables that may influence the relationship between transformational leadership and employee outcomes, such as organizational culture, work-life balance, and job demands and resources. Fifth, future studies could use intervention methods to test the effectiveness of different strategies for improving employment outcomes in the petrochemical industry. This can include training programs for managers to improve their transformational leadership behaviours, or the implementation of new policies and practices to reduce job burnout and increase

employee productivity and innovation. Finally, this study focused on transformational leadership, but future studies could investigate other leadership styles, such as transactional leadership, servant leadership, or authentic leadership, and compare their effects on employee well-being and performance.

Overall, these future indications can help build on the results of this study and advance the understanding of the complex relationships among transformational leadership, emotional stability, job burnout, contingent rewards, and employee outcomes in the petrochemical industry and beyond.

### **7.5. Study Conclusion**

The petrochemical industry is one of the key sectors of the global economy, contributing significantly to the development of many countries. In Abu Dhabi, the petrochemical industry is a vital sector that generates substantial revenue for the country. However, despite its importance, the industry faces many challenges, including attracting and retaining skilled workforce, enhancing productivity, and fostering innovation. In recent years, transformational leadership has emerged as a popular leadership style in many organisations. This leadership approach emphasises the importance of inspiring and motivating employees to achieve higher performance levels, promote innovation, and create a positive work environment. Moreover, emotional stability as a personality trait has been found to have a significant impact on employees' job performance and well-being.

Although many studies have investigated the effects of transformational leadership and emotional stability on employee outcomes, little research has been conducted on the mediating and moderating roles of emotional stability, job burnout, and contingent rewards in the relationship between these variables. Thus, this study aims to fill this gap in the literature by examining the relationship between transformational leadership, emotional stability, job burnout, contingent rewards, and employee outcomes (i.e. productivity and

innovation) in the context of petrochemical organisations in Abu Dhabi. Understanding the mechanisms that link these variables can provide valuable insights into how organisations can enhance employee well-being, productivity, and innovation, which in turn can help sustain the growth and competitiveness of the petrochemical industry in Abu Dhabi.

This study employs a deductive approach, which is commonly used in quantitative research, to test the hypotheses. The study was guided by positivist philosophy, which holds that knowledge can be discovered objectively and logically through empirical observation and measurement. A survey strategy was used to collect data from the participants. This strategy involved administering questionnaires to obtain responses from participants. This study uses a cross-sectional time horizon. This means that data were collected from the participants at a single point in time.

The research design allowed the researcher to examine the relationship between the variables at a specific point in time. Convenience sampling was used to select the participants. A sample size of 539 employees was chosen from petrochemical organisations in Abu Dhabi. The selection of participants was based on the availability of the participants at the time of data collection. The data collection process involved face-to-face visits to the selected organisations. The researcher administered the questionnaires to the participants and collected the completed questionnaires. The collected data were analysed using SPSS and SmartPLS. Structural equation modelling (SEM) was used to test the hypotheses.

Based on the research hypotheses, the results of the study indicate a significant positive relationship between transformational leadership and emotional stability, employee productivity, and innovation. This study found that transformational leadership significantly influenced emotional stability, which in turn significantly influenced employee productivity and innovation. These findings support the theoretical

underpinnings of this study, as well as the existing literature on transformational leadership and emotional stability. The study successfully fulfilled its research objectives by demonstrating that transformational leadership significantly enhances employee productivity and innovation through its direct influence and by addressing mediating variables such as emotional stability and job burnout. The results also validated the moderating role of contingent rewards, which further amplifies the positive effects of transformational leadership on employee outcomes, providing a comprehensive understanding of these relationships within the context of petrochemical organizations. These results fulfilled our research objectives. Each research objective was met: (1) The role of transformational leadership in improving emotional stability and mitigating job burnout was established, (2) the mediating roles of emotional stability and job burnout were empirically validated, and (3) the moderating impact of contingent rewards was clarified. This study provides actionable insights into how these factors collectively contribute to achieving higher employee productivity and innovation in the petrochemical sector. It is important to note here that all the developed hypotheses are supported, and the results are consistent with the existing literature.

The study also found that job burnout plays a significant mediating role in the relationship between transformational leadership and employee productivity and innovation. Specifically, this study found that job burnout partially mediated the relationship between transformational leadership and emotional stability, which in turn influenced employee productivity and innovation. These findings suggest that transformational leadership can have both direct and indirect effects on employee outcomes and that addressing job burnout may be a key factor in enhancing the positive effects of transformational leadership on employee productivity and innovation.

Additionally, the study found that contingent rewards had a significant moderating effect on the relationship between transformational leadership and emotional stability as well as the relationship between transformational leadership and job burnout. These findings suggest that contingent rewards may be an effective tool for enhancing the positive effects of transformational leadership on emotional stability and for reducing the negative effects of transformational leadership on job burnout.

The implications of this study suggest that organisations in the petrochemical industry in Abu Dhabi should focus on developing transformational leadership skills among their leaders, as well as implementing contingent reward systems to mitigate the negative effects of job burnout and enhance employee emotional stability, productivity, and innovation. The limitations of this study are related to the methods of the study, which may be subject to bias. Future studies could further build on these findings by exploring longitudinal designs to examine how transformational leadership sustains its effects over time and in varying contexts. Additionally, investigating other potential mediators, such as psychological empowerment or organizational culture, and moderators, like digital transformation or industry-specific challenges, could expand the understanding of these complex relationships. Additionally, the research could focus on exploring the role of other potential moderating and mediating variables as well as interventions to enhance transformational leadership and employee well-being in the petrochemical industry and other industries in Abu Dhabi.

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## Appendices

### Appendix A: Questionnaire

Respected Ms./Sir,

Greetings!! Thank you for your interest in our research project. We are conducting research on productivity and innovation of Petrochemical industry in Abu Dhabi. The aim of this research is to investigate the impact of transformational leadership on employee productivity and innovation in the mediation role of emotional stability and job burnout. Also, this study aimed to evaluate the moderation effects of contingent rewards on the relationship of transformational leadership and emotional stability as well as job burnout. We request you to support us in this research by answering the questions which are given in this questionnaire. It will take around 5 minutes to fill this questionnaire. There are no right and wrong answers. As far as possible, filling instructions are provided for the questions. In order to answer any question, please ☒ the option that best suits you or best reflects your feelings.

This research project is complying with the general research ethics. Please note that you are under no obligation to respond to this questionnaire. Your participation in this research should be free of any coercion as well as collusion. In addition, I do not offer any financial or other benefits for responding to the questions given in this research. I will ensure the confidentiality of the respondents. The findings of this research will also be reported in aggregate.

Thank you in anticipation for your intended support!

Regards and greetings once again.

Name: Saeed Ali Al Mansoori

Institution: The British University in Dubai

### Section 1

In this section, various questions about your demographics will be asked. Please answer by selection the option that matches to your requirements.

1- How old are you?

☐ Less than 25 years   ☐ 25 to 35   ☐ 36 to 45   ☐ 46 and above

2- What is your marital status?

☐ Single   ☐ Married

3- How many children do you have?

☐ No one   ☐ 1-3   ☐ 4-6   ☐ More than 6

4- What is the position that you occupy in your organization?

☐ Worker   ☐ Junior Manager   ☐ Middle Manager   ☐ Senior Manager

5- What is your highest level of education?

☐ Diploma   ☐ Intermediate   ☐ Graduation   ☐ Masters   ☐ PhD

6- What is your experience?

☐ Less than 1 year   ☐ 1-5 years   ☐ 6-10 years   ☐ 11-15 years   ☐ Above 15 years

## Section 2

In this section, various statements are presented to you. You are requested to share your level of agreement with these statements. You can do this by selecting suitable option, which is given in front of these statements. If you would select “1” then it would mean that you are strongly agreed with the statement. Likewise, if you would select “7” then it would mean that you strongly disagree with the statement. In order to select any option, you can encircle or tick the relevant option.

|                |       |                |         |                   |          |                   |
|----------------|-------|----------------|---------|-------------------|----------|-------------------|
| Strongly Agree | Agree | Somewhat Agree | Neutral | Somewhat Disagree | Disagree | Strongly Disagree |
| 1              | 2     | 3              | 4       | 5                 | 6        | 7                 |

| Sr#                         | Statements                                                | Scale |   |   |   |   |   |   |
|-----------------------------|-----------------------------------------------------------|-------|---|---|---|---|---|---|
| Transformational Leadership |                                                           |       |   |   |   |   |   |   |
| 1                           | Our leadership gives personal attention to each employee. | 1     | 2 | 3 | 4 | 5 | 6 | 7 |
| 2                           | Our leadership transmits a sense of mission to us.        | 1     | 2 | 3 | 4 | 5 | 6 | 7 |
| 3                           | My leadership increases my level of enthusiasm.           | 1     | 2 | 3 | 4 | 5 | 6 | 7 |
| 4                           | Our leadership emphasizes the use of my intelligence.     | 1     | 2 | 3 | 4 | 5 | 6 | 7 |
| Productivity                |                                                           |       |   |   |   |   |   |   |
| 5                           | I have a high work performance.                           | 1     | 2 | 3 | 4 | 5 | 6 | 7 |
| 6                           | I accomplish tasks quickly and efficiently.               | 1     | 2 | 3 | 4 | 5 | 6 | 7 |
| 7                           | I set a high standard of task accomplishment.             | 1     | 2 | 3 | 4 | 5 | 6 | 7 |
| 8                           | I achieve a high standard of task accomplishment          | 1     | 2 | 3 | 4 | 5 | 6 | 7 |
| 9                           | I always beat our team targets.                           | 1     | 2 | 3 | 4 | 5 | 6 | 7 |
| Emotional Stability         |                                                           |       |   |   |   |   |   |   |
| 10                          | I am confident I get the success I deserve in life.       | 1     | 2 | 3 | 4 | 5 | 6 | 7 |
| 11                          | Sometimes I feel depressed. (R)                           | 1     | 2 | 3 | 4 | 5 | 6 | 7 |
| 12                          | When I try, I generally succeed.                          | 1     | 2 | 3 | 4 | 5 | 6 | 7 |
| 13                          | Sometimes when I fail, I feel worthless. (R)              | 1     | 2 | 3 | 4 | 5 | 6 | 7 |
| 14                          | I complete tasks successfully.                            | 1     | 2 | 3 | 4 | 5 | 6 | 7 |
| 15                          | Sometimes, I do not feel in control of my work. (R)       | 1     | 2 | 3 | 4 | 5 | 6 | 7 |
| 16                          | Overall, I am satisfied with myself.                      | 1     | 2 | 3 | 4 | 5 | 6 | 7 |
| 17                          | I am filled with doubts about my competence. (R)          | 1     | 2 | 3 | 4 | 5 | 6 | 7 |

|                           |                                                                                               |   |   |   |   |   |   |   |
|---------------------------|-----------------------------------------------------------------------------------------------|---|---|---|---|---|---|---|
| 18                        | I determine what will happen in my life.                                                      | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 19                        | I do not feel in control of my success in my career. (R)                                      | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 20                        | I am capable of coping with most of my problems.                                              | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 21                        | There are times when things look pretty bleak and hopeless to me. (R)                         | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| <b>Innovation</b>         |                                                                                               |   |   |   |   |   |   |   |
| 22                        | I try new ways of doing things at work.                                                       | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 23                        | I search for new ideas of other people in order to try to implement the best ones.            | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 24                        | When I have a new idea, I try to involve people who are able to collaborate on it.            | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 25                        | I develop suitable plans and schedules for the implementation of new ideas.                   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 26                        | I try to involve key decision makers in the implementation of an idea.                        | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 27                        | I do not give up even when others say it cannot be done.                                      | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 28                        | My manager is tolerant of mistakes and errors during the implementation of something new.     | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 29                        | Most people in Abu Dhabi come up with new, original ideas at work.                            | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 30                        | Most people in Abu Dhabi are able to improvise easily when unexpected changes happen at work. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| <b>Contingent Rewards</b> |                                                                                               |   |   |   |   |   |   |   |
| 31                        | Leader provides meaningful rewards based upon task completion.                                | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 32                        | Leader seeks deviation from expectations and provides punishment.                             | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 33                        | Leader has assigned goals along with financial and non-financial rewards.                     | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 34                        | Leader appreciates upon task completion.                                                      | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Unlike above scales, for Job Burnout, if you would select “1” then it would mean that you always experience below mentioned conditions. Likewise, if you would select “7”

then it would mean that you have never experienced below mentioned conditions. In order to select any option, you can encircle or tick the relevant option.

| 1.<br>Always |                          | 2. Most of<br>the time |  | 3.<br>Often |  | 4.<br>Sometimes |  | 5. Once in a<br>while |  | 6.<br>Infrequently |   |   | 7.<br>Never |   |   |   |
|--------------|--------------------------|------------------------|--|-------------|--|-----------------|--|-----------------------|--|--------------------|---|---|-------------|---|---|---|
|              | Job Burnout              |                        |  |             |  |                 |  |                       |  |                    |   |   |             |   |   |   |
| 35           | Tired                    |                        |  |             |  |                 |  |                       |  | 1                  | 2 | 3 | 4           | 5 | 6 | 7 |
| 36           | Disappointed with people |                        |  |             |  |                 |  |                       |  | 1                  | 2 | 3 | 4           | 5 | 6 | 7 |
| 37           | Hopeless                 |                        |  |             |  |                 |  |                       |  | 1                  | 2 | 3 | 4           | 5 | 6 | 7 |
| 38           | Depressed                |                        |  |             |  |                 |  |                       |  | 1                  | 2 | 3 | 4           | 5 | 6 | 7 |
| 39           | Worthless/like a failure |                        |  |             |  |                 |  |                       |  | 1                  | 2 | 3 | 4           | 5 | 6 | 7 |

Thanks for your time and support!