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Doctor of Education in Organizational Leadership

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Women Leaders in the Oil and Gas Industry: How They Lead With Authenticity and Deal With
Underrepresentation and Gender Bias in the Macro, Meso, and Micro Levels of Society

A dissertation submitted in partial satisfaction
of the requirements for the degree of
Doctor of Education in Organizational Leadership

by

Michelle Ann Ballard

November 2023

Dedication

I dedicate this dissertation and all my work to God and my Savior, Jesus Christ. Without them, I would be nothing.

To my father Clifford Ballard, Jr., his 40-year career in the oil and gas industry has been the biggest inspiration for this dissertation. I remember a conversation on August 13, 2021, when my father told me that he was extremely ill and stated that he would not live to see me graduate. He asked me to promise him that no matter what happened to him, I would not give up on getting my doctorate. We later discovered he was suffering from COVID-19 and then passed away from the virus.

Dad, I love you very much and know you are at peace in Heaven. I know you will be there when I walk the stage.

To my mother Betty Ballard, words cannot express how much you have been there for me through thick and thin. We have always depended on each other through the good, the bad, and the ugly. Life has been challenging, but we always have each other to lean on. Mom, I love you very much.

I kept my promise.

Clifford Alexander Ballard Jr.

January 27, 1959 - September 4, 2021

“Simple Man”

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Abstract

This study was conducted between March 2023 and April 2023 and measured if women leaders in the oil and gas industry could lead authentically while dealing with gender biases. Women executives encounter macro-level challenges such as recruitment, retention, maintaining a career in oil and gas, feeling a sense of belonging, and gender prejudices. Women have faced organizational obstacles and challenges such as modifying their personalities, being underrepresented in their organization, unequal compensation, discriminatory stereotypes, and scarcity of resources. However, women in the industry also confront nonorganizational deterrents such as work-life conflict, harassment, and being regarded as poor advocates for their necessities. The study was a descriptive qualitative interview study. Data were collected by interviews with 12 participants with the following criteria: Participants were women, had at least 5 years in a leadership role in an oil and gas company, and worked in the United States. The results concluded that most participants felt that the human resources department was responsible for the gender biases faced in their companies. Participants also felt that once they reached leadership status, their biases ceased. Practical application methods to lessen gender biases are included in the study.

Keywords: Authentic leadership, downstream, gender inequality, lower management, middle management, upper management.

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Chapter 1: Introduction

Background

Historically, leaders in the U.S. oil and gas (O&G) industry have been predominantly White men, well-educated (via academics or common knowledge of the business), and wealthy (Shortland, 2018). There are exceptions. For example, my father did not fit some of these parameters: He was part Hispanic and not wealthy but made a healthy living through employment. For my father, academics was not his forte. He barely graduated high school and never went to college. He said, “I became a boss because of my experience on the rig.” My father worked in the O&G industry for 40 years. The O&G culture plays a massive role in how people view gender in the organization. To me, it seemed like a “men’s club.” As a teenager, I would go with my father to his shop to get tools and the wellhead ready for the rigs. When I told him I would use the restroom, he always said, “Watch out because it is dirty with oil base, and do not look at the magazines.” The shop had only a men’s restroom, it was greasy, and had Playboy and Penthouse magazines lying about.

A woman secretary used the bathroom in the shop and found the restroom in horrible condition: it was dirty and there were adult magazines. She sued the company for sexual harassment, and the employees had to clean up the bathroom by removing the magazines and had to build a women’s restroom for the shop. I remember thinking it was customary to have a restroom like that because men worked in the shop, and women could use one in the office. My father always said the shop and field “was no place for a woman” because of how dirty the locations were and how the men behaved at the sites. My dad always encouraged me to “go to college and get a doctorate.” He would get upset if anyone said anything against women and felt they should be treated respectfully.

Even though my father always encouraged me to pursue what I wanted in life, he also recognized that some businesses and positions in certain companies are not as welcoming as others towards women. For example, he felt it was okay for a few women to hold positions in the office of an O&G company but not in the field and certainly not as a part of management. Researchers have demonstrated that women can be crucial to an organization's management team (Hoffman & Friedman, 2018; Murphy et al., 2021; Shortland, 2018; Srinivas et al., 2020).

Oil and Gas Industry Statistics

Since the mid-20th century, women have become interested in the O&G industry. Women employees averaging over a decade in the O&G sector comprise 22% of O&G workers worldwide (Hoffman & Friedman, 2018). Gender diversity among O&G workers is more prevalent with improved policies towards women in relation to seniority, recruitment, retention, and maintaining a career in the industry. Women in the industry have begun to feel a sense of belonging, and gender biases toward women have been reduced (Hoffman & Friedman, 2018; Murphy et al., 2021; Shortland, 2018; Srinivas et al., 2020).

In the O&G industry, the younger the workers are, the more opportunities for men to make up the workforce. Statistically, women make up 27% of the entry-level positions, 17% of the executive and senior-level positions, and 1% of the CEOs (Williams, 2019). According to U.S. Bureau of Labor Statistics, in 2022 the racial breakdown in the U.S. O&G industry was 66% White, 14.5% Hispanic, 7.4% Asian, and 5.7% African American (Martinez & Cristnacht, 2021).

Statement of the Problem

Women executives encounter macro-level challenges, such as getting recruited, retained, maintaining a career in O&G, feeling a sense of belonging, and gender prejudices. Women have

faced organizational obstacles and challenges: modifying their personalities, being underrepresented in their organization, unequal compensation, discriminatory stereotypes, and scarcity of resources (Coleman, 2019; Hoffman & Friedman, 2018; Murphy et al., 2021; Shortland, 2018; Srinivas et al., 2020). However, women in the O&G industry also confront nonorganizational deterrents, such as work-life conflict, harassment, and being regarded as poor advocates for their necessities (Coleman, 2019; Hoffman & Friedman, 2018; Murphy et al., 2021; Shortland, 2018; Srinivas et al., 2020). Women leaders have also encountered barriers preventing them from achieving leadership status and professional improvement (Hoffman & Friedman, 2018; Murphy et al., 2021; Shortland, 2018; Srinivas et al., 2020).

Women leaders have also experienced gender stereotypes, cultural constraints, biased leadership perceptions, discrimination, and lack of sponsorship, mentoring, and support. Men's organizational culture, salary inequality, unequal measures, and workplace harassment have also been issues (Coleman, 2019; Hoffman & Friedman, 2018; Murphy et al., 2021; Shortland, 2018; Srinivas et al., 2020). Challenges are likewise at the micro or individual level because of work/home conflict and the mental glass ceiling. Studies on women's leadership impediments are exhaustive; however, little literature has investigated the relationship between organizational and societal cultural hindrances to women seeking leadership roles in the O&G industry (Diehl & Dzubinski, 2016).

Purpose and Nature of the Study

This study aimed to explore women executives in the O&G industry concerning underrepresentation. In this study I also focused on gender inequality experienced by these women leaders using Diehl and Dzubinski's (2016) three levels of gender bias: macro, meso, and micro. This study was a descriptive qualitative approach to analyze women leaders in the O&G

industry who face organizational and nonorganizational leadership barriers and to suggest improvements for further research. The study also accumulated suggestions by investigating the connection between corporate and nonorganizational obstacles to women pursuing leadership roles in the O&G industry. I will also examine how companies have developed programs. However, women in the O&G industry still need help to achieve leadership roles. Last, the study explored if and how women leaders have led authentically and what O&G companies have been executing to get more women interested in O&G careers. The data assemblage consisted of face-to-face interactive interviews with 12 women who maintain upper- or lower-level leadership positions in O&G companies.

Research Questions

In this research study I addressed the following research questions:

RQ1: What are the lived understandings of women leaders in the O&G sector regarding gender inequalities?

RQ2: What are the lived understandings of women leaders in the O&G sector regarding individual authenticity?

RQ3: What are the solutions to advance women leaders in the O&G industry?

I chose a descriptive qualitative approach for this study to evaluate the lived experiences of women leaders in the O&G industry and comprehend the importance they allocate to those experiences. The issue being investigated is that women in O&G face gender inequalities; therefore, they cannot rule authentically. Also, I analyzed the thoughts and experiences of participants regarding gender inequalities they have experienced in the workplace.

Key Terms

Authentic leadership. This is leadership that displays an increased self-awareness and knows its weaknesses and strengths. It is a leadership style that utilizes others' values and significance in the workplace. It is a leadership style with a high-quality exchange relationship with their followers that allows associates feel they are treated correctly at work. Authentic leadership creates high-quality exchange relationships (Zhang et al., 2021).

Downstream. This is the operations that refine crude oil and process natural gas. These processes provides gasoline or petrol, kerosene, diesel, fuel or jet oil, lubricant waxes, asphalt, NLG or LPG, and petrochemicals. Delivery to the end user is also a part of the downstream sector. (Mojarad et al., 2018).

Gender inequality. This is a difference in treating two or more proportional groups: men and women. (Essig & Soparnot, 2019).

Leader/manager. This is a person who has the knowledge, skills, and behaviors to guide, motivate, and direct a team (Umuteme & Adegbite, 2022).

Lower management. These are the people who handle the daily operations of the company. Examples are service supervisor, shop foreman, office manager, rig crew leader, accounts officer, and sales supervisor (Umuteme & Adegbite, 2022)

Middle management. These are people who are in charge of inventory, safety, and security and help restore corrective actions before a technical failure occurs (e.g., branch manager; Umuteme & Adegbite, 2022).

Midstream. These are operations that consist mainly of transportation from the well to the processing facilities and refineries (Mojarad et al., 2018).

Upper management. These are individuals and teams that make the primary decisions for a company. Examples are C-level management, CEOs, or CFOs (Umuteme & Adegbite, 2022).

Upstream, understood as E&P. *E* is for exploration, and *P* is for production; they are divided into other parts, which depend on the quality of the reservoir and occurrences at the field. Upstream, searching for potential onshore or offshore crude oil and natural gas is completed, then drilling exploratory and appraisal wells. Commercial production begins after drilling several development wells and connecting them to the surface production unit and transportation facilities (Mojarad et al., 2018).

Importance of Study

Gender diversity and including everyone in the workplace are worthwhile to all organizations. According to Yanosek et al. (2019), the O&G industry has had women outshine men in leadership areas. Because of this, the industry has worked to retain, promote, and entice women to the business. An aging workforce and a need for the latest skills in newer analytics, machine learning, and robotics concern industry workers because knowledge can be lost (Yanosek et al., 2019). On top of an aging workforce and people needing new skills, the O&G sector has seen plunging numbers of men or women applicants.

A decade ago, O&G was the 14th most wanted employer for engineering and technology students. Now, it is 35th. Industry leaders must deepen and diversify their employee applicant pool to acquire talent. One way of combating this problem is to obtain and retain more talented women. Women constitute only 15 % of the O&G workforce, and the industry has a long way to go to reach its goals (Yanosek et al., 2019). Applicants seeing women in upper leadership positions can usher in more differing perspectives, greater organizational strategies, and creative

business solutions. To sustain a differing work environment, organizations could adopt characteristics that allow the advancement and success of women in leadership roles. Women must be able to lead as their authentic selves and utilize feminine and masculine qualities to succeed. O&G companies must try to combat society's macro, meso, and micro levels of gender biases that trouble women daily. By not conquering gender biases, the industry can lose talented members of its workforce and not gain the profits they have the potential to make.

This study seeks to reveal women's experiences about leading with authenticity in a work environment dominated by men, to create consciousness for men and women leaders concerning gender biases that women face, and the significance of everyone acting authentically in the workplace. By capturing these experiences, human resource policies can promote gender equality and gain women applicants. Specifically, companies can supply environments where women can work authentically without dreading others sabotaging their control. Companies must delegate women to bring their best and extend their full power to succeed.

Summary

Chapter 1 described why the O&G industry needs to work on gaining, retaining, and promoting women. By using human resource development as the theoretical framework, I investigated the gender inequalities women face regarding leading with authenticity in a men-dominated employment atmosphere. O&G organizations should strive to facilitate environments that foster employees to be their genuine selves at work. While the number of women partaking in the workplace has increased, they still need to be represented in specific fields involving the O&G industry. They continue to lose attraction to all employment applicants. As women experience coercion to fit into social standards and behaviors that are not harmonious with their internal morals, it threatens their ability to display authenticity. In this study I strived to acquire a

more profound knowledge of women executives' backgrounds regarding leading with authenticity in the O&G industry. The findings deliver insight for institutions and HR managers as they aim to assemble authentic work environments where women can excel, gain, and build their career.

Chapter 2: Literature Review

In this research examination I aimed to comprehend why women leaders are underrepresented in the O&G industry. I investigated whether women leaders feel free to express their authentic selves in a men's work environment and whether the climate prevents women from applying for employment. The goal of this literature review is to provide a synthesis of current research concerning STEM in public schools and colleges. I also discuss literature in relation to women in leadership, gender differences in leadership, gender equality in the workplace, and barriers to gender equality in the workplace. Discussions include a definition of authenticity and authentic leadership. I also share the background of the O&G industry, women in O&G, and women in O&G leadership.

The purpose of the research needs to be more comprehensive but concentrate on contemporary and critical conclusions from previous analyses connected to these issues. The literature review starts with an overall look at STEM and how instructors present the subjects to women in public schools and colleges, including current statistics regarding women in the workplace and a review of literature on gender differences and leadership. The study ends with how women function in O&G leadership roles.

Theoretical Framework

This study utilizes the human resource development (HRD) theory by Diehl and Dzubinski (2016) for its theoretical framework. The HRD theory emphasizes the importance of sexism concealed in the workplace and of tracing social and organizational procedures that create gender inequities in leadership. According to this theory, gender inequalities exist in three levels of society. Diehl and Dzubinski (2016) illustrate the disparities in a graphic organizer labeled Macro, Meso, and Micro levels of the organization.

Human Resource Development

Human resource development (HRD) contains several elements of an organization's encouraging and empowering human resources to help others succeed. Companies designate human resource (HR) departments to handle people in organizations by focusing on payroll, training, and other positions to satisfy employees. The current line of management's thinking stresses empowering employees to become qualified to fulfill their aspirations and realize their potential (Chan, 2022). HRD shows that women are impacted by gender inequality the most, and human resource (HR) departments are accountable for all employees' equality.

HRD is a contemporary area of inquiry that started to develop around 40 years ago. HRD significantly increased 10 years later, and HR took many actions to establish the definition, identity, and theoretical groundings (Shirmohammadi et al., 2021). Many organizations have an HR that supervises employees at their separate organizations. HR has been increasingly accountable for organizational implementation and how the organization functions financially (Birca, 2022). HRD considers employees' financial capital by assuring they are qualified to do well in the organization executing business and have a positive community-oriented character outside work. Professional knowledge and skills are of the utmost importance for organizations. However, an organization's philosophies have also become vital (Birca, 2022).

Gender mainstreaming is a way to achieve gender equality (Syed & Ali, 2019). HRD seeks to ensure that gender perspectives and attention to gender equality are central to all activities, i.e., policy development, research, advocacy, dialogue, legislation, resource allocation, planning, implementation, and monitoring (Syed & Ali, 2019). Some believe we are in the fourth industrial revolution, and companies are growing strongly in HRD. The human resource development process aims to upgrade workers by providing them with skills and knowledge

using the best practical and productive methods to face current and future challenges. According to Ardichvili and Harmon (2022), professionals need a better understanding of political and economic influences in an organization to promote human development and create good working conditions. People need to study the labor force and workforce development because most people in HRD believe that how a company performs is what the company should focus on. Ardichvili and Harmon (2022) state that the “performance paradigm is based on the assumption that self-regulating mechanisms of market competition and price setting govern the economic environment for workplace learning and development.” The role of power imbalances, systemic gender biases, lack of equal opportunities, and other socio-political realities are sometimes acknowledged, while their effect is rarely acknowledged (Ardichvili & Harmon, 2022).

Diehl and Dzubinski (2016) have carried it further by organizing how each gender inequality conforms to society. Readers can visualize which inequalities affect women the most: macro, meso, and micro. The macro level is a barrier operating in the community to prevent women from advancing or thriving in leadership. The meso level is where gender barriers function in the employee organization and where many of the gender barriers exist. The micro level is the barrier that affects the woman herself. Micro barriers are communication style constraints, conscious unconsciousness (where people have a bias, but do not realize they are displaying that bias), personalizing, psychological glass ceiling, and work-life conflict (Diehl & Dzubinski, 2016).

The study defines *authenticity* as bringing your whole self to work and embracing yourself (Kirkpatrick, 2021). My focus was to see if women leaders in O&G can lead with authenticity despite the gender inequality they could face in their lives at home or work. As

defined in Chapter 1, authentic leadership is leaders who display their true selves when leading a team. Their goal is also to involve other employees when making decisions.

Social Identity Theory

A theory that fits into the theoretical framework for this study is the social identity theory. Social identity theory was developed to explain how individuals create and define their place in society. According to the idea, three psychological processes are central: social categorization, social comparison, and social identification. Social identity theory assumes people base their identities on social groups and traits (Scheepers & Ellemers, 2019). Social identity theory differentiates power and context depending on what organization a person belongs to or social status (Scheepers & Ellemers, 2019). According to Hogg et al. (2012), the central tenet is that prototypical group leaders are better supported and more trusted. Group leaders are also perceived as more effective by members. It is particularly true when group membership is a central and salient aspect of members' identity, and members identify strongly with the group (Hogg et al., 2012).

Social identity theory helps explain why women in O&G might stay out of positions not deemed for women and may feel inferior simply because they are women (Guevara-Ramírez et al., 2022). My father was part of this socialization process when he would often say that the oilfield was “no place for a woman.” He thought that women should stay out of an area that is messy with rig mud, dealing with heavy equipment, and dealing with crude behavior is a practice of social identity theory. Women might think the same way when they feel they do not belong in a leadership position because most women have never been out in the field in the O&G industry. It is the responsibility of HR departments to change the mindset of what men and women believe they can do in O&G or any other business. The first thing to see why women have difficulty

getting into O&G, becoming a leader in O&G, or leading authentically starts with how women are exposed to STEM courses at school.

The Oil and Gas Industry

Texas produced almost two billion barrels of oil last year, demonstrating the crucial role that O&G have played in the industrialization of Texas, the United States, and the world since the last decade of the 19th century (Torraca & Fanzeres, 2021). In the first year of the 20th century, a drilling site known as Spindletop near present-day Beaumont, Texas, became the largest oil strike in the world. The event turned Texas from a rural to an urban state and helped the United States become a world power. The present-day O&G sector focuses on exploration, data acquisition, development, drilling, production, refining, distribution, and transporting hydrocarbons. The O&G industry includes but is not restricted to significant resource holders, like national oil companies, multinational oil companies, drilling contractors, services contractors, and other affiliated businesses. Men have been the dominant gender in the O&G industry due to the disposition of the sector (Shortland, 2018). Sometimes, the industry can be dangerous, and sometimes men want women to refrain from participating in the hazardous portions of the job (Torraca & Fanzeres, 2021).

For example, the industry's upstream sector is known for its capital-intensive projects with complex and hazardous recovery and production processes. The upstream sector can cause significant and financially damaging accidents to workers (Torraca & Fanzeres, 2021). Most men feel that women should not participate in this business portion because of these dangers. Many women became factory workers and enjoyed getting paid for work while their husbands were at war during WWII. When the men returned to the United States, they returned to work. Mostly men workers filled every occupation in the O&G industry. However, in the 1970s, O&G

companies had to follow federal civil rights laws and the Equal Employment Opportunity Commission and hire more women to work offshore. Women who ventured offshore mostly did it for the generous pay.

The first offshore jobs for women were in the galley or kitchen working under male supervisors. Women prepared food, washed dishes, and changed beds for offshore workers. When women wanted to make headway in their offshore careers, few went to the drilling aspect, but most of those who tried to move forward went into production positions (Overholt, 2022). The O&G industry is one of the largest and most complex global industries, accounting for a significant portion of the worldwide economy over the past 100 years. Multiple products of our day-to-day life are composed (directly or indirectly) of O&G-based derivatives. These commodities drive several significant industries, such as electricity production and transportation (Torraca & Fanzeres, 2021).

The structure of the O&G industry can be divided into three major sectors: (a) the upstream, a segment related to the proper exploration and production of O&G; (b) the midstream, a sector associated with transportation and, frequently, commodity trading; and (c) the downstream, which comprises all the refining processes (Torraca & Fanzeres, 2021). Since petroleum products are more prevalent in society than other natural resources, women should have leadership roles in these companies. First, we need to understand how women get involved in STEM courses and later careers like O&G. A negative experience in the STEM environment can affect how a woman would conduct themselves later in life by testing if they would lead with authenticity. Some women may fit in more with the male majority in the field.

STEM in Schools

STEM refers to science, technology, engineering, and math. After exposing students to junior high and high school STEM courses, the first portion researched is whether women gravitate to jobs in the O&G industry. The Women in Science and Technology Equal Opportunity Act states that men and women must have equal opportunities in education, training, and employment in STEM fields (Guevara-Ramírez et al., 2022). According to Wang and Degol (2016), even though STEM courses are available to everyone, women are less attracted to STEM courses than men because recruiters for the program focus on potential men participants. Some educators assume that women are not interested in STEM subjects, so they do not encourage them to join a STEM course. Some educators and parents also display unconscious behavior, thinking that STEM is more suited for male students (Guevara-Ramírez et al., 2022). Stereotyping children and nonexposure to STEM classes early can influence interest, achievement, and persistence and will not attract women to STEM careers (Guevara-Ramírez et al., 2022; Wang & Degol, 2016). Students cannot be sure they like a subject if they have never had access to it.

Over the past 30 years, educators have identified a necessity to increase STEM education in charter and public schools (David et al., 2020). Charter schools provide rare courses in the public education system (David et al., 2020). Preliminary studies identified that the administration could add STEM courses to the curriculum. David et al. (2020) shared how they utilized social network analysis and logistic regression to investigate charter and noncharter schools in Texas and how they promote STEM courses to men and women students interested in STEM classes. The authors examined the courses offered and student STEM course-taking patterns. The findings showed that noncharter schools offered more STEM courses than charter

schools in Texas. Also, students tend to be more mobile in changing schools when associated with a charter school campus (David et al., 2020). Students could shy away from STEM courses, predominantly women, when they are moving schools or do not go to a campus that is proactive in promoting STEM courses to women.

When women were exposed to STEM lessons and had positive experiences, they were more likely to graduate college with a STEM degree (Sloan, 2020). According to Sloan (2020), only 15% of women received engineering degrees after participating in particular high school programs for STEM students; however, women with a STEM degree are more than likely interested in working in education and medical occupations. They are the least likely to operate with engineering and computer science, the two main degrees concerning the O&G industry (Sloan, 2020). Women's skills, talents, and perspectives are an essential resource, currently underutilized, that could contribute to societal progress and innovation. Women can find innovative approaches to solving some of the most complex problems of our time. Examples are diseases, global warming, clean drinking water, renewable energy, and many more (Sloan, 2020).

Despite forming half of the U.S. workforce, women are underrepresented in science, technology, engineering, and math (STEM). Twenty-seven percent of STEM workers are women, even though women comprise 48% of all workers (Hamrick, 2018). Of all STEM degrees awarded 5 years ago, women earned about 50% of bachelor's, 44.7% of master's, and 41.2% of doctoral degrees (Hamrick, 2018). The share of women earning STEM degrees has been steady over the past 10 years; however, the proportion of degrees awarded to women in science and engineering varies across fields of study. Women's highest degree shares across all

three degree levels (bachelor's, master's, and doctorate) were in psychology and biological sciences (Hamrick, 2018).

Most O&G industry employees with college degrees have science or engineering degrees. Women already having a low percentage of degrees in these fields create a small collection of qualified candidates for careers in O&G and even fewer women leaders. Women leaders already have a challenge becoming a leader. Pushing women out of being involved in STEM degree plans cause many to give up trying to obtain a career in a STEM field. Some women take STEM courses, stay to get a STEM degree, and find jobs in the STEM field. The underrepresentation of women in the O&G industry could already begin its course with little participation from women in STEM subjects in school.

Why Are Women Missing in STEM Occupations?

Women obtain more than half of their undergraduate degrees in the United States in biology, chemistry, and mathematics; less than 20% are in computer science, engineering, and physics (Cheryan et al., 2017). According to Cheryan et al. (2017), women are missing in STEM because masculine cultures signal a lower sense of belonging, insufficient early experience with computer science, engineering, and physics, and gender gaps in self-efficacy. Chan (2022) also states that women need to be added to STEM fields because they have followed the traditional career paths of women. Most career paths for women include education and social services. Other reasons include that students have contextual influences or personal characteristics that cause them to not care for STEM subjects (Kurban & Cabrera, 2020). Students can also have social-cognitive variables, meaning they are good at math and science and find them as subjects they love. Other factors influencing career choice in STEM are socioeconomic status, math

ability, parental involvement, math self-efficacy, science self-efficacy, math interest, and science interest (Kurban & Cabrera, 2020).

Another reason women could be missing from STEM fields is because of missing datasets that have information about women in computer science, artificial intelligence, and data science (Vargas-Solar, 2022). In medical physics and biomedical engineering, companies must include women in large numbers. According to (Barabino et al., 2019), some solutions exist to increase women in STEM. These suggestions are welcomed.

1. Identifying and promoting women role models that achieve successful work-life balance.
2. Establishing programs to develop women leaders.
3. Creating opportunities for women to increase international visibility within the scientific community.
4. Establishing archives and databases of women in STEM.

Sometimes, mens faculty in colleges and universities can inhibit women from joining STEM classes leading to STEM careers. For example, men could ally with women students and promote them in STEM courses, but some mens faculty hinder women students from succeeding (Powless et al., 2022). Powless et al. (2022) identified 10 things with how women students and men's faculty interact and suggestions for making women students' experience in STEM classes more positive. These include instrumental and psychological support, advocacy for women, and equal treatment.

Women have always had difficulty getting into STEM activities because of a lack of promotion. For example, according to Jungert et al. (2019), "A popular explanation for women choosing to abandon studies in science, technology, engineering, and mathematics (STEM) has

been their lack of aptitude” (p. 479). Students that were allowed to get interested in STEM topics would be successful. Teachers indeed attracted women to STEM courses. According to Jungert et al. (2019), “Structural equation modeling revealed that the cognitive style known as systemizing indirectly predicted STEM achievement and persistence through intrinsic motivation, learning anxiety, and self-efficacy, providing a new perspective for re-examining the gender gap in STEM” (p. 479). In other words, if a woman were victorious in a STEM course, club, or other organization that dealt with the subjects, then more than likely, she would choose a STEM-based career. If there was no motivation for learning STEM subjects, or the woman was uncomfortable with learning the STEM curriculum, they would not pursue a career in those fields.

Some women can have support from their teachers and family; however, they have difficulty balancing societal and family roles. In most communities, caregiving, whether for children or older people, is a woman’s responsibility (Guevara-Ramírez et al., 2022). Caregiving limits analysis and research time, so Guevara-Ramírez et al. (2022) have created some suggestions, such as creating child and elder care facilities, work time analysis, strong colleague relationships, making priorities for tasks, planning time for work and family, building boundaries between work and family, and time management training.

Occupational Opportunities for Women in STEM

Today’s economy is primarily technological, and the demand for STEM jobs is rising. Many in society want to see women included in STEM career opportunities. Women in STEM could have higher-paying jobs and have a balance between work and family. The U.S. Bureau of Labor Statistics projects that employment in the STEM fields will grow by 8% by 2029, resulting in 800,000 new jobs that are up for grabs. Many can also fit women (Zilberman & Ice, 2021).

According to the U.S. Department of Labor, five STEM careers will increase from 2020 - 2030 and are deemed most promising for women. These occupations include information security analysts, software developers, quality assurance analysts and testers, operations research analysts, industrial engineers, health and safety, and medical scientists (Machovec, 2022). The O&G industry would fall under industrial engineering for some aspects of the business.

The United States Department of Labor encourages women to get into STEM careers. O&G companies, which fall into the STEM occupations sector, are also trying to get women into their industry. O&G qualifies as a STEM occupation because of several factors. However, we need to determine the O&G companies' recruitment practices to encourage women to apply for positions. O&G is considered a STEM career because of how the occupation utilizes STEM knowledge in aspects of the industry.

Most of the STEM occupations in O&G are at the rigs themselves or offshore drilling rigs. These occupations include chemical engineer, drilling operator, landman, roughneck, and geologist (Buchanan, 2021). The roughneck position is the only job out of the five considered very labor intensive. A roughneck's responsibility is to connect the pipes to drill into the oil deposits. It is also the starting position for many O&G workers (Buchanan, 2021). I have never heard of a woman being a roughneck because the physical labor is very intensive for even most men.

Gender Differences in Leadership

More women have joined the workforce than ever (Ariella, 2022). Some enter for something to do with their time; others join to have a supplemental income for their family. More importantly, the United States now more than ever has single-mother households that depend on women working to make ends meet (Ariella, 2022). Out of all women in the

workforce, more women are seeking leadership roles; however, few are getting those positions (Ariella, 2022). Women represent 54.3% of the workforce in the United States, but only 35% hold senior management positions (Ariella, 2022).

Even though women have demonstrated that they can be influential leaders in their organizations and get top results, they always need help acquiring leadership roles regardless of their organization (Diehl & Dzubinski, 2016). Some industries are more complex than others in obtaining those leadership roles. Researchers and organizations have sought to discover why this is the case (Diehl & Dzubinski, 2016). Research has shown that it could be underrepresentation in their organization, pay gaps, and balancing work and life responsibilities (Diehl & Dzubinski, 2016).

Harmful gender stereotypes, harassment, and being viewed as poor advocates are also problems (Diehl & Dzubinski, 2016). Barriers, such as control of women's voices, cultural constraints on women's choices, gender stereotypes, gender unconsciousness, leadership perceptions, and scrutiny make it challenging for women leaders to contribute their leadership expertise (Diehl & Dzubinski, 2016). Both women and men should take women leaders seriously. Others have also discounted women's leadership contributions and limited their organizational effectiveness, such as devaluing collaborative practice, discrimination, exclusion from informal networks, glass cliff, lack of mentoring, lack of sponsorship, lack of support, male gatekeeping, male organizational culture, organizational ambivalence, queen bee effect, salary inequality, tokenism, two-person career structure, unequal standards, and workplace harassment. These are the most common types of barriers that most women experience (Diehl & Dzubinski, 2016).

Last, according to Diehl and Dzubinski (2016), the obstacles involving women sometimes create an extra burden of responsibility, which is otherwise required of male leaders. Examples are communication style constraints, conscious unconsciousness, personalizing, psychological glass ceiling, and work-life conflict (Diehl & Dzubinski, 2016). Women have had to deal with societal and macro-level gender biases, such as underrepresentation in their organization, pay gaps, and balancing work and life responsibilities.

Over the years, researchers have discovered differences between men and women regarding their leadership roles. Men and women have various life experiences and other gender socialization. Leaders should pay attention to these aspects regarding leadership development (Kiser, 2015). Another difference is that men have better luck finding jobs in STEM organizations than women. According to Kiser (2015), men were more reasonable in acknowledging they had more job requests when positions were scarce.

Zhang et al. (2022) studied strategic leadership in relation to ambidextrous organizational behavior between men and women CEOs. Ambidextrous behavior refers to leaders' simultaneous use of explorative and exploitative activities. Zhang et al. (2022) also explained how exploration relates to research, risk-taking, experimentation, and innovation in organizations, whereas exploitation involves refinement, efficiency, implementation, and execution. The authors' findings revealed that women strategic leaders with an ambidextrous advantage do not behave inferior to men (Papachroni & Heracleous, 2020).

Going back further and researching engineering professors at colleges, Judson et al. (2019) found that men faculty spend more time researching than women faculty; however, women faculty spend more time teaching and mentoring students. If women students are not getting the support that they need in an engineering program from male

professors, then they might not feel supported being in the program. I could find no documentation regarding the engineering department if female students move on to a different program where they get support. Data shows that engineering is among the lowest percentages of women graduates in STEM fields, leading to lower numbers of job candidates in O&G.

Women have made gains in climbing the corporate ladder; however, there are still obstacles due to gender inequality that prevent them from reaching the top (Ali et al., 2021). Scholars researching organizations with men and women participation have tremendous success in gaining profits and achieving goals (Ali et al., 2021). However, women still face challenges in reaching leadership roles because of their gender. The authors suggest that women leaders have better luck being successful if the majority of those they lead are women. Findings indicate that increasing the number of women supervisors and middle managers will effectively bring more women employees into male-dominated organizations (Ali et al., 2021). However, male-dominated industries show that women refrain from supporting other women's careers (Ali et al., 2021).

Another reason for gender biases is that they appear in organizations and society because they are brought out and mentioned in organizational staff meetings (Klysing, 2020). Preferences can also arise because of family expectations and other cultural norms in a particular community. Klysing's (2020) study found that "discrimination attribution was indirectly affected by exposure to social constructionist explanations of gender differences through the increasing endorsement of a non-essentialist gender lay theory, which predicted a higher degree of discrimination attribution" (p. 253). In other words, exposure to social constructionist explanations of gender differences predicted a more remarkable display of employee discrimination. Natural causes and not mentioning gender biases created no attitudes toward gender that were discriminatory or

negative (Klysing, 2020). According to these theories, gender biases towards women will always occur if society continues to address the issue of women leaders not being utilized in STEM occupations.

Many women might not get leadership positions because of a lack of mentors, leadership career aspirations, and gender inequality (Carbajal, 2018). Companies also value leadership styles based on masculine characteristics. Women may utilize a masculine leadership style even though it does not fit their authentic personality (Carbajal, 2018). Women tend to have other goals approximated to men regarding leadership. According to Dodson et al. (2020) and Carbajal (2018), women have a lower sense of power and express a lower desire to lead. Women also have lower intentions to apply for a majority-male leadership committee. Still, increasing women's sense of power improves their appetite and choice to usher in a majority-male committee (Dodson et al., 2020). The decline of women in leadership roles could be because they do not want those positions. Questions still exist explaining if women want to avoid being intimidated by men or if they have more goals based on their home life.

With many women reluctant to take a leadership role and having differences from men, society needs to recognize the women who have leadership roles. People consider women nurturing, caring, equal opportunists, and diverse, while people view men as complex, rigid, and to the point (Liu, 2018). Women have also been regarded as leaders in more domestic roles, such as emotional labor service occupations like childcare work; however, these are no longer their only leadership positions. Women are accepting more leadership positions in areas like STEM industries and will do what it brings to maintain the leadership role. Unfortunately, women must deal with gender biases on the road to leadership and when they are the leader. Since the O&G industry is known for having a gender-bias issue, women may not be as willing to start a career

in this field. Women overall are having problems with gender biases in other organizations. Women would not want to enter an industry known for being gender biased.

Underrepresentation of Women in the Oil and Gas Industry

Exploring women's underrepresentation in O&G companies and focusing on multiple barrier levels necessitates more awareness from these women to operate at their maximum potential. If establishments do not entice qualified women candidates to the industry, they will not thrive. More balanced teams make better decisions (Shortland, 2018). Researchers have investigated women leaders who face several challenges in the O&G industry (Perks & Schulz, 2020; Williams, 2019). These challenges include recruitment, retention, persistence to remain in business, a sense of belonging, and gender biases toward women (Hoffman & Friedman, 2018; Murphy et al., 2021; Shortland, 2018; Srinivas et al., 2020).

Since the mid-20th century, women have become interested in the O&G industry. Women employees averaging over a decade in the O&G sector comprise 22% of O&G workers worldwide (Hoffman & Friedman, 2018). Gender diversity among O&G workers is more prevalent with improved policies towards women in relation to seniority, recruitment, retention, and maintaining a career in the industry (Hoffman & Friedman, 2018; Murphy et al., 2021; Shortland, 2018; Srinivas et al., 2020).

In the O&G industry, the younger the workers are, the more opportunities for men to make up the workforce. Women make up 25% of O&G employees worldwide; they represent 27% of entry-level leadership positions, 17% of senior and executive-level positions, and 1% of CEOs (Williams, 2019). According to last year's United States Labor and Bureau Statistics, representing both genders, the racial breakdown in the U.S. O&G industry is 66% White, 14.5% Hispanic, 7.4% Asian, and 5.7% African American (Martinez & Cristnacht, 2021).

Barriers to Gender Equality

According to Diehl et al. (2020), “No instrument exists to measure women leaders’ perceptions of gender bias” (p. 249). Women’s leadership has been able to develop in the last 50 years. Some believe that men’s social roles align with leadership, while women’s roles do not. Research focusing on the previous 20 years has shown that barriers and discrimination lead to organizational performance loss, negative impacts on women’s health, and job turnover (Diehl et al., 2020). Studies have shown that men dislike women when others show women as successful leaders and some men see women as less effective in leadership roles (Diehl et al., 2020). Organizations have also shown favoritism towards male employees for evaluations and rewarding them for their work, while women have fewer opportunities and lower performance ratings. Gender biases may influence women’s standards in performance and evaluations (Diehl et al., 2020). The worst kind of gender bias, according to Diehl et al. (2020), is known as the *queen bee syndrome*—women in leadership positions often distance themselves from lower-level women. They may also hesitate to participate in programs that help lower-level women in their organizations. Some women believe they receive more mistreatment from women leaders than male leaders, so many lower-level women do not like women leaders (Diehl et al., 2020).

Women also face barriers related to work-family conflict. According to Diehl et al. (2020), women are seen more as the ones to take care of family situations than men. It is likely because of the increase of mothers in the workforce. Women entering the workforce means that their responsibilities at home have continued. Men still expect women in many cultures to complete household tasks and care for children (Diehl et al., 2020). The authors state that there are three kinds of conflicts that women face. These are time-based, strain-based, and behavior-based conflicts. Time-based competition deals with excessive work, scheduling conflicts, marital

status, family size, and children at home. Work demands can interfere with family demands in these categories (Diehl et al., 2020). Strain-based conflicts deal with family stress, negative emotions, emotional meltdowns, and parental and marital disputes. Finally, behavior-based conflicts deal with women who cannot balance work and family life (Diehl et al., 2020). Men tend not to have to deal with these conflicts. However, I remember many times my father would have to schedule days off or use vacation time to attend events I was involved in, such as high school and college graduation.

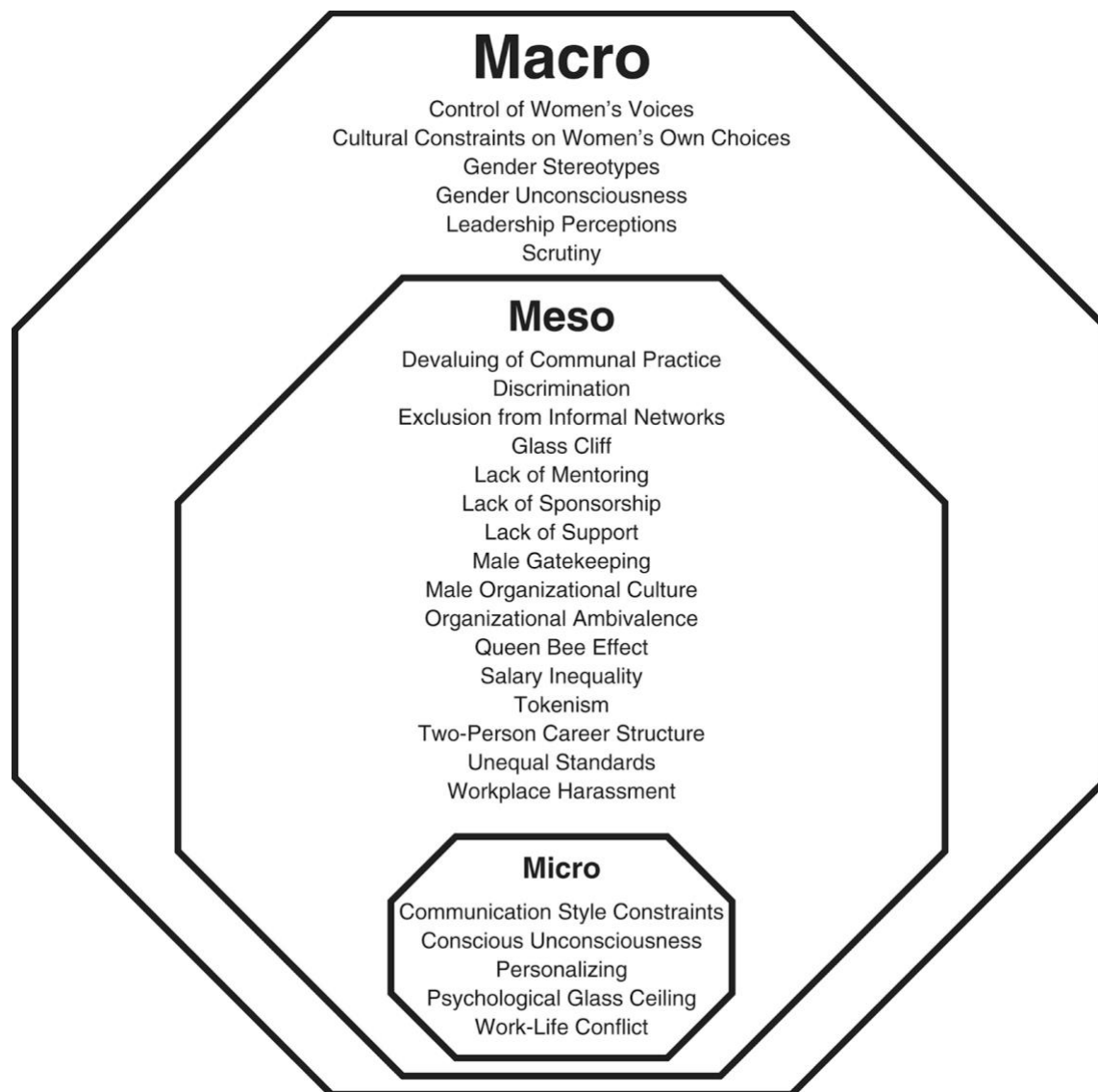
Unfortunately, in modern times, women still encounter obstacles to gender equality in the workplace and everyday society. Some of these barriers vary from being known community-wide to other women in the community. Obstacles to gender equality explain why women and men are overrepresented in leadership positions and STEM occupations (Cundiff & Vescio, 2016). Cundiff and Vescio (2016) provided four types of gender stereotypes women are said to display in the workplace. Positive feminine women are nurturing, empathic, compassionate, and sensitive. Second is negative feminine women—dependent, weak, emotional, and insecure. Third is positive masculine women—self-reliant, assertive, strategic, and confident. Last, stereotyped negative masculine women are arrogant, forceful, disrespectful, and self-centered. Women are placed in these stereotypes, not men, creating barriers due to gender. Also, viewing women as having to keep their emotions in check is a gender barrier (Zheng et al., 2021). To keep emotions in check, some women use transformational and authentic leadership.

Many researchers categorize leadership into four main tasks: providing direction to the team, aligning team assurance, building commitment among the team members, and facing adaptive challenges with the team. Leaders must transform their identity to survive in the field (Jauhar et al., 2017). Women face gender biases daily in society, at the workplace, or at the

individual level. Diehl and Dzubinski (2016) created a graphic organizer titled “Gender-Based Leadership Barriers by Level of Society.” The authors separated gender biases into three groups: macro, meso, and micro (Figure 1).

Figure 1

Gender-Based Leadership Barriers by Level of Society



Note. From “Making the Invisible Visible: A Cross-Sector Analysis of Gender-Based Leadership Barriers,” A. B. Diehl and L. M. Dzubinski, 2016, *Human Resource Development Quarterly*, 27(2), pp. 181–206, (<https://doi.org/10.1002/hrdq.21248>). Copyright 1989 by John Wiley & Sons

Macro Level

Macro levels operate in the community and can prevent women from advancing or succeeding in leadership. Barriers, such as control of women's voices, cultural constraints on women's choices, gender stereotypes, gender unconsciousness, leadership perceptions, and scrutiny, make it challenging for women leaders to contribute their leadership expertise. Women and men must take women leaders seriously (Diehl & Dzubinski, 2016). Management of women's voices in the workplace and society plays a pivotal role in leadership. Some cultures prohibit women from communicating in conversations. Men anticipate women to conform to gender stereotypes, like being nurturing, caring, and passive at the macro level. Women are also likely to be the ones to remain home and raise children, not leaders in organizations (Diehl & Dzubinski, 2016).

Meso Level

The meso level designates discounting women's leadership contributions and restricting their organizational effectiveness. Meso barriers, such as devaluing collaborative practice, discrimination, exclusion from informal networks, glass cliff, lack of mentoring, lack of sponsorship, lack of support, male gatekeeping, male organizational culture, organizational ambivalence, queen bee effect, salary inequality, tokenism, two-person career structure, unequal standards, and workplace harassment, are the most common types of barriers that most women experience (Diehl & Dzubinski, 2016). Meso-level barriers see women lacking acknowledgment, support, and respect for communal activities in organizations and discrimination that is visible or subtly based on gender. Women have also been excluded from social events and placed into positions meant to be a considerable risk or a failure. Women at the meso level also encounter a significant lack of support from male colleagues and could have judgments overturned.

Micro Level

Gender biases are barriers that affect women, creating an extra hindrance of responsibility needed by male leaders. Examples are communication style constraints, conscious unconsciousness, personalizing, psychological glass ceiling, and work-life conflict (Diehl & Dzubinski, 2016). Women at the micro level discover themselves dealing with men who restrict women's access to leadership positions. Women also must deal with male cultural standards. Some have even suggested that you only need to be here if you can put up with it (Diehl & Dzubinski, 2016). Women also need to witness support for their leadership role. The lack of support is not exclusively from men but also from women. Last, a micro-level issue is that companies underpay women who have identical leadership positions as men (Diehl & Dzubinski, 2016).

After seeing gender inequalities in the workplace towards women, one must concentrate on gender equality and how to complete it through HRD, diversity training (DT), and coaching. Without DT and coaching, women cannot feel comfortable enough in the organization to stay, and others do not feel comfortable enough to accept a position. These issues also apply to O&G companies.

Diehl and Dzubinski (2016) studied the macro, meso, and micro social barriers from other authors such as Kyriakidou and Özbilgin (2006) and Syed and Özbilgin (2009). These researchers consider the interrelated, multilevel factors as macro-national, meso-organizational, and micro-individual levels when developing a context-specific approach to gender equality. They define the macro, meso, and micro levels of gender biases as the following: macro-national class, the relational framework considers national structures and institutions, e.g., laws, sociocultural structures, and norms, and their impact on gender relations. At the meso-

organizational level, they consider organizational interventions and the environment for gender equality or lack thereof. At the micro-individual level, they see issues related to identity, intersectionality, and agency (Syed & Ali, 2019).

Gender Equality in the Workplace

Research on gender equality is sparse and fragmented, especially concerning workplace design and management implications. All organizations desire gender equality in their workforce and work towards having a diverse group through HRD, coaching, and DT. By having antidiscrimination legislation and the presence of equal rights in our society, many people would assume that gender stereotypes, bigotry, and discrimination would end. Unfortunately, this is not true (van Nunspeet et al., 2015).

According to van Nunspeet et al. (2015), employees can manage their biases at work because of consequences that HR departments can put into place if employees do not observe the rules that defend against racial, ethnic, and gender discrimination. Studies have indicated that members of certain racial, ethnic, or gender groups behave according to the personal, ethical values they disseminate to their group members (van Nunspeet et al., 2015). The HR department must supply DT and set protocols to guarantee that the employees' thoughts are the views the organization wants.

Diversity Training and Coaching

Diversity training (DT) is any discrete program or program that aims to influence participants to increase their positive or decrease their negative intergroup behaviors. For example, someone that is less prejudiced or displays discrimination towards others is perceived as different in their group affiliation(s) (Ehrke et al., 2020). Many organizations have begun implementing DT or coaching to encourage equality. In these training pieces, diversity

emphasizes the moral implications of one's behavior. DT will decrease implicit prejudice and furnish strategies that can be helpful in everyday life (Ehrke et al., 2020). The authors acknowledge that this aspect needs further research. However, it is worth following to see if more diversity is constructed in our society and could end gender biases. Studies have also revealed that a gender-diverse environment that functions more toward creating a more ethical organization improves the organization's earnings and success (Ehrke et al., 2020). With the new view of having DT in organizations, can women leaders now have the authority to guide with authenticity?

DT is the most popular and effective tool to strengthen inclusion in the workplace, as evident from the growing research and investment interest. However, there are several limitations, including the need for more discussion on how and why DT can significantly impact consumer experiences (Thakur & Dhar, 2022). There is an overall positive impact on the training on employee-related factors and underscores gaps in methodology, theory engagement, and contextualization. Organizations should have more HRD, even though federal and state laws to ensure everyone is treated fairly have existed for many years.

Title VII of the Civil Rights Act of 1964 protects employees from discrimination based on race, color, religion, sex, or national origin. Title VII aims to protect members of minority groups and both sides of the minority/majority divide. For example, White or male employees enjoy the same protections as Black or female employees. DT is also scarce in some parts of the workforce. For instance, O&G companies are beginning to implement DT. Real-world examples of DT need to be more comprehensive (Ehrke et al., 2020). That could be why employees in specific industries such as O&G find implementing topics learned in DT challenging.

Many companies in O&G proclaim that they are dedicated to having a diverse workforce and want to attract women to the industry. A range of corporate programs fall under the rubric of diversity management. These include targeted recruitment, mentoring programs, affinity groups, DT programs, implementation of formal evaluation systems to reduce bias in performance reviews, dedication of a particular office or committee to identify and remove barriers to diversity, and the setting of numerical goals for increasing the number of underrepresented groups (Williams et al., 2014).

Many diversity programs need to improve in the training of employees. The only successful programs are those in which an individual or committee head and others in the committee face consequences from their supervisors if the program is not followed (Williams et al., 2014). Some also claim that diversity statements and programs are put into place in name only to make the public believe that the company is expressing forward thinking (Williams et al., 2014).

Authenticity and Authentic Leadership

What does it mean to lead with authenticity? Leading with authenticity is when a leader brings their complete and truthful self to work (Kirkpatrick, 2021), or when directors are self-aware and genuine. A leader who directs authentically acknowledges and welcomes all no matter their race, ethnicity, and gender. Kirkpatrick (2021) states that authentic leadership has three aspects: vulnerability, sharing information, and recognizing talent. Authenticity is the subjective alignment experience between one's internal affairs (i.e., thoughts, feelings, values, and behavioral preferences) and external expressions such as verbal and nonverbal behavior, attire, and office décor.

A fundamental assumption in this definition is that individuals can determine the agreement between their experiences and words. Authenticity is a leadership characteristic that started accumulating attention around 60 years ago but came into the limelight recently when Bill George published his book *Authentic Leadership*. The construct of authentic leadership has materialized in recent years from within the fields of social psychology, positive organizational behavior, and leadership studies. Authentic leaders are self-actualized individuals conscious of their strengths, limitations, and emotions. They also display their authentic selves to their supporters. They do not operate one way in private and another in public; they do not obscure their mistakes or weaknesses out of concern for looking vulnerable. They also realize that self-actualization is a continuous journey that is never complete (Kirkpatrick, 2021). Authentic leaders are mission-driven and concentrated on results. They can arrange the organization's assignments and objectives in front of their self-interest. Authentic leaders search for results, not to satisfy egos, gain power, or earn more money (Kirkpatrick, 2021).

Authentic leaders direct followers with their hearts, not just their mentalities. Authentic leaders are also not afraid to reveal their emotions and vulnerability and bond with their employees. In authentic leadership, being emotional does not mean authentic leaders are "soft" in their feelings when leading others. Authentic leadership is accomplished with empathy, while directness without compassion is malicious (Kirkpatrick, 2021). Authentic leaders concentrate on the long term. A fundamental principle in Bill George's example is that the company leaders concentrate on long-term shareholders, not on conquering quarterly estimates.

Authentic leadership benefits women leaders by letting women exhibit solid values and intense awareness of their leadership. Therefore, women leaders can develop trustworthiness in their relationships with coworkers (Kim et al., 2021). Having authentic leadership also increases

positive employee performance. Employees also like viewing sincerity, transparency, and morality from their leaders. These same traits are also expected from male leaders; however, women must put extra effort for employees to follow what they desire for the company they lead (Kim et al., 2021). Women in O&G leadership will need authentic leadership traits for employees to follow what they want for the company. The question is, can women be their authentic selves to lead?

Women in Oil and Gas Leadership

Women take most O&G jobs outside the upstream or downstream sectors, because they would physically need help to complete the work in these sectors. Because of this, women remain underrepresented in the O&G workforce. As such, they are subject to gender-based discrimination and harassment perpetuated by a hyper-masculine work culture. However, most women need more information about men's experiences working on the front lines (Murphy et al., 2021). Diversity and inclusion have been on the agenda for O&G companies for years. Nevertheless, a dependable track still needs to motivate women to begin a career in the industry (Murphy et al., 2021).

Many O&G companies would want women to become more engaged in all aspects of the industry; however, women face gender biases such as a lack of recruitment, retention, maintaining a career in O&G, feeling a sense of belonging (Hoffman & Friedman, 2018; Murphy et al., 2021; Shortland, 2018; Srinivas et al., 2020). Still, the lack of women in technical and field positions is partly to blame for the lack of women's representation at the top levels of O&G, as these positions are frequently the pathways to advancement.

Women are more likely to hold positions in different O&G sectors, such as HR, information technology, and legal jobs. Significantly, few women are involved in manufacturing,

engineering, and research. Compared to 18 other industries, O&G had the lowest level of women's participation in entry-level positions. They ranked second to last in women's involvement in executive-level management positions (Murphy et al., 2021). Research on women in O&G has only gone back at least 40 years, focusing on the offshore aspect (Murphy et al., 2021). Women's participation in the O&G industry has been seen as an opportunity for economic empowerment due to high wages and positive social and financial results for their families and communities (Park et al., 2019). Increasing women's economic opportunities can usher in more monetary savings, healthier members of the family, and better education for children (Perks & Schulz, 2020).

Globally, female workers in O&G have risen in numbers significantly. The complex operations of the O&G industry and the extensive uncovering of hazardous worksites could affect the sexual, reproductive, and other health outcomes of female workers. However, the current known issues in O&G environments must be improved and more cohesive (Razafimahefa et al., 2022). Most women work in the O&G industry because of the employment opportunities with possible career advancement. Career advancement can lead to higher incomes and health insurance for families. Acknowledging women's contributions in the O&G sector has contributed to companies' sustainable development and economic growth. Researchers recommend female workers' leadership skills and higher organizational performance in O&G industries. An increase in workers' productivity and family-friendly programs have reduced people leaving O&G and risks in the workplace (Razafimahefa et al., 2022).

Challenges Experienced by Women in the Oil and Gas Industry

Women leaders encounter challenges in the O&G industry, including barriers that could stop them from reaching leadership status (Perks & Schulz, 2020). Consequently, women adjust

their personalities, accept being underrepresented in their organization, have unequal compensation, deal with discriminatory stereotypes, and lack resources. Women in leadership positions periodically modify their self-identity to preserve their leadership positions (Lammers & Gast, 2017). Studies show an undermining of backing for affirmative action to reduce women's underrepresentation in administration. Therefore, women continue to function, acting like they do not need affirmative action. Women transform their talents to look more like skills men utilize, such as not being as nurturing, not being sympathetic towards others, and more straightforward with directions (Lammers & Gast, 2017; Perks & Schulz, 2020). Women leaders in the O&G industry also encounter nonorganizational barriers such as work-life conflicts, harassment, and being regarded as poor advocates for their necessities (Coleman, 2019; Hoffman & Friedman, 2018; Murphy et al., 2021; Shortland, 2018; Srinivas et al., 2020). Studies of women's leadership barriers have been exhaustive; however, limited literature has examined the relationship between organizational and nonorganizational obstacles to women pursuing leadership roles (Diehl & Dzubinski, 2016).

Murphy et al. (2021) argued that a significant barrier for women seeking employment exists because of their gender. There are issues of gender-biased disrespect towards women in male-dominated workplaces. For example, women will look at the floor when walking or talking, ignore the stereotypes, and tough it out. Some women try to fight back or prove to their male coworkers that they can last in O&G despite having people think they will fail (Murphy et al., 2021). The experiences of these women are a foundation of self-assurance and a solid drive to succeed. However, the strength displayed by these women to advance in their careers is not focused on gender equality. Women want to be treated equally based on their job skills. They want to work in O&G whether they act authentically or not. According to Murphy et al. (2021),

evident workplace culture leaves out women, which manifests in hiring practices by the company and on the job. Several women express having supportive male coworkers; however, they have encountered gender-based harassment and are aware of its widespread use in the O&G industry. There needs to be evidence of practices making the workplace more nondiscriminatory in the O&G industry.

Women have exhibited a pattern of conversion to male behavior in O&G rather than authenticity (Murphy et al., 2021). Women maintain that they must have a certain toughness, with a desire not to be bold. To fit in more with men, many women *de-feminize* in the O&G environment. When seeing work attire, especially in the field, it is evident that many women do not show their femininity. Hence, no one recognizes the woman as a female. Women also gain masculine industry values, e.g., having tough skin, self-assuredness, and not being nurturing (Murphy et al., 2021). Women removing traces of their femininity to fulfill workplace values match what Murphy et al. (2021) describe as the *bon ton*, a French term to denote what is *in tune* in organizational culture. A *bon ton* stipulates that how one portrays oneself is organizationally bound up by what fits men and women attributes (Murphy et al., 2021).

Summary

This review has synthesized research literature about junior high, high school, and college STEM courses. It has also provided an examination of women in leadership, gender differences, barriers to gender equality through the macro, meso, and micro levels of society, gender equality in the workplace, authenticity, authentic leadership, the O&G industry, and women in the O&G sector.

Authenticity, the concept of living true to oneself, has been characterized for decades in leadership research and has emerged as a leadership quality that supervisors should retain.

Women leaders in O&G need authentic leadership support, so it could be possible that women want to pursue careers outside of that field. The research literature demonstrates that different gender biases create difficulty for women in O&G to thrive in their careers. Also, leadership characteristics and self-development are unfavorable aspects of genuine leadership. Authentic leadership constantly requires supervisors to create self-awareness through self-reflection, personal growth, and learning.

Authentic leadership is more significant and means being faithful to oneself, as the leader-follower relationship is vital in practicing authentic leadership. However, the studies did show that women are at constant odds with being themselves because of gender biases in the O&G industry. It has been revealed that authentic leadership leads to followers' engagement and confidence. Authentic leadership creates more outstanding work outcomes. Authentic leadership evolution is progressively vital to companies as they increase worker productivity and improve performance at the workplace.

Authenticity in O&G is a prominent domain of studies for scholars and leading practitioners. At the same time, studies have historically concentrated on the psychological and operating costs of not being authentic in organizations. Positive organizational scholars are starting to focus on the constructive strengths of authentic leadership in companies. They seek to better comprehend the original leader and follower evolutionary process. Some research reviewed women's encounters with workplace authenticity, but only a few examples exist of women leaders in O&G.

Often, women follow male traits to advance up the corporate ladder. To thrive, women require an environment that includes their authentic home and work life. Male-driven industries, such as O&G, present more significant obstacles for women when they contest gender

stereotypes and well-known social norms. As women undergo influences to meet standards and practices that do not coincide with core values, unauthentic behaviors threaten happiness at work and job performance. Organizations that want to gain and keep more women leaders should implement practices and policies to promote workspaces for authentic leadership development.

In conclusion, I constructed this research investigation from existing literature regarding gender biases, DT, coaching, and authenticity in the workplace. In this study I aimed to understand how women leaders in O&G can behave authentically, what gender biases affect them at work, and why women are reluctant to join the O&G industry. The aftermath of this study could display new insights into the field of gender studies, authentic leadership studies, and influence members of the O&G sector. Leaders of O&G organizations may also want to review this study to understand what women are facing in leadership roles. These companies may also want to know how they can attract more women to the field.

Chapter 3: Research Design and Methodology

Women executives confront macro-level challenges such as recruitment, retention, keeping a career in O&G, feeling a sense of belonging, and coping with gender preconceptions. Women have encountered organizational obstacles and challenges such as adjusting their qualities, being underrepresented in their community, unequal salaries, discriminatory stereotypes, and lack of resources. However, women in the O&G industry also encounter nonorganizational obstacles such as work-life competition, harassment, and being considered poor promoters for their needs (Coleman, 2019; Hoffman & Friedman, 2018; Murphy et al., 2021; Shortland, 2018; Srinivas et al., 2020). Women executives have also confronted barriers stopping them from achieving leadership status and advancing in their profession (Hoffman & Friedman, 2018; Murphy et al., 2021; Shortland, 2018; Srinivas et al., 2020).

Women leaders have also encountered challenges such as gender stereotypes, cultural restrictions, leadership perceptions, discrimination, and lack of mentoring, sponsorship, and support. Male corporate culture, salary inequality, unequal standards, and workplace harassment have also been problems. Challenges are correspondingly at the micro or personal level because of work-life disputes and the psychological glass ceiling. Studies on women's leadership conditions are exhaustive; however, little research has analyzed the relationship between organizational and societal cultural hindrances to women seeking leadership functions in the O&G industry (Diehl & Dzubinski, 2016).

Many organizations in the United States and worldwide need a higher representation of women in leadership placements. Women executives in STEM fields, specifically in O&G, have haggled with underrepresentation in leadership positions, pay gaps, and counterbalancing work and life responsibilities. They carried issues concerning gender, which I noted in Chapter 2.

These struggles include society's macro, meso, and micro ranks of gender bias. The investigation also widely discusses damaging gender stereotypes of women, bullying, sexual harassment, and being regarded as poor advocates for themselves. Because women directors are dealing with these imbalances, they could have difficulty authentically directing an organization. Additional studies could aid in creating more awareness about why women are not drawn to STEM occupations, particularly O&G. A direction could also be established on gender inequality and helping organizations to either start receiving DT support or revisit training already in place.

Research Questions

This study was devised to fill the void in the professional literature by investigating three research questions:

RQ1: What are the lived understandings of women leaders in the O&G sector regarding gender inequalities?

RQ2: What are the lived understandings of women leaders in the O&G sector regarding individual authenticity?

RQ3: What are the solutions to advance women leaders in the O&G industry?

This chapter provides particulars regarding the methodologies that piloted this descriptive study. Descriptive research is a trustworthy technique for qualitative inquiry used by many scholars to examine the lives of those they are investigating. I used a descriptive research design to collect and analyze the data. In this chapter, I explain the study population, sample identification, and recruitment. I again present methods to demonstrate the reliability of the data and clarify my role in the assembly and analysis of the data. The investigation adheres to appropriate ethical standards (Carbajal, 2018; Leavy, 2022; Patton, 2002). Finally, the probable

consequences of assumptions, limitations, and delimitations on the collection and commentary of data are demonstrated (Terrell, 2022).

Purpose of the Study

This study assesses the gender inequality women leaders encounter in O&G organizations and whether they can lead authentically. The analysis is also conceived to help demonstrate if organizations can utilize DT and decide if including women leaders can boost returns and augmentation in their respective organizations. It is mainly designed to determine gender barriers at society's macro, meso, and micro levels and how organizations cannot be more equal unless employees are enlightened on managing diversity in the workplace. The study also demonstrated that not letting gender biases limit women leaders could benefit companies. Having more women leaders interested in O&G is influential because research has confirmed that the more diverse an organization is, the more efficient the organization functions when completing tasks, thus leading to increased profit margins. This study investigated how women leaders in the O&G industry have been operating in their organizations while dealing with gender biases. Another emphasis was to see if there has been authentic leadership taking place. Interviews and a questionnaire sent to 12 women leaders in O&G companies were the focus for accumulating data. Scholarly literature has indicated that women in leadership struggle with leading with authenticity because of gender predispositions in their work environment and society.

Research Methodology and Design

Gender inequalities restricting employees from achieving their full potential, particularly women executives in STEM-based careers, has been a significant problem. Women supervisors in STEM fields have dealt with underrepresentation in leadership roles, pay gaps, and offsetting

work and life obligations. I investigated harmful gender stereotypes, bullying, sexual harassment, and being regarded as inferior advocates for themselves. Most women cannot guide an organization with authenticity due to these elements. Further analysis of this problem would help create more cognition of gender inequality and help communities acquire DT support or refine training already in place.

Several well-known researchers are known for descriptive qualitative research. Their techniques are the soundest ways to accomplish this type of research. The first scholar is Margarete Sandelowski, and her method of choice is mixed research synthesis studies. Mixed research synthesis requires resolving the problems generated by the methodological diversity within and between qualitative and quantitative studies. Three primary research designs accommodate this diversity, including the segregated, integrated, and contingent designs (Kyriakidou & Özbilgin, 2006). According to Kyriakidou and Özbilgin (2006), researchers using descriptive qualitative design remain close to their data, to how participants say their answers in interviews, and events in the participant's life (Kyriakidou, & Özbilgin, 2006). The authors also stated that descriptive qualitative research design is the most suitable design when describing a phenomenon.

Merriam and Weaver (1937) are two of the first researchers to facilitate a method for completing research. In their paper, Merriam and Weaver (1937) conferred that research proceeds in two directions. One way is by financial aid, while the other is conducting activities that guide creative work, whether for an institution or an organization. Merriam and Weaver (1937) also stated that research could have different approaches to the problem, leading to additional investigations, interpretations, and objectives. After all, "research is not solely digging for facts; it is frequently in large measure the imaginative treatment of ideas and materials to

discover relationships which we have not been able to understand” (Merriam & Weaver, 1937, p. 608).

The type of research strategy used in this dissertation is a descriptive, qualitative, action research design. According to Herr and Anderson (2014), descriptive research is valuable for researchers and participants because they get to participate in interviews and communicate about the topics. A descriptive study differs from traditional dissertations and equips students and their committees for reality, positionality, innovation, write-up, values, and dissertation defense. They focus on questioning the people involved in the analysis to get a more in-depth glance at the issues. I reached out to as many women executives as possible from O & G companies. I wanted at least 10 women to participate in the study. If they consented to participate, I organized a time to meet virtually, respond to questions by email, or call to interview them. The data I collected were their answers from the interview and a questionnaire.

Rationale for Using a Descriptive Qualitative Design

I selected a descriptive qualitative design, because it provided a more unpretentious voice to women executives by providing narratives of their experiences as leaders in the O&G industry. Women executives got to express their views on gender inequality and if they could lead with authenticity. The leaders I interviewed for the investigation were kept anonymous, so they did not have to worry about repercussions for speaking out about their situations. Each participant was provided with a confidentiality agreement to confirm that I protected their identity as much as possible. Descriptive study researchers, including Herr and Anderson (2014), demonstrated that action research would reward the participants and me by being able to exchange information. By having women executives participate in discussions and be given an

opportunity to communicate about the issues at hand, they understood that they contributed to being a spokesperson for a problem that has continued for many years.

The descriptive qualitative method strives to gain a better understanding through firsthand experience, truthful reporting, and quotations of actual conversations; therefore, it was the best technique for the study. The descriptive qualitative method also showed how the participants took purpose from their surroundings and how their objective influences a person's behavior. The illustrative qualitative system uses observation as data collection and provides more unique answers to my questions. Data accumulated also cannot be manipulated because it is based on what the person states in an interview (Herr & Anderson, 2014). I chose the descriptive qualitative research method because participants answered open-ended interview questions.

I analyzed the data collection tool in the *Handbook of Feminist Research: Theory and Praxis*, edited by Sharlene Nagy Hesse-Biber (2012). In the first part of the book, numerous data collection strategies are discussed. In Chapter 11, "Feminist Qualitative Interviewing: Experience, Talk, and Knowledge" by Marjorie L. DeVault and Glenda Gross, they examine how important the interview experience should be and how it should be collected. Hogg et al. (2012) emphasized that one should consider feminist thinking when organizing and conducting interviews. One should also examine aspects of interview research with which feminists are primarily concerned, such as active listening, focusing on language, narrative, discourse, interviewing ethics, and the risks of discursive colonization. Also, the interviewer and the interviewee should feel as comfortable as possible discussing details. I observed these parameters as closely as possible to get the best data from the interview. Once I earned

someone's trust, they gave me a more detailed answer, showing me better data to work with and test my research questions.

Using a descriptive research design, I actively assembled data and worked on gathering more intimate details from participants. According to Herr and Anderson (2014), descriptive research is advantageous not solely for me but for the participants because they participated in interviews and spoke about the issues at hand. Action research was appropriate for this investigation because I had to contact as many women executives as possible in O&G. Due to the COVID-19 pandemic, these individuals were more comfortable utilizing virtual meeting areas to conduct interviews and answer questionnaires. As a result, I interviewed participants online. The participants and I functioned together to help uncover the potential causes of gender inequality in O&G and how to help reduce or eliminate them.

Population

A population is an entire group that is studied for data collection. In this study, I interviewed women leaders and gave them a questionnaire. These are the targets for the following traits. The leader must be a woman because this study concerns women's leadership. She must have been employed in the O&G industry for at least 5 years and has maintained a leadership role in the company for at least 1 year. If a woman had the traits mentioned above, they became part of the sample for data collection.

Sample

Women executives in STEM fields have dealt with underrepresentation in leadership positions, pay gaps, and balancing job and life responsibilities. In addition, they frequently experience damaging gender stereotypes, bullying, and sexual harassment, and being regarded as inferior advocates for themselves. Most women dealing with these aspects require more

authenticity to direct an organization. Further analysis of this situation would help produce more awareness of gender inequality, how women executives can lead with authenticity, and assist organizations either in the beginning by obtaining DT support or refining training already in place. The target sample for this examination was 10 women O&G leaders who have been in a leadership role for at least 1 year and have worked in the O&G industry for at least 5 years. In this study, a leader is the person who leads or commands a group, organization, or country. The purpose was to bring a sample size of 10 women lower or upper-position leaders in the O&G industry.

I chose the participants via purposeful, quota, and convenience sampling. These provisions met the conditions of purposive or intentional sampling because it targeted recruitment of participants who were rich examples of the research goal. Women were contacted via LinkedIn social networking sites. Within LinkedIn, there are O&G organizations that include members who are women in O&G leadership positions. I also conducted a search on LinkedIn for *women leaders in oil and gas* and messaged these women. The message included information about my study and asked if they wanted to participate. I also have acquaintances who know women leaders in O&G and I asked those leaders if they would be willing to participate.

Some of these women could also demonstrate convenience selection, which recruits anyone from the target population who can participate. One participant chosen by quota sampling. Quota sampling aligns more with purposive sampling, as you record the target population's characteristics and seek specific people to recruit (Crawford, 2020; Leavy, 2017).

This content may cause a limitation on the conception of determinations. Using the investigation conclusions beyond the O&G sector is the reader's choice. The research did not take discrepancies in organizational culture and practices, which may have influenced women's

experiences regarding gender inequality and leading with authenticity. The differences could select the generalization of conclusions across various institutions. To endure this encumbrance, I conducted one-on-one interviews with the women participants to inquire about their perceptions of the O&G organizational culture and climate concerning gender inequality and to determine what strategies interfere with or encourage a culture of authenticity.

Instruments

I utilized the program Nvivo to organize and reserve data and transcribe participant interviews. Nvivo is a program that is used for qualitative and mixed methods research. The program examines unstructured text, audio, video, and image data. Nvivo also supported the coding process. Transcribing is crucial since interviews are the epicenter of a descriptive qualitative research study. The transcription must be valid for stories of women managers in O&G to be conveyed to the readers of the study.

Data Collection and Analysis Procedures

Data collection was accomplished by interviewing participants. The discussions varied from an hour to an hour and a half. There was one discussion per participant, so the time utilized for research was minimal. I completed data analysis using Nvivo.

Nvivo Coding

Coding is a method of classifying and recording what is of interest or significance, recognizing different data segments, and creating titles to organize the details in the data. Nvivo is a qualitative, data analysis computer program that helps researchers compile, investigate, and uncover other information from interviews, open-ended survey questions, journal articles, social media posts, and additional internet print information. Nvivo is operated mainly by qualitative

researchers from universities, social sciences, and the government. The program was most valuable when transcribing interviews with participants.

Organization of Data

The data collected was organized according to the three research questions of the study.

RQ1: What are the lived understandings of women leaders in the O&G sector regarding gender inequalities?

RQ2: What are the lived understandings of women leaders in the O&G sector regarding individual authenticity?

RQ3: What are the solutions to advance women leaders in the O&G industry?

The interview consisted of questions organized by the three research questions the data pertained to. Organization of the data helped me comprehend the context and feel competent to work with the data grouping for future examinations. Researchers can also utilize the data gathered as source material for their investigations. Even though the participants were unidentified, O&G companies could use the data collected to help recruit women for positions in their organizations.

Researcher's Role

My function was to accomplish the following with the collected data:

- Monitoring and reducing bias
- Formulating competence in one's methods
- Gathering the data
- Investigating the data
- Submitting the findings

When these objectives were completed, I shared the information collected. In qualitative research, credibility, dependability, and transferability depend on the person and my interpretation. My position was also to have unbiased details in the study. What I understand about the survey's subject matter influenced what questions I asked, my hopes from the analysis that I would like to see, and simple distractions. I also considered the time when analyzing the data to guarantee that it was interpreted correctly and accurately recorded what the participants said, and not place any personal bias into the information (Stahl & King, 2020).

Trustworthiness and Reliability

Four items must be considered in constructing dependability and trustworthiness in a study. These things include credibility, reliability, confirmability, and transferability. Qualitative studies deliver a wealth of information that other studies cannot offer. My position was to provide the data aligned with the four items listed above. I also collected information from several sources to construct an analysis. This study was reliable because I took steps to deliver an unbiased source of information. It was worthwhile for me to provide copies of the data analysis to the participants so that they could confirm that their data was being presented accurately and not skewed by any personal bias (Stahl & King, 2020).

Ethics of Study

As with any study, some ethical considerations must be made. The ethics that must occur are social and clinical value, scientific validity, fair subject selection, favorable risk-benefit ratio, independent review, informed consent, and respect for potential and registered subjects. Social and clinical matters were essential because my participants would like to understand if I was positively utilizing their answers. One of my interview questions asked the participants what they wished to see from the study. I wanted the leaders to notice the results and how they could help

their company. Scientific validity dealt with the survey questions accurately reflecting the idea I attempted to measure. Reality was significant when measuring interview data from participants. A suitable subject preference must also materialize for data to be recalled correctly. Participants would also like to see a favorable result with the collected data. Hopefully, the data in this study assembled a more positive work environment by retaining gender equality in O&G. I also anticipated that data contained in this study would enrich the knowledge of women.

We also need to have studies on women's leadership in business and how gender biases affect our society. Independent review allows researchers to have their work reviewed by others in the field, and they can propose perspectives to describe the data. Informed consent is a must for all participants and researchers. For data to be accumulated, all participants read and signed a consent form I sent out. The Abilene Christian University Institutional Review Board (IRB) committee endorsed the document before participants acquired it (see Appendix B). The paper defined how I protected and utilized all data after it was collected. Last, respect for potential and enrolled participants was of the utmost importance for this study. Many participants had active schedules between work and home life, yet they did interviews for this study. Instead, they chose to respond to the questions and participate in the discussion. I also appreciated the participants for offering information about their company and position within the organization. They volunteered to disseminate data with me when they did not have to participate.

Organization of Data

The organization of data is vital for research in a dissertation. Many dissertations use dozens of sources to explain the study and the findings from new research. I had to organize my data using a coding system. I first divided my articles into categories by what I discussed as gender inequality and whether it had an idea for future research. I have also kept research

journals on each paper and took shorthand notes on what was discussed and potential quotes that I could use.

I also enjoyed reading about the ways to analyze visual data. These were questions that I considered using in my dissertation when analyzing data. There are numerous ways to analyze data in a qualitative study. A researcher can use coding, content, or thematic methods of analysis. Coding is a system of classification and noting what is of interest or significance, identifying different data segments, and creating labels to organize the information in the data. Content analysis is used in documents and archival research to determine certain text words or concepts. Last, a thematic investigation contains information and data on the theme discussed.

Data Analysis

The analysis method I used was the *node* coding analysis through Nvivo. There are vast amounts of information that I studied. However, I needed to use coding to organize my data and not lose the data because I had an overload of data. According to Belotto (2018), the coding process allowed for interpreting large segments of text and portions of knowledge in new ways, and assessing how these meaning units were linked led to identifying themes (Belotto, 2018). When participating in an action research study, a researcher should be active and create codes for massive amounts of information and organize the information accordingly. Coding details could lead to other organizational methods to help researchers use essential information.

I created a method to organize my information when I started researching. I first divided my articles into categories by what authors discussed on gender inequality and whether they had an idea for future research. I have also kept research diaries and taken notes on each article on what was discussed and potential quotes that I can use. A researcher should use a coding system to organize information. It is the first time I have considered this, but now that I have read the

Belotto (2018) article, I utilized it because it led to creating themes for the dissertation and answering research questions. The code I made was “=/\$” for unequal pay, H.W. for women with a home and work life, A for authenticity, STEM for science, technology, engineering, and math, DT for diversity training, O&G industry for oil and gas industry, and ST for a stereotype.

The analysis trajectory examines how data is being analyzed; it is coded, studied for content, or investigated for a theme. The steps I utilized for qualitative data analysis were identifying the big idea—gender inequality for women executives in O&G organizations. The action told the main problems in the organizations and what needed to be researched further. Then, I coded the collected data and kept the information in a research journal. Coding helped to organize the data and make it more manageable.

I then recoded the data and examined if I could break it down into more specific categories to narrow down my focus of study. I then created my findings statement, provided quotations from participants, and created a summary of the data. Last, I analyzed the conclusions by linking experience, insight, and literature review. It would have been easier to place information by theme by coding data and having it more organized. I discovered in my research that future studies need to be conducted on the kinds of DT that O&G organizations have because women executives should be fearless in leading with authenticity.

Key Assumptions

This study is established on the following assumptions: (a) women experience gender inequality in the O&G industry, (b) participants could identify and articulate differences between their authentic selves and external actions, (c) participants were open and honest in their responses, (d) a representative sample of women O&G leaders participated in the study, (e) macro, meso, and micro levels of society and authenticity can be accurately measured, (f)

personal authenticity in the workplace is beneficial to the O&G industry, and (g) the O&G industry desires more women talent to apply for employment and acquire leadership roles.

Limitations of the Study

Women leaders have participated in macro-level challenges such as gender stereotypes, cultural limitations, and leadership perceptions. Meso-level challenges for women include discrimination and lack of mentoring, sponsorship, and support. Women have tolerated male organizational culture, salary inequality, unequal measures, and workplace harassment. Challenges are likewise at the micro or individual level because of work-life conflict and the psychological glass ceiling.

Women's leadership impediments have been studied exhaustively; however, only some sources have examined the association between organizational and societal cultural obstacles for women pursuing leadership roles in the O&G industry (Diehl & Dzubinski, 2016). Limited studies also exist on how O&G companies consider the organizational and societal cultural barriers to women pursuing leadership roles in their respective companies. For example, Diehl and Dzubinski (2016) note that limitations exist in analyzing women leadership barriers, such as organizations and professional women needing a multipronged approach, including career planning and career development guidance.

Rules also exist regarding research on mentoring and coaching for persisting in progressing into leadership roles (Brieger et al., 2017). According to (Brieger et al., 2017), a future investigation should examine whether women directors accentuate emancipative significance likened to other women employees. A further limitation is the need for an expansive time-series database to manage a possible mutual relationship between gender-related organizations such as the O&G industry (Brieger et al., 2017). Limitations also address

investigators needing to comprehend differences in candidate evaluations using administration jobs in various sectors (Fleming et al., 2020).

According to Chuang (2019), verifying the leadership of women requires additional empirical research methods. Continued measures to involve and assets are necessary to establish whether research creates a difference in gender equality at top-level management and women's ongoing women's DT program development for future work. Specifically, a reflection that discusses its consequence on women's balance in senior and leadership roles in the workplace might be worthwhile (Chuang, 2019).

Chapter 1 identified the need for testimony on how women leaders function in O&G and how gender biases affect their leadership. Chapter 2 recognized that women leaders do have issues with gender biases in and at work. However, the peer-reviewed literature should have specifically investigated how people can correct these issues and how women can lead authentically, no matter the barriers. Other limitations that could take place are that women leaders could be afraid of losing their privileged status for their answers in the interview or questionnaire. Women could then fear losing their jobs because of how they answer. Women leaders could also provide solutions that could be more truthful. For example, women could state that there is no gender bias in O&G and not admit that they must conform to mens leadership qualities. This study focused on how gender inequality limits women in the O&G industry; however, it is revealed that women provoke society's micro levels.

According to their culture, some women conform to gender roles and stereotypes in a male-dominated work environment. Another limitation of the study could be that more women should have agreed to be interviewed or answered a questionnaire. Eventually, more than nine women would need to be interviewed about their lives in O&G leadership. The limitation of this

investigation is choosing if women create gender inequalities. Recommendations for future research are enclosed to examine the authenticity and whether women could transcend gender inequality and better control their lives. Finally, this study concentrated on the perceptions of O&G executives, whether man and woman, regarding their authenticity in the workplace. Because it did not desire to understand how others perceive them, this could be seen as an encumbrance.

Delimitations of Study

The delimitation of this study is items that I chose not to focus on for data collection. This study did not seek information from male leaders in O&G because this is a study of women leaders in the industry, and the information needs to be from a woman's perspective. A study investigating how men see women leaders could be another study. I also chose to focus on authenticity as a leadership style and could have easily considered other leadership styles for the study. I also focused only on HRD theory and social identity theory for the theoretical framework. Again, I could have easily considered others for this study. Because of these choices, the outcome of this study could have different results compared to analyzing other theoretical frameworks, leadership styles, or the gender of participants.

Summary

The problem of practice for this descriptive qualitative study was the need for testimony from women leaders in the O&G describing how they function in their positions. In this study I aimed to explore the experiences of 10 women leaders in O&G companies and examine how they work in their leadership roles. The focus was on seeing if they could lead authentically and how they dealt with gender biases. Qualitative inquiry begins with certain assumptions and questions, which enable an inquisitive researcher to discern the meaning individuals attribute to a

specific social or human problem” (Herr & Anderson, 2014). Although strategies for qualitative inquiry have evolved to provide researchers with six diverse approaches to scientifically explore, describe, or explain a specific aspect of social life, I determined that a descriptive study would be the preferred strategy for determining the research questions for this study (Terrell, 2022).

The essential element of a descriptive qualitative study is a reflection on one’s individual experiences and intentions, which relates directly to one’s experiences (Herr & Anderson, 2014).

A descriptive qualitative study enabled me to gather data that answered questions related to the experiences of women leaders in O&G. The use of descriptive research showed the authentic experiences of women leaders in O&G, which is good for comparing results. The results of this research may benefit O&G companies that want to hire more women and O&G women who are interested in becoming leaders.

The study would interest people studying how gender biases affect women in work and be an interest to people looking how gender biases affect women and work and in society. The study would also interest people studying how gender biases affect women in work and community. Furthermore, the results could motivate O&G, STEM companies, and other organizations to create more diversity in their companies. Finally, the research results may provide more information on gender bias, O&G, women, and STEM studies.

Chapter 4: Findings

This chapter presents the findings from 12 semistructured interviews with women leaders who shared their experiences of gender bias, leading to the authenticity and advancement of women in the O&G industry. The data analysis revealed overarching themes and subthemes reinforced with direct quotes from the in-depth interviews. Themes were presented to display a pattern, relationship, and alignment to the research questions. The themes identified helped me decipher what gender biases were most prevalent in O&G.

Research

I designed his qualitative research study to study women leaders' HRD theory and social identity theory in O&G companies. I used these theories to understand how women in these positions describe leading with authenticity in the workplace. Data collection and an analysis of the research questions and theoretical framework were used to answer the following research questions.

RQ1: What are the lived understandings of women leaders in the O&G sector regarding gender inequalities?

RQ2: What are the lived understandings of women leaders in the O&G sector regarding individual authenticity?

RQ3: What are the solutions to advance women leaders in the O&G industry?

Demographics

The 12 participants exceeded the initial target of 10 women leaders from O&G companies. I conducted interviews over one and a half months, beginning on March 14, 2023, and ending on April 30, 2023. In the allotted time of data collection, I obtained 12 participants out of 363 women who qualified for the study. Actual names were replaced with numerical

assignments (P1, P2) to maintain confidentiality. The letter and number assigned are not affiliated or associated with the identity of the participants or their respective companies. I asked 12 open-ended semistructured questions (Appendix A) in interviews that averaged 45 minutes to 1 hour. The coding process generated three overarching themes and 11 subthemes. All information gathered was kept in an encrypted, password-protected, and digitally saved file.

Procedure

The words from the three research questions served as preliminary codes. Gender bias, authenticity, and advancing women to leadership roles allowed me to develop descriptors and assign them to themes and patterns aligned with one of the three research questions (Miles et al., 2020). I then applied thematic analysis to the entire data set to identify shared perceptions and ideas among the participants that could support findings and conclusions (Bloomberg & Volpe, 2019).

Data Collection

Table 1 describes the demographics of each participant. The 12 participants represented an average leadership tenure of 19 years; eight had employees reporting to them. All participants were from the United States and were working in Texas, North Dakota, and Pennsylvania. Three out of 12 participants worked for Fortune 500 companies, while nine worked for smaller regional companies. Years in the industry ranged from 10–35 years. Employees reporting to the participants went from zero to 1,000 employees. Eight participants had direct reports, while four participants did not have direct reports because they owned their businesses.

Table 1*Demographics of Participants*

| Participant | Leader of others | Years in the industry | Employees reporting to participant | Direct men reports | Direct women reports |
|-------------|------------------|-----------------------|------------------------------------|--------------------|----------------------|
| P1 | yes | 20 | 9 | 5 | 4 |
| P2 | yes | 31 | 12 | 4 | 8 |
| P3 | yes | 35 | 150 | 144 | 6 |
| P4 | no | 26 | 0 | 0 | 0 |
| P5 | yes | 19 | 29 | 19 | 10 |
| P6 | yes | 12 | 1,000 | 900 | 100 |
| P7 | no | 16 | 0 | 0 | 0 |
| P8 | no | 10 | 0 | 0 | 0 |
| P9 | yes | 15 | 7 | 3 | 4 |
| P10 | yes | 15 | 100 | 0 | 100 |
| P11 | no | 12 | 0 | 0 | 0 |
| P12 | yes | 20 | 2 | 2 | 0 |

Presentation of the Findings

Using narratives in semistructured interviews allowed participants to contribute to the discourse on how women leaders in O&G lead while facing gender biases and how they are leading with authenticity. More importantly, participants could express their thoughts and feelings in an environment free of ramifications and fear of retaliation, thus allowing their authentic selves to be present and understood. The descriptive qualitative method was appropriate for creating a better understanding through firsthand experience, truthful reporting,

and quotations of actual conversations; therefore, it was the technique used for the study. I used the research questions to gather insight into the application of gender biases women leaders in O&G face and whether they can lead authentically.

The data analysis resulted in three main themes and 10 subthemes that provided insight into how women leaders in O&G handle gender bias, individual authenticity, and how women advance in their organizations. The analysis allowed me to understand the most prevalent issues for the women interviewed. The themes also helped organize data that I collected from the participants.

Table 2

Research Question Themes

| Recurring themes | <i>n</i> |
|------------------|----------|
| Gender Bias | 179 |
| Advancing Women | 76 |
| Authenticity | 43 |

All participants addressed the following aspects in their responses: gender bias, authenticity, and advancing women. Topics discussed to inform RQ1 were based on gender biases. Subtopics ranged from women having trouble advancing, pay inequality, work and work-life balance, social identity theory, good ole boys club, no female accommodations on field sites, sexist male attitudes, women being biased against other women, diversity, inclusion, HRD theory, and ending gender bias. Some women mentioned that they did not experience any gender bias while in their leadership roles.

Table 3*Subcoding Themes to Research Question 1*

| Recurring themes | <i>n</i> |
|--|----------|
| Diversity, Inclusion, and Human Resource Development | 10 |
| Male Attitudes | 9 |
| Good Ole Boys Club | 6 |
| Trouble Advancing | 6 |
| Work/Life Balance | 5 |
| Social Identity Theory | 3 |
| Women Being Biased Toward Other Women | 3 |
| Pay Inequality | 2 |
| No Female Accommodations on Rig Locations | 2 |
| No Biased Experienced | 1 |

The Importance of Values

The participants' responses to interview questions 2, 2A, 2B, 3, 4, 4A, 5, 5A, 6, and 7 described the findings for RQ1. The subcoding themes were derived from participants' responses to gender biases in O&G.

Research Question 1: What are the lived understandings of women leaders in the O&G sector regarding gender inequalities?

All 12 participants described facing gender biases in their careers. The three issues with gender bias in O&G concerned women's diversity and inclusion, male attitudes, and what participants called the "good ole boys club." The least-commented upon gender bias issue was that there are no women's accommodations on rig locations. However, one participant experienced no gender biases, while another mentioned ending gender bias.

Diversity, Inclusion, and Human Resource Development Theory

Ten out of 12 participants mentioned diversity and inclusion programs by saying that their organization either had a program in place or that it was nonexistent. Diversity and

inclusion fall under the responsibility of the HR department of an organization. HRD theory states that employees feel it is the responsibility of personnel in the HR department to ensure that workers are equal with everyone in the organization and that the workforce is diverse in culture, ethnicity, and race. The participants shared various perspectives on how their organization handles diversity and inclusion. P1 shared an example of a diversity and inclusion program, stating, “We put together our company code of conduct, our employee handbook, and we made sure that we touched on this and that this is an essential tenet of who we are because we want diversity and inclusion.”

Ten out of 12 participants stated that there was a diversity and inclusion program in their organization, but the program needed to be more detailed and considered. For example, P3 displayed the attitude most participants felt their company had towards diversity and inclusion: “Yes, certainly everything was called sensitivity training, which meant quitting being a jackass.”

Unfortunately, P10 and P9 stated that what most companies in O&G have for diversity and inclusion training needs to be improved to their company needs. When asked if her company had DT, participant 10 answered, “No, we do not.” P9 stated, “We do not have any specific programs, I would say, probably not any.” P12 described the program used in her company:

We do not have a formal program. I know it is like it is one of those boxes we check along with the whole ESG movement (I do not know if you are familiar with that, and maybe a little about oil and gas. It is a big push right now, so . . . We do not have a formal program.

P3 also stated this about HR in alignment with HRD theory themes mentioned in Chapter 2:

HR cannot lead something that nobody trusts . . . they are no good at it. I mean, eight years, not leaders. They are bean counters. Benefits this and that. And so, any time I see a company take a human-like employee initiative about how we interact with each other and give it to HR, I know it will fail. I have done this at every company I have been at. So, yeah, HR can be an impediment.

Male Attitudes

The most prominent cause of gender bias, according to the participants, was the attitudes of male workers. Nine out of 12 participants mentioned male attitudes as the primary cause of gender bias in O&G. For example, P1, P3, P5, and P12 stated that sometimes working in O&G is uncomfortable because of male attitudes. Male attitudes can range from men feeling superior over women, physically or mentally, and much work in O&G requires heavy tools when working in the field. Most women cannot lift these tools, while most men can. So, men feel they should have leadership in the area because they can do the heavy physical work. Meanwhile, men feel superior in the office because they have experience in fieldwork, and most women do not. Many workers in O&G think leaders should have field knowledge to lead a team in the company. Participants 1, 3, 5, and 12 shared their experiences with male workers and how they have hindered their advancement.

I never go by myself because I am a woman, and I do not feel comfortable, you know, being in that position. However, you can always see the field guys wherever we go, especially at smaller companies. Every time I come in, there is this. So, the “chick,” we must show her how to explain this stuff.

P3 stated that it was difficult for her to be taken seriously on a job site because of a male attitude and being referred to as a “little girl”:

There was a guy and I was supposed to train with him. I was working for a significant oil gas company offshore as a trainee to be a drilling foreman, and it took work. So, one of the service company guys said, “The little girl will sign your ticket.”

P5 states that male attitudes have given women who were competitive in the business a negative connotation. “They take something, say the word *aggressive*, which is a positive word for both male and female, and turn it into like, you know, over bitchy or whatever, right?” P12 gave an example of how male attitudes were addressed in her organization and how they were being handled under her leadership.

I can talk to people from all walks of life, and that may be where a lot of the bias comes in, and they [men] do not. They do not expect you to be able to have a conversation, even though you can. I said, “Can the males in the industry stop and say, hey, would I treat my wife, daughter, mother, or whoever like this?”

Many of the participants dealt with negative male attitudes in their careers. Some had more extreme examples compared to others. According to the data, male attitudes were the most prominent factor of gender bias in O&G. One item that stemmed from male attitudes that could not be ignored was something participants called the good ole boys club.

The Good Ole Boys Club

Six of the 12 participants mentioned the second largest area of gender bias in O&G. Participants explained how they had to change their appearance to fit what is referred to as the good ole boys. In other words, fitting in with men and “being one of the guys.” Some participants do not change their appearance or how they conduct themselves. However, they want to be invited to the same activities men participate in because most business deals are created while participating in those events.

Even though some participants made changes, they still need to be included in activities embraced by male members of the organization. Activities included hunting expeditions, fishing, going to bars or clubs, and shooting events. P1, P4, P8, P9, and P10 explained how some women are involved in the activities that men participate in but are not seen as participants and why some women are left out. P1 stated, "I went to a shooting place tournament the other day that was, for a while, an oil and gas event. And there are like a 100 guys and four women. And so, they assume I am there to drive a golf cart, and I am like, 'No, let us go.'

Having a good ole boys club identifies with social identity theory because in most cultures it is not appropriate for married men or women to bond (even though it is strictly business) with others who are not their spouses. For example, most spouses would probably not like their significant other to go on fishing or hunting trips if they could not go with them. While many O&G workers go to bars after work, many spouses would not like the idea of their spouse having drinks with members of the opposite sex. As the name states, the good ole boys club is exclusively for the men who work together. Women know they are left out of potential business deals during these times.

P4 stated the implications of what is known as the good ole boys club:

The culture that they deny exists. You see, it is still the culture. Women cannot do certain things; some men may not think that way. However, there are probably enough that still do so; it makes it hard to climb the ladder. To be recognized for doing things. That is what I thought.

P8 stated that she did not change how she acted around her male coworkers but participated in the same activities as the men.

I think the main thing that would help all women is just being right there with the guys, like playing with the guys and not acting any different. If you approach it as if I am just one of the guys or as equal to everyone else, that is the best, and that is how I have always approached everything in my life; I may not know any difference.

P9 stated how it can be challenging to be part of what male members do within the company, no matter what women do:

In a way, it was because the men got together. They went hunting or fishing, struck deals, and invited the women. The most significant barrier is cracking that big boys club code to get into the big old boys club.

Social identity theory can help explain what P10 has experienced with her male coworkers. Her culture and society dictate that it would not be suitable for women to go out with married men, even when the meeting is not for courting practices. Also, social identity theory could explain how married women would not want to go on extracurricular activities with men. While the meetings are strictly about conducting business, cultures and society put gender barriers on meetings. P10 stated that male coworkers have formed a bond with other workers, but she is not included in work-related activities:

Many of these guys have become good friends over the years, and they go hunting together. They go out to the bars together afterward. And I do not get those same invitations not because they do not like me, but because it is weird to be a married man, inviting a married woman to go on a hunting trip, out to the bar, or whatever.

Work and Home Life Balance

Five of the 12 participants mentioned that the work and home life balance was an issue in their careers. Participants 1, 5, 7, 8, and 9 felt that only women had to balance work and home

life because of how their specific culture and society viewed gender roles. For example, P1 stated that O&G provides paid leave for both parents:

I think they are doing stuff like now, that some more prominent oil and gas companies provide the same paternity leave as they do in maternity leave and recognizing that that is important and removes some of that bias by equalizing.

P7, on the other hand, explained how raising children is left to the women of the household, creating a delicate balance between work and home life:

Work-life balance being a mom, I mean, we know these jobs are demanding. Sometimes, we do our eight to five go home 40 hours a week, and then work a lot. Women shy away from the industry because how can I be a mom and work? Do you know? 40, 50 hours, 50 hours a week. That is the number one barrier: not feeling like you can have a work-life balance, not feeling like you can be successful being a woman in an oil and gas and being a mom raising a family.

P9 stated that she was told about not interrupting her career, “If you make an excellent salary. You do not want to have a baby soon.” Some participants felt that the work-life balance was only for women, and men did not have to face those challenges.

Women Are Biased Against Other Women

Three out of 12 women mentioned women being biased against other women. This is referred to as the queen bee effect. The queen bee effect is where one female is in the group of leaders, and no other women are allowed to participate. Participants 7, 9, and 10 give examples of women being against other women. For example, P7 explained how different women looked down on her in ranking because she was a woman:

One woman approached me and said, “Here, I need 100 copies of this, like I was her secretary. I think we have people to do that. You know, there are admins on this project, but just because, you know, it was a girl and you know, she is out here, you know, she could do it. I was not above making copies, but I had to do that. I was like, I do not think I have time to do this. I am already working 60 hours a week. I have faced more biases at the hands of women than men, which is sad.

Participants 9 and 10 explained how some women would rather see someone stay in the lower spectrum of an organization rather than help them achieve their goals. “We need to build a women’s support group because women need to support each other. That is the biggest thing. I know that is there, but I think we can be our worst enemy sometimes.” In the same vein, P10 stated, “Some women would rather break off the rung on the ladder than help the next woman up.”

It is a strange concept that women would not want to help other women become leaders. Being the only female in an organization’s leadership could seem more prestigious. That female would be viewed as a rarity. In some cultures, being considered a monster gives the person a higher social status. It could be what these women are reaching for.

Participants Who Did Not Experience Gender Biases

Five out of 12 participants explained that they did not experience gender biases in their current leadership role. They could have experienced gender biases while starting in O&G, but now that they have a leadership role, they do not experience gender bias, because, as the participant stated, “You do not cross the boss.”

Participants 2, 3, 5, 8, and 10 no longer experienced gender biases in their current roles. P2 stated, “I feel respected for the most part.” P3 said, “The vast majority of people have been

excellent. I love the people who work in oil and gas. Most of them are fantastic people to work with. P5 also agreed that she had experienced no gender bias:

I do not have any challenges because they are men or women, and they do not have any challenges with me. They appreciate the diversity I have brought to the team because the people brought to the team are the best of the best.

P8 also agreed that there has been slight gender bias wherever she has worked, but that “I very seldom experience it.” Last, P10 shared how women were being treated in her company:

The industry aspect I have touched on has been very, you know, guys or girls, very collaborative and needs to identify the difference. I do not see females in my role necessarily getting treated differently either.

HRD theory could be responsible for having women not experience gender biases by having a culture that promotes equality within the organization. Also, social identity theory could play a part when these participants were raised in a culture that did not view women as a weaker gender, or they learned to ignore biases.

Social Identity Theory

Three out of 12 participants provided information that resonates with many of the tenets of social identity theory, a part of the theoretical framework that ties into RQ1. RQ1 questions the lived understandings of women leaders in the O&G sector regarding gender inequalities. Most cultures expect men to be leaders when both women and men participate. Some societies feel men should not be viewed as mentally or physically weak. For example, the gender biases told by some participants showed that women were considered the weaker gender. This was prevalent when participants discussed subtopics such as male attitudes, good ole boys club, work-life balance, pay inequality, and women being biased toward other women. Discussions

demonstrate that women have more difficulty doing equal tasks than men because of these biases. P2 gave an example to support this theory:

I can tell you the one instance where someone did not report to me. It was someone who was very young, and he was not experienced enough, and he struggled. He had a position I did not want, and I do not know whether he felt threatened by me, but he did not want to learn from me.

Participants have also dealt with how they were addressed on the job in front of their colleagues. P2 explained how a male coworker once managed her on the job:

When I first started, I had situations where an older guy called me a little lady. When I left my first job, my boss told me I owed him an explanation: “Little lady, you do owe me an answer.”

Pay Inequality as a Gender Bias

Two out of 12 participants mentioned that pay inequality was based on gender bias. P1 explained how pay in a company should be transparent so more people can apply for jobs:

An O&G company did a gender compensation study of their own company, and they published it. It is essential to be transparent about it, ensuring that you are doing those studies and that the men and women are being paid equally.

P11 agreed with P1 in stating that wages and promotions should be transparent to attract potential employees: “Wages and promotions. Treatment and then, you know, just suggestions. It may have been one or two, but wages are huge for women in this industry and so are promotions. I say those are the two biggest ones.”

HRD theory could come into play concerning pay equality. Some companies feel that they should not have to pay female workers as much as men, because in US culture men are

viewed as the family's breadwinners, and it helps them keep a higher social status. HR management could provide equal pay for all workers according to their qualifications. Equal pay could then attract more female candidates for employment.

No Female Accommodations at Oilfield Sites

Two out of 12 participants described issues about needing accommodations for women at oil rig locations. Accommodations include PPE and restroom accommodations. Participants 1 and 6 stated this issue. P1 first explained how she has had to purchase her gear on the field to do her job:

You know, another thing is that when you go out to the field, sometimes you go to a field visit, you must wear PPE equipment. So, you go out there, and they are like, we do not have women's sizes. So you are, you know, you must wear oversized boots or an oversized jumpsuit or, you know, they do not have any women that come out to the field to think we need to carry that. I have gone to the area multiple times and bought my stuff. I got all fire-retardant clothing, my steel-toe boots, and everything. So, when I go in, they say, oh, well, we do not. And I am like, I have already got all my gear. There are still sites I have been to where they don't; they do not have clothing that fits a woman.

P6 also shared the views of P1; however, she explained how a few fields she worked in did have separate accommodations for women:

Few rigs are being designed to accommodate women. Some clients and customers understand that they cannot eliminate women from some operations, particularly now that we have this drive for more women to participate. We need to have gender balance or gender targets in the organizations in the industry. You must take two or three rooms and dedicate those for female engineers in the league to stay. Furthermore, most rooms are

usually suites, so they have toilets and bathrooms and do not have to share with all the men. So, the women will work during the day, and the guys will work at night so that the women can go in and have a little sleep, shower, and not be disturbed at night. And then the guys can call me when they are ready to go out and work.

Social identity theory ties into this subtopic because, as mentioned earlier, most women physically cannot do most of the work in the field. Therefore, companies still do not have accommodations for women out in the field or on rigs. Culturally, women are viewed as not interested in doing oilfield work, so why provide accommodations for women not in the field?

Summary

All participants experienced gender biases, but five out of the 12 participants no longer experienced gender biases because of advancing to a leadership role. Many gender bias issues were based on a lack of diversity and inclusion programs, plus male attitudes. The last-mentioned issue is the need for more female accommodations in rig locations. Now, I will analyze how the participants have described leading with individual authenticity.

Individual Authenticity

The participants' responses to questions 8, 9, and 10 described the findings for RQ2. The theme derived from participants' responses to individual authenticity.

RQ2: What are the lived understandings of women leaders in the O&G sector regarding individual authenticity?

What is Authenticity?

Nine participants shared their understanding of authenticity and how they applied it to their leadership roles and lives. Authenticity has been essential to most of the participants, and all who answered defined authenticity in similar ways. The following is how nine of the 12

participants answered question eight, while P4 and P7 did not know how to answer the question and stated, "I do not know." P8 responded that she did not use authenticity in O&G.

P1 explained the importance of authenticity in her leadership role, especially when in discussions with the company employees:

It is so important to be authentic, and I feel like when you are authentic, you are your true self, which is what people gravitate toward. You must know your values and who you are and present that daily to everybody. You know, showing emotion and being transparent. Showing up. Putting forth that effort. And being who you say you are. You must know yourself, be willing to do the hard work to understand yourself, and then make sure that it matches how you behave and what you are showing.

P2 stated that authenticity is the following: "Just using your values and morals and leading with those things." P3 believed that authenticity is honesty with yourself and others:

How can you be more authentic? You know you, but it is just honesty if I was defining it. I am always trying to be as honest as I can. For people who report to me and those above me, I want to give them the most accurate picture of things I can and not only tell them the good news because that is super dangerous.

P5 agreed that authenticity is honesty with herself and others:

I said being able not to hide oneself from your team to be accepted, which is a negative, right? It is being honest with yourself just as much as it is being honest with others. When people are inauthentic, they often lie more to themselves than intentionally to others.

P6 stated that being authentic is being true to yourself in work and home life so she can have an equal voice when addressing problems within the company:

It is just making me like being and doing me every time. I do not want to act like anybody; I do not want to speak like anybody. I do not want to show up in the workplace hoping that somebody likes me for who I am not. So, I want to be and do me, which is what authenticity means. I show up the way I am in my natural elements. In my most, you know, genuine self, I am not going to come and not look good. I will look good, but I want to be me. I do not want to dress in a certain way just to be accepted. I do not want to act in a particular manner. I want to have me do everything, be accepted for who I am, and be allowed to access opportunities like every other person would be allowed to speak up when necessary.

P9 stated how being authentic consists of sharing things about her personal life, and that sharing your personal experiences will lead to honesty when dealing with others:

When I lead with my heart and what I think is right, I want to be honest; I have much integrity and lead with a heart to the right, and that is when I try to be very personable. I share a lot about my personal life.

P10 said she believed that honesty and integrity are factors in being authentic with others. Also, communication is a large part of being authentic and showing interest in others:

They are just being true to yourself and being able to communicate with who you are openly and honestly, and do not make people work to get to know you. Many authentic people seem so genuine. There is no barrier; they do not have that. The trip to work to get the conversation out of their opinions is open, honest, and authentic from the start. So, authenticity comes from a place of worthiness, confidence, and interest in others.

P11 stated that authenticity is showing respect towards others, and being authentic can help eliminate gender biases:

Mutual respect. Earned recognition and then the same level of treatment. We do not want to be treated any differently; we want to be treated the same as women in the industry and the same positions and all that. So, it's just mutual, equal opportunity, treatment, respect. It is simple.

P12, like other participants, stated that authenticity is being honest with yourself and how you act toward others:

I look at it like I do not see myself as quiet, like a traditional female role. I try to be myself when I go on to a business development lunch, and I try to make sure that when I speak, nothing I do or say is purely female. It is odd to separate yourself from who you are and still fit in with the conversations.

Social identity theory ties into RQ2 because many people want to see themselves as authentic in their work and home life. Most cultures expect others to be truthful when asked or in their actions. HRD theory ties into RQ2 because employers require employees to be honest and display a proper work ethic when making decisions. An HR director would not want to hire someone who is not forthcoming in their work ethic or would not be truthful when something goes wrong on the job. Unfortunately, some do not display their genuine selves while at work.

Authenticity Not Being Used in Leadership Role

P8 shared how she needed to know if she used authenticity in her leadership role. She explained how she puts on a different persona for working in O&G:

I need to learn how to answer that one. I do not know for myself; I say it like it is, whether hurting someone's feelings or not. I think in my career, I have pissed off a lot more clients knowingly or unknowingly, you know? However, amongst the industry

network, you know, you have got to keep that professional face on, you know, unfortunately.

When Participants Feel Most Authentic

Question 9 refers to when the participants feel most authentic when leading others in their organizations. Each participant gave their answers. Two participants needed a definition of authenticity before they answered question 8 and were provided the purpose of authenticity as stated in Chapter 1. Some participants gave lengthy answers, while others were very brief. P1 said that she has meetings every Monday with her staff. It was during those meetings that she felt most authentic:

We have team meetings every Monday, and we all start with what we call our feelings clearing, which sounds strange. However, we ask all 10 people how they feel physically, emotionally, mentally, and spiritually if they want to share. That is where I can honestly share how and why I think, but then I can also listen to what my team is saying, understand them, adapt to that, and hear what they are, and we are all okay sharing that. That encompasses who I am, like, I am okay sharing who I am. That is a moment when I feel very authentic.

P2 stated that she feels most authentic when she is herself. “So, I have mostly been myself, which is upsetting to people sometimes, but I try to do what I feel is right. I was raised with good morals and tried to keep those in place.”

P3 explained that she feels most authentic when working with others in the field:

You know, probably many times working with the field people. Now I enjoy all those guys. I trust them. Furthermore, trust is a big piece of feeling authentic. If we do not trust

somebody, we are less likely to be authentic and fully out there. So, in situations where I trust other people.

P4's statement was much briefer than the other participants, explaining that she feels most authentic "When I had to present to the assistant controller."

P5 feels most authentic, like P1, when there are staff and one-on-one meetings with her employees:

It is really in the staff meetings with my team and in one-on-one sessions. When I go into negotiations, I put a little bit of a poker face on or even in when I say one-on-one meetings. It is those cultural settings, the one-on-one, the staff meetings that I have with my team, or when I am with other people; it is a safe place, and I am glad it is cultural.

P6 stated that she feels most authentic at her place of employment because she can be as creative as she wants, and other employees will not hinder those moments:

When I am doing what I love, like when I am doing a job that I love, and my current job is something that I love and strategic, it allows me to be as creative as possible. You know, I can let my juices flow freely without being censored or, you know, controlled, so I love it.

P7 stated how building relationships helps her feel most authentic because it leads her to help others:

I think whenever I am out. It is like building those relationships and not just about the sale. It is creating that relationship with them, being dependable, knowing that they feel like they need something, they know that they can call you and you will be there to support them and get them what they need.

P8 stated that feeling authentic is mostly outside work because she needs to show a refined version of herself when dealing with clients:

I feel most authentic when it is outside of a business context where it is with a team and, you know, sometimes not that I am not genuine with, you know, clients or people; I am trying to get into business, but you know, the polished, refined version.

P9 stated how talking about her children makes her feel most authentic towards herself and others:

Sometimes, I go into meetings and talk about my kids, and I should talk about them because men never talk about them. That is where I feel most myself when I can. Just lead the way, the way I do it, and I am very direct.

P10 displayed how some people do not feel authentic when around others. This could be because of social identity theory—where people in her culture do not feel authentic to themselves but do towards others: “I do not know if I do not feel authentic, but I am, you know, with a group of people, an opportunity to meet new people.”

P11 also stated how she feels most authentic when dealing with others. She explained how she feels authentic when creating events for oil and gas:

So, I do many events for oil and gas, and that is what I feel so true to myself because it is something I love to do, and I get to bring together all different levels of oil and gas, from the CEOs down to the drivers, women, men, and salespeople.

P12 stated how she feels more authentic with specific groups of people in O&G than others in her occupation. She explained how it helps to be a member of organizations within O&G:

From a business standpoint, I know that I am a member of the East Texas Association of Petroleum Land Man, and then there is an asset and a divestiture group here. I fit in more with the land man group versus the asset and divestiture group.

HRD theory refers to how workers believe that the HR department is responsible for employees' function; knowing what authenticity means is crucial. According to HRD theory, sharing the meaning of authenticity and implementing it would be the responsibility of the HR department. Some companies might believe it is up to the worker to gain knowledge about authenticity. Social identity theory ties into this subtheme because most expect others to be authentic at work and home. For the participants who did not understand authenticity, it would be beneficial to instruct them and follow up to see if they practice authenticity in their leadership roles. Participants were then asked how they ensured authenticity in their leadership.

Ensuring Leadership Practice is Authentic

Question 10 refers to how participants ensure that their leadership is authentic. Each participant gave their answers. Some participants were extensive with their solutions, while others were very brief. Most participants described their behavior as a leader and how that behavior showed authenticity. P1 stated how her behavior promotes authenticity within her company: "You must know yourself, be willing to do the hard work to understand yourself, and then make sure that matches how you behave and what you are showing."

P2 stated that being authentic in leadership means feeling good about the decisions you make as a leader: "Well, that is your moral compass, too. If you do not feel good about a call you make, then you are not being authentic."

P3 stated that getting and giving constructive feedback ensures that her leadership is authentic:

You know, coaching would be one thing. A lot is understanding yourself better and asking for feedback. If you have good people around you whom you can trust, to be honest, they charge you not to bite your head off. Then you get that kind of feedback, which helps you improve.

P4 stated how having managers who let her be herself helped her ensure authentic leadership when she became a leader: “Well, I did have some women managers that I worked for that allowed me to be me and to do what I can do.”

P5 stated that ensuring authentic leadership involves being patient and that making mistakes helps her lead others:

The one thing I changed last year was sharing what I am working on for my goals. I will use my patience and work on a more inclusive language. I walk the walk on my mistakes and learn from them. So that helps me. Make them a part of my journey instead of just a spectator.

P6 stated how being blunt with communication ensures authentic leadership within her organization:

Authentic leadership can be several things, so getting out there, speaking, and speaking what I think without holding back is light. I know we are first humans before becoming professionals or even managers, so we need to connect to our humanness in the workplace. So, I do that as often as possible. And make sure people see me for who I am, not my title. All my accomplishments, my achievements, I am me. Just like them, humans.

P7 stated how learning from mistakes made in the past helps her ensure that her leadership is authentic:

Past experiences of life in general, I feel like I have come a very, very long way, and it was not, you know, it was not easy, and I feel like being able to reflect on that and not make the same mistakes because obviously, I make plenty of them. I made bad choices, bad decisions along the way, things that I should have done differently. All those should have, would have, and could have something going on. Learning from them and not letting history repeat itself but making it better.

P8 stated that ensuring authentic leadership is being a team player: “I think it revolves around being a team player. Ensure we are all elevated and at the same level.”

P9 stated that giving constructive feedback ensures that her leadership is authentic and that having clarity with expectations is a must: “I try to be very clear. I am very upfront about what I expect from my team members and that they should never wonder whether they are good employees if they do their jobs well.”

P10 said she believes building relationships effectively ensures authentic leadership, especially when the connection is made honestly: “Leadership practices are most authentic when you have already built relationships with the people you lead. So, building friendships and trust to lead most authentically.”

P11 said she believes people should be treated respectfully, which is returned when ensuring authentic leadership: “I treat everyone with the same respect I would like to be given. So, I ensure I go above and beyond for everyone, and in return, I expect that back.”

P12 stated the following:

Education is something that no one can take from you. Keep building on your experiences; this is how to keep going. If there are a lot of local landmen here who work

and go home and do not try to meet people and continue to grow and talk and expand their network, that is important.

The comments given by the participants provide proof of how authenticity is expected to be given to others at work and in life. The expectation supports HRD theory and social identity theory. Of course, each participant had different views of what makes their leadership authentic; however, the expectation is that authenticity equals being your true self. The final question addressed is how to advance women leaders in the O&G industry.

RQ3: What are the solutions to advance women leaders in the O&G industry?

The participant's responses to questions 11 and 12 describe the findings for RQ3. The theme derived from participants' reactions to advancing women in O&G. All participants had ideas on how women can succeed in O&G and, most notably, how the companies can help promote women in their organizations.

Advancing Women

P1 stated that it is difficult for women to advance if they do not seek promotion or fight for it, and that most companies do not ask you to take a leadership role; you must ask for one:

I mean, almost all the women I have talked to and asked, was there ever a promotion you thought you should have gotten that you did not? Yes. Did you fight for that? Did you ask for it? Did you tell anybody that you wanted that? Yeah. You just thought it was magically going to be bestowed upon you because you deserved it. We need to be more assertive in that. If you are not given those opportunities, go to a different company that does that for you. It will be a significant change in the next 10 to 15 years.

P2 told a much simpler story about who gets leadership roles in her organization: “I think it is probably qualified candidates.” P3 said she believes that most women will not ask for leadership roles:

A woman can know 80% of a job description and be like, well, there is 20%; I do not know. Oh yeah, okay, they will not put their hand up and try to get into it. I would say those things.

P4 stated that women leaders were scarce because women had different opportunities than men concerning education. “You know, like in the late 90s, there was more opportunity for people, for women, to go to college,” P5 stated that the problem is finding qualified people to fill leadership positions, whether male or female:

The key was taking my time to find the people instead of rushing to fill out a requisition. It is essential if the person only 60% fits the role, but they are the best candidate. To find more candidates, you must balance business and time, but you need to be intentional about diversity and diversifying your group.

P6 stated that the problem with advancing women starts within the classroom and that women must be geared towards STEM subjects so O&G can have qualified female candidates later:

So, I get a sense that until we have the girls in the classroom, but at the primary school, we have the girls in the classroom supported by the teachers, supported by the proper infrastructure, supported by the right policy at a government level, on a state level and a council level or local government level. Then there is not just a child, but you have these girls available to get into the workforce. So, we need stuff from the trade environment for them to get excited, curious, and interested in STEM. Make them see that STEM is a part

of their lives and that STEM will be instrumental to solving the challenges of our world today and tomorrow. You need to know the role that STEM is going to play. They do not see themselves getting into STEM and having to solve this problem.

P7 stated that measures must be taken to ensure women stay in the workforce. Programs need to be implemented to support female employees. Once that occurs, women would not hesitate to apply for leadership positions. She explained that one challenge that needs to be addressed is the balance between work and home life:

We are good at attracting females into the workforce, but what are we doing to help them not just want to be here but want to progress in their careers? You can get an entry-level, and then it is up to you how far you go back to want to move and get that next position and promotion. It is not just going to happen. You are going to, you know, you are going to have to differentiate yourself. You will have to do the jobs nobody else wants to do, like file five hundred papers. You know, you are going to have to do those things.

However, many women leave the workforce once they know they have families and kids, and then they are like, "Oh, I need more time at home." So, it is that work-life balance, which is why many leave.

P8 stated that women need to develop a network for advancing in O&G: "The biggest barrier is your network of whom you know and how to leverage that strategically. I have been slacking off on networking or getting out there, and it has come back to bite me."

P9 stated that O&G is a viable career and that women have proven themselves; however, women must take the initiative and apply for leadership positions:

You may have also noticed that we only have a few female leaders. We are passionate about it and want to show that it is a viable and remarkable career. We have proven ourselves, and I do genuinely believe that.

P10, on the other hand, stated that some male employees need to reform their thinking towards women in O&G and give them a chance at leadership:

That is a place for some of these males to try to reframe some of their minds. It starts with them, but females must also be responsible for their actions. So yeah, the STEM track is great for any female looking at oil and gas.

P11 said she believes that women are afraid to join O&G because of the stereotypes that have been passed down about what happens in the field and office locations. P11 said she thinks that they should not be afraid:

We need women in the industry to promote it back to other females. Do not be afraid to enter the oil field because you are a female. You got this, and we all stand behind each other. That is the nice thing about women in this industry.

P12 gave some advice women who are about to enter the workforce and want advancement: "My advice to the next generation is to keep pushing for the higher job you want and do not settle."

According to HRD theory, it is the HR department's responsibility to find qualified candidates and hire them. HR is responsible for providing training, rules and regulations, and incentives to keep those employees. Many participants feel that HR needs to do more to entice women to join O&G and keep O&G as a relevant career for everyone, regardless of gender. Social identity theory also comes into play concerning RQ3 because once an employee comes to work for a company, they expect the company to work for their best interests, whether it be rules

and regulations to keep them safe on the job, training to be a better employee, or having competitive pay and benefits.

Companies Improving Numbers of Women in Oil and Gas

One of the issues in the O&G community is that companies need to increase the number of women within their companies. Many companies need help with this aspect. I asked participants how companies could improve the numbers of women in their companies.

P1 stated that the number of women can be improved by looking at demographics and being honest, acknowledging what they have and how they can improve numbers:

It starts with acknowledging it and looking at the makeup of this. How many women do we have at each level compared to men? What do our salaries look like for all of these, getting things in line internally and making your workplace friendlier to men and women and more balanced to be inclusive of everybody? Then you can go and recruit people and encourage and give opportunities to both women and men to come on board because the pay is competitive, the benefits are competitive, and you have made it a friendly environment. You know, we have a total lack of fresh blood in this industry because this generation does care about that, and oil and gas have yet to show that they do. We need help finding somebody to work here.

P2 said she believes that outreach programs and making themselves known to younger people could help with the problem: “Maybe outreach programs and trying to get to the younger people. As far as fieldwork and stuff like that, I do not know. I do not know how many women desire to do that job.”

P3 said she believes that STEM education in schools could help increase numbers in O&G in the long run, and that having accessible childcare and flexible hours could impact an increasing number of employees:

It starts again in middle school. So then, these companies need to go out there and actively support and foster STEM programs. We need more male engineers, too, if you do not ever reach down in there and start encouraging girls because, at some point, girls have been taught that girls are not good at math or are not as good in science. Improve childcare with more flexible hours.

P4 stated that advertising O&G as a career for females can help increase numbers in companies:

You went to college after high school to become a nurse or a teacher. Alternatively, you took classes and became a secretary. That was the option. It took much work to get into other realms. Some women managed to, but it was not expected. Now, it is normal because we have come a long way.

P5 stated that companies could be more responsible when hiring people, tying back to HRD theory by having HR accountable for having more women:

I am being intentional about their hiring practices and being inclusive, empathetic, and personal. I hate to say it; it is like just being a person. Do more than treat work like you are. It is a robot because there are people you spend more time with than you do necessarily. So, it is going to be a cultural shift. Reverse mentoring programs and intentional hiring practices lead toward that type of culture. But ultimately, the culture needs to shift and be real people to each other.

P6 also stated that HR is responsible for recruiting more women for O&G companies and creating partnerships with schools to promote STEM education:

Recruit more women, and before that, some strategic engagement with schools and universities and create opportunities for teachers to get the proper knowledge and education, to teach the children great opportunities for the children to come in and see what the workplace is like and why they are needed in the workplace. Partnerships that encourage these children to pursue STEM disciplines. Companies can recruit more women and ensure they have the right policies and programs to support women or even practices that allow them to thrive in the organization.

P7 stated that HR could help support more women by sending them to the same conferences as men and giving them the same opportunities:

Do you know what they can do? Men have many women on their teams, and they want to know how to support them better. I am not saying every company needs to send their men to women's conferences and offer resources for women, but showing them for men too, like how can they better support the females in their workforce or on their teams.

P8 said she believes that having health and life insurance benefits will help recruit women to O&G and be more progressive in their practices:

I think you become more progressive in the sense of having comparable benefits or support that some other industries have; I think while you know, I love oil and gas, unfortunately, they are kind of in the archaic, you know, Stone Age as far as being progressive, about anything. You could try stuffing women in there, but they will leave. The quality of life may be, or if they want to start a family, it is just not there. So, to improve. Oil and gas must step up to the 21st century.

P9 stated that women will have an easier time advancing if they are in the field as much as they are in the office:

We have way more female leaders in the offices than in the field. I want to see women outside. We need to get women into the engineering part of it. Just being out there and talking about it, especially now, to support each other and ensure it paves the way for the next generation.

P10 said she believes that education has a large part in recruiting women to O&G and having a mentor within the company to help show what value they have in the company:

A big part of it is grooming them young, and companies can fund STEM projects or science centers. So, starting those young and getting them interested is a big deal. Then again, if we can get some of those men at the top to advocate for women, the true believers who see the value in them, they can pull from the top up and get more women involved or promoted. Those women will also go to work and tell their friends about it; it just becomes less foggy, the whole idea of being in oil and gas.

P11 stated a simpler but effective approach to retaining women in O&G: “They need to identify careers and then adequately train the women.” P12 elaborated on this statement by adding that there will be more women in the workforce, and O&G needs to attract them: “Well, I think they need to seek out women to hire, and I know from the younger generation’s perspective that more girls will be willing and able to work.”

According to the participants, most HR departments need to improve their tactics to hire and keep women on the job. According to the participants, HR needs to follow HRD theory by doing what is best for all employees. The responsibilities of HR are also different from social identity theory by keeping all participants equal and addressing all cultures within the company.

Summary

This chapter began with a detailed analysis of the data collected in each semistructured interview, which served as the foundation for the study. The major themes identified in the data focused on gender bias, authenticity, and advancing women in O&G. Other themes that emerged were work and home life balance, social identity theory, the good ole boys club, no female accommodations on oil rigs, women not selected for leadership roles, pay inequality, male attitudes, women being biased against women, women not experiencing biases, diversity, inclusion, human resource theory, and ending gender bias. Participants also shared thoughts on authenticity and advancing women in O&G. In Chapter 5, I summarize the findings and implications related to gender bias, authenticity, and advancing women, the limitations of the study, and the recommendations for future research.

Chapter 5: Discussion, Conclusions, and Recommendations

This qualitative, descriptive study analyzed gender biases, authentic leadership experiences, and advancing women into leadership roles in the U.S. O&G industry. The theoretical frameworks examined in this study were HRD theory and social identity theory. HRD theory is where both the HR department and employees believe that it is the responsibility of the HR department to provide the rules, procedures, and training for the employees as well as to create a diverse and inclusive workforce. Social identity theory is where people act in specific ways at work because of their cultural background. I investigated how women leaders in O&G respond to gender biases, how women lead authentically, and how they believe other women will advance to leadership roles. The descriptive study provided insights and perspectives from 12 participants meeting the criteria (Appendix A).

This chapter discusses the findings in connection to the research questions, a comparison to current literature, a discussion of the limitations identified in the research, a discussion providing a view of the findings through the theoretical analysis, and recommendations for future research that enhances understanding in the fields of women leaders, O&G, gender biases, authenticity, and advancing women to leadership roles,

Summary of the Study

I conducted semistructured interviews with 12 women leaders in the O&G industry who shared their experiences of gender bias, leading to the authenticity and advancement of women in oil and gas (O&G). The data analysis revealed overarching and subthemes. All themes and subthemes were reinforced with direct quotes from the in-depth interviews. I presented themes to display a pattern, relationship, and alignment to the research questions. The themes identified helped me decipher what gender biases were most prevalent in O&G. Most of the issues with

women leaders in O&G is that they feel that the implementation of diversity and inclusion factors are the responsibility of the HR department and gender biases are also influenced by the cultures of employees. The cultural element opens to social identity theory.

Brief Overview of the Problem

Women executives encounter macro-level challenges such as recruitment, retention, and maintaining a career in O&G. Women also face problems with belonging and gender prejudices. Women face organizational obstacles and challenges such as modifying their personalities, being underrepresented in their organization, unequal compensation, discriminatory stereotypes, and scarcity of resources (Coleman, 2019; Hoffman & Friedman, 2018; Murphy et al., 2021; Shortland, 2018; Srinivas et al., 2020). Women in the O&G industry have also confronted nonorganizational deterrents such as work-life conflict, harassment, and being regarded as poor advocates for their necessities (Coleman, 2019; Hoffman & Friedman, 2018; Murphy et al., 2021; Shortland, 2018; Srinivas et al., 2020).

Women leaders also need help to achieve leadership status and professional improvement challenges (Hoffman & Friedman, 2018; Murphy et al., 2021; Shortland, 2018; Srinivas et al., 2020). Women leaders experience gender stereotypes, cultural constraints, leadership perceptions, discrimination, and lack of sponsorship, mentoring, and support. Male organizational culture, salary inequality, unequal measures, and workplace harassment have also been issues (Coleman, 2019; Hoffman & Friedman, 2018; Murphy et al., 2021; Shortland, 2018; Srinivas et al., 2020). Studies on female leadership impediments are exhaustive; however, little literature has investigated the relationship between organizational and societal cultural hindrances to women seeking leadership roles in the O&G industry (Diehl & Dzubinski, 2016).

The problem addressed in this study was the need for more information about women in

leadership roles in O&G companies. Many resources are available concerning gender biases, authenticity, and advancing women in other types of businesses. However, it is minimal concerning O&G. There is also little information about any workers in O&G.

Purpose Statement

The purpose of this qualitative descriptive study aimed to explore women leaders in the O&G industry concerning underrepresentation. The study also concentrated on gender inequality experienced by women leaders in O&G using Diehl and Dzubinski's (2016) three levels of gender bias: macro, meso, and micro. The study was a descriptive qualitative approach that analyzed women leaders in the O&G industry who faced organizational and nonorganizational leadership barriers and suggested improvements for further research. The study also accumulated suggestions by investigating the connection between corporate and nonorganizational obstacles to women who pursued leadership roles in the O&G industry. Companies were examined on how they developed programs, yet women in O&G still needed help to achieve leadership roles. Finally, the study indicated if women leaders could lead authentically and what O&G companies were executing to get more women interested in O&G careers. The data assemblage consisted of face-to-face interactive interviews with 12 women who maintained upper or lower-level leadership positions in O&G companies.

Research Questions

I investigated the relationship between participants' biases as leaders and authentic leadership. The three research questions guided each tenet of this research:

RQ1: What are the lived understandings of women leaders in the O&G sector regarding gender inequalities?

RQ2: What are the lived understandings of women leaders in the O&G sector regarding individual authenticity?

RQ3: What are the solutions to advance women leaders in the O&G industry?

Review of the Study Methodology & Design

In this descriptive qualitative study, I collected data from 12 participants about their experiences and interactions as leaders in O&G concerning gender bias and authentic leadership. Data were also collected on how oil companies might facilitate and support women's advancement. I conducted interviews to gather perspectives on the factors influencing leadership, such as gender bias and authenticity. Men have been the dominant gender in the O&G industry due to the disposition of the sector (Shortland, 2018), as O&G fieldwork can sometimes be dangerous, and men sometimes want women to refrain from participating in the hazardous portions of the job (Torraca & Fanzeres, 2021).

Discussion of Findings

All 12 participants described facing gender bias at some point in their careers. The three issues with gender bias in O&G were trouble concerning women's diversity and inclusion, male attitudes, and what participants called the good ole boys club. The findings also aligned with the literature review that stated gender bias in O&G. Ten out of 12 participants shared information about diversity programs in their company.

Research Question 1

The study demonstrated that women leaders in O&G experienced gender inequalities at some point in their careers. Ten participants in this study discussed how at one time in their careers they faced different gender biases. The other two participants explained that gender biases were never a problem in their careers. Historically, leaders in the U.S. O&G industry have

been primarily White, male, well-educated (in terms of academics or common knowledge of the business), and wealthy (Shortland, 2018). The participants' lived experiences align with the literature; most leaders in O&G fit the description of being White, male, well-educated, and wealthy.

Since the mid-20th century, a growing number of women have become interested in the O&G industry: worldwide, 22% of O&G workers working for over a decade in the O&G sector are female (Hoffman & Friedman, 2018). Approximately 78% of O&G workers with 10 years or more are male, so it was no surprise how difficult it would be to find female participants (Hoffman & Friedman, 2018). Gender bias among O&G workers is less prevalent at higher seniority levels in their company. Recruitment, retention, maintaining a career in the industry, a sense of belonging, and gender biases toward women are an issue that HR must address for O&G companies to thrive (Hoffman & Friedman, 2018; Murphy et al., 2021; Shortland, 2018; Srinivas et al., 2020).

Ten out of 12 participants stated that once they reached leadership status, they no longer faced gender bias. Many organizations have begun implementing diversity training (DT) or coaching to encourage equality. In these training pieces, diversity emphasizes the moral implications of one's behavior. DT decreases implicit prejudice and furnish strategies that are helpful in everyday life (Ehrke et al., 2020). Ten out of 12 participants stated that there was a diversity and inclusion program in their organization, but the program needed to be implemented with more fidelity and detail. The information gathered in the study from the participants supports the literature in stating that diversity programs exist in O&G and that companies are interested in having a diverse workforce and want more women involved. However, the quality of diversity programs should be further discussed in the literature.

According to the literature, the only successful programs are programs in which an individual or committee heads and participants face the consequences from their supervisors if the program is not followed (Williams et al., 2014). Some O&G employees claim that diversity statements and programs are implemented only to make the public believe that the company is expressing forward thinking (Williams et al., 2014). While the participants stated that the programs are insufficient and need to be revamped and headed by HR, the quality of the programs also needs to be further researched.

Female O&G executives encounter macro-level challenges in recruitment, retention, maintaining a career in O&G, a sense of belonging, and gender prejudices. For example, women have been required to modify their personalities to achieve job advancement, have been underrepresented in their organization, have received unequal compensation, have been confronted by discriminatory stereotypes, and have had to deal with a scarcity of resources (Coleman, 2019; Hoffman & Friedman, 2018; Murphy et al., 2021; Shortland, 2018; Srinivas et al., 2020). Some participants shared how they had to change how they acted in front of their male peers to be accepted into the company, such as during extracurricular activities outside of work. However, women in the O&G industry also confront nonorganizational deterrents such as work-life conflict, harassment, and being regarded as not effective advocates for their necessities (Coleman, 2019; Hoffman & Friedman, 2018; Murphy et al., 2021; Shortland, 2018; Srinivas et al., 2020). Participants discussed how women seem to be the ones who are given the balancing act of working in the home and working on the job. Female leaders have also encountered barriers preventing them from achieving leadership status and professional improvement (Hoffman & Friedman, 2018; Murphy et al., 2021; Shortland, 2018; Srinivas et al., 2020).

The organizational culture that supports men more than women, salary inequality

between men and women, unequal measures, and workplace harassment are also issues (Coleman, 2019; Hoffman & Friedman, 2018; Murphy et al., 2021; Shortland, 2018; Srinivas et al., 2020). Challenges are likewise at the micro or individual level because of work/home conflict and the glass ceiling. Studies on female leadership impediments are exhaustive; however, little literature has investigated the relationship between organizational and societal cultural hindrances to women seeking leadership roles in the O&G industry (Diehl & Dzubinski, 2016). All participants discussed how they faced gender biases at some point in their careers, whether through pay, harassment, or other issues.

Last, five participants explained that they had faced no gender biases in their leadership positions. This information is a different perspective compared to what has been found in the extant research. The literature shows that gender biases are everywhere, such as that men dislike women when others show women as successful leaders and see women as less effective in leadership roles (Diehl et al., 2020). The literature also indicates that organizations have shown favoritism towards male employees for evaluations and rewarding them for their work, while women have fewer opportunities and lower performance ratings. Finally, gender biases may influence women's standards in performance and evaluations (Diehl et al., 2020). However, 24% of the participants stated they did not experience gender biases during their careers.

Another thing to ponder is that, according to Diehl et al. (2020), "no instrument exists to measure women leaders' perceptions of gender bias" (p. 249). How would we know what women leaders think about gender biases if, as of 2020, no instrument existed to measure this topic? An instrument must be created and studied to help understand why gender biases continue to exist.

Research Question 2

The 12 participants in this study discussed how they utilized authenticity in their leadership roles to motivate their employees. The central part of authenticity was being genuine to everyone involved in the company. This is important because, as found in the literature, Kirkpatrick (2021) stated that leading with authenticity is when a leader brings their complete and truthful self to work. Participants also said leaders needed to be self-aware and genuine, as found in Kirkpatrick's (2021) work.

Many explain how authenticity means being true to yourself and others in everything you do. Eleven out of the 12 participants' experiences were similar to those found in the literature and the framework of authenticity because they described how they want to be genuine with their employees. However, one participant explained how she conformed to acting like "one of the guys" to fit in with the men in the industry. The O&G work environment contributes to this type of experience because of what the participants call the good ole boys club. In this club, men gather for outside-of-work activities like hunting, going to bars/clubs, fishing, playing golf, shooting, and discussing business. Some participants explained how they would like to participate in these activities but would not feel authentic because they would have to change their tastes to fit in with men and that it would not be socially acceptable.

According to the literature, authentic leadership benefits women leaders by letting women exhibit solid values and intense awareness of their leadership. Therefore, women leaders can develop trustworthiness in their relationships with coworkers (Kim et al., 2021). In agreement with the literature, the participants who stated that they lead authentically felt they had a trustworthy relationship with their employees. Kim et al. (2021) also showed that having authentic leadership also increases positive employee performance. All participants stated that

their companies were doing well in O&G and experiencing growth. Two participants stated they must put more effort into having employees and other O&G workers follow their leadership goals. Meanwhile, 10 participants felt they did not have to change their personality to lead others. This is important because, as found in the literature, the same traits are also expected from male leaders; however, women must put extra effort for employees to follow what they desire for the company they lead.

The literature also shows that undermining support for affirmative action reduces female underrepresentation in administration, and women function acting like they do not need affirmative action. In agreement with the literature, two participants stated that women will transform their talents to look more like skills men utilize, such as not being as nurturing, not being sympathetic towards others, and being more straightforward with directions (Lammers & Gast, 2017; Perks & Schulz, 2020). Women leaders in the O&G industry also encounter nonorganizational barriers such as work-life conflict, harassment, and being regarded as poor advocates for their necessities (Coleman, 2019; Hoffman & Friedman, 2018; Murphy et al., 2021; Shortland, 2018; Srinivas et al., 2020).

Many studies exist on how authenticity works in leadership roles. However, very few studies demonstrate authentic leadership in O&G, whether as leaders or men or women. All participants commented on how exciting it was to finally have research conducted about something that is not only about O&G but about women being authentic in O&G. Participants were also excited about how the study would contribute to the existing literature regarding authenticity. Much of the current literature consists of what authenticity is and the different meanings of authenticity.

Research Question 3

The 12 participants in this study shared ideas on what should be done by O&G companies to advance women into leadership roles. Many participants feel that the HR department is responsible for creating opportunities for women to succeed in their careers. Participants could feel that HR is liable because of recent expansions in the functioning of human resource departments in large corporations (HRD). HRD theory stresses that HR departments no longer only focus on payroll, training, and other positions to satisfy employees, but also function to empower employees to become better qualified, fulfill their aspirations, and realize their potential (Chan, 2022). The participant's views and information from the literature (Chan, 2022) are congruent as many businesses besides O&G have adopted HRD theory to restructure and retrain their HR departments.

Some of the participants also brought up how O&G companies are having difficulty having anyone apply for jobs in O&G. The issues are trying to get women to start at entry-level positions in O&G. Many women turn away from the opportunity because of unequal pay, work/home life balance, and the reputation of the O&G culture. Women could also be turned away from O&G because of social identity theory.

Social identity theory explains how individuals create and define their place in society. According to this theory, three psychological processes are central: social categorization, social comparison, and social identification. Social identity theory assumes people base their identities on social groups and traits (Scheepers & Ellemers, 2019). Many participants and I were taught that O&G was not a place for women. Considering that only 15% of women in 2020 graduated college with engineering degrees, most women already feel that they do not belong in a STEM occupation (Sloan, 2020). P6 commented that girls needed more exposure to STEM ideas to

become interested. She also stated that O&G companies would need to invest in providing programs in schools to attract future employees.

According to participants, another issue with advancing women in O&G is that women face different expectations than men. For example, women tend to get paid less, yet they are sometimes the breadwinners of their household. These women usually work full-time at work, go home, and work full-time in the home. Most men usually only have the part-time responsibility of having to tend to children. According to the literature, this happens. Diehl et al. (2020) state that women are seen more as the ones to take care of family situations than men. It is likely because of the increase of mothers in the workforce. Women entering the workforce means that their responsibilities at home have continued. Men still expect women in many cultures to complete household tasks and care for children (Diehl et al., 2020).

According to participants, companies have diversity programs to help advance women, varying from sufficient to nonexistent. None of the participants stated that their program could have been more excellent or outstanding. The literature suggests that diversity programs were being used with fidelity in companies. DT is any discrete program or program that aims to influence participants to increase their positive or decrease their negative intergroup behaviors. For example, someone that is less prejudiced or displays discrimination towards others is perceived as different in their group affiliation(s) (Ehrke et al., 2020). Many organizations have begun implementing DT or coaching to encourage equality. In these training pieces, diversity emphasizes the moral implications of one's behavior. DT decreases implicit prejudice and furnish strategies that are helpful in everyday life (Ehrke et al., 2020). The authors in the literature review acknowledge that this aspect needs further research, and it is worth following to see if more diversity is constructed in our society and could end gender biases. According to the

participants' information, it was suggested that it was only "sometimes" that diversity programs were implemented with fidelity and that these programs did not change the aspect of gender biases and inequality in the company.

Some participants also shared how women participated in gender bias towards women. For example, three out of 12 women mentioned women being biased against other women. This is referred to as the queen bee effect. The queen bee effect is where one female is in the group of leaders, and no other women are allowed to participate. The literature also discusses how some women in leadership positions distance themselves from lower-level women. They may also hesitate to participate in programs that help lower-level women in their organizations. Some women believe they receive more mistreatment from women leaders than male leaders, so lower-level women do not necessarily respect and get along with women leaders (Diehl et al., 2020). Most of the participants did not ever deal with the queen bee effect, but this could be investigated further in future research.

Discussion of Findings Related to the Theoretical Framework

The two theoretical frameworks used in this study were HRD theory, which discusses how employees believe that providing training, rules, regulations, and procedures is the responsibility of the HR department. HR is also responsible for monitoring employees to ensure they follow company protocols. Many of the participants feel that it is the responsibility of HR to make sure that all aspects of the company are running smoothly. The participants also think that the DT programs would be more successful if HR leads these programs.

The other theoretical framework discussed is social identity theory, which observes how individuals create and define their social niche. Answers from the participants tie into one or both theories. For example, all participants believed that HR was responsible for providing DT to

combat gender bias. According to HRD theory, this would be correct. Participant 6 gave an example of how social identity theory influenced how men displayed gender biases towards her because she believed that men learned this attitude in their culture.

Implications

The findings of this study replicate what was known about what women leaders face in O&G jobs, including evidence of gender bias, such as pay differences, male attitudes, good ole boys club, and work and home life differences. The findings suggest that many O&G companies should implement an extensive diversity and inclusion program. Also, some oilfield rig locations now provide female accommodations, such as room and board and PPE equipment. Participants have also provided insight on how many of their male counterparts are respectful, but this applied to women only when they reached the leadership role.

Recommendations for Practical Application

First, interviews must be conducted with a more extensive study sample to obtain information. Even though it was challenging to enroll participants, this should be done to get a broader perspective of O&G, identify patterns of gender biases, and identify ways of authentic leadership. Another recommendation is to build on this study by following up longitudinally with the 12 interviewed participants; for example, follow-ups could occur yearly to see if gender biases have happened or if the participant's view on authenticity has changed. The findings of such a follow-up study would provide a necessary addition to the knowledge concerning women leaders, gender bias in O&G, authentic leadership, and advancing women, as the participants for this dissertation study expressed gender biases and how they lead with authenticity.

Limitations

Female leaders have participated in macro-level challenges such as gender stereotypes,

cultural limitations, and leadership perceptions. Meso-level challenges for women include discrimination and lack of mentoring, sponsorship, and support. Women have tolerated organizational culture, salary inequality, unequal measures, and workplace harassment. Challenges are likewise at the micro or individual level because of work-life conflict and the psychological glass ceiling. Female leadership impediments have been studied exhaustively; however, only some sources have examined the association between organizational and societal cultural obstacles for women pursuing leadership roles in the O&G industry (Diehl & Dzubinski, 2016). Limited studies also exist on how O&G companies consider the organizational and societal cultural barriers to women pursuing leadership roles in their respective companies. For example, Diehl and Dzubinski (2016) noted there are limitations to analyzing female leadership barriers, such as organizations and professional women that require a multipronged approach. Rules include career planning and career development guidance.

Rules also exist regarding research on mentoring and coaching for persisting in progressing into leadership roles (Brieger et al., 2017). According to Brieger et al. (2017), a future investigation should examine whether female leaders support the advancement of female employees. A further limitation is the need for an expansive time-series database to manage a possible mutual relationship between gender-related organizations such as the O&G industry (Brieger et al., 2017). Limitations also address investigators need to comprehend differences in candidate evaluations using administration jobs in various sectors (Fleming et al., 2020).

According to Chuang (2019), continued measures are necessary to establish whether research creates a difference in gender equality at top-level management and women's ongoing women's DT program development for future work. Specifically, a reflection that discusses its significance to women's balance in senior and leadership roles in the workplace might be

worthwhile (Chuang, 2019).

Chapter 1 identified the need for testimony on how women leaders function in O&G and how gender biases affect their leadership. The literature search for Chapter 2 showed that many female leaders have issues with gender biases in society and at work. However, the peer-reviewed literature should have specifically investigated how men and women can correct these issues and how women can lead authentically despite the barriers. Another limitation is that women leaders could fear losing their privileged status for their answers in the interview or questionnaire. Women might fear losing their jobs because of how they answer. Female leaders could also provide solutions that could be more truthful. For example, women could state that there is no gender bias in O&G and not admit that they must conform to male leadership qualities. This study focused on how gender inequality limits women in the O&G industry; however, it is revealed that women provoke society's micro levels.

According to some cultures, women conform to gender roles and stereotypes in a male-dominated work environment. Another limitation of the study could be that more women must be interviewed or answer a questionnaire. Eventually, more than 12 women would need to be interviewed about their lives in O&G leadership. The factor that was not expected was whether women create gender inequalities in O&G. Recommendations for future research are enclosed to examine authenticity and whether women could transcend gender inequality and better control their lives. Finally, this study concentrated on the perceptions of female O&G executives regarding their authenticity in the workplace. Because O&G companies do not desire to understand how others perceive them, this could be seen as a negative aspect. Other limitations of the study include the number of participants that were interviewed. Although 363 potential participants were contacted, only 12 ultimately signed the consent form and completed the

interview, a recruitment and participation rate of 3.3%.

Researchers who want to duplicate this study would need help finding willing participants and following through with participation. For example, out of the 363 women I emailed, only 41 (11.3%) responded to the message and 27 (7.4%) signed consent forms. In addition, as the study indicates, only 12 (3.3%) completed the interview portion of the study. However, only 10 participants were required for the study, so it was beneficial for me to get two more participants.

Recommendations for Future Research

The literature search for this study strongly suggested a need for more studies about workers involved in O&G and how male leaders in O&G view gender bias in the industry. DT programs must also be studied for how they are taught and if all employees follow them. Another area in need of future research is determining why many of the women contacted did not answer the LinkedIn message used to try and recruit them; for example, several potential participants asked about being confidential and what it entailed but then did not respond further, suggesting that these participants wanted to talk but feared the possible consequences. Therefore, researchers should study why women fear potential consequences from describing their experiences working in O&G.

The study results suggest O&G companies should create and test diversity programs to determine their effectiveness. Many O&G companies still need a diversity and inclusion program, or if a program exists, it likely needs to be more practical and extensive in helping employees. After all, one participant stated that the diversity program motto that she follows is, “Do not be a jackass.”

Conclusion

In this qualitative study, I examined how gender biases and authentic leadership affected women leaders in O&G. Through semistructured interviews of 12 women leaders in O&G, I elicited participants' experiences with gender biases and how they lead with authenticity. I also delved into the impact of how gender biases fit into social identity theory and HRD theory. I intended to expand on how women leaders function in O&G.

The guided protocol I used correlated with the three research questions on gender bias, authenticity, and advancing women in O&G. The study's findings reflect the delicacy of the relationship between the women leaders of O&G and the companies they represent. They also suggest that women leaders display gender bias in O&G, and O&G companies must create changes to encourage women to join the industry. Changes also need to be made to elevate women to leadership roles. These goals could be achieved by creating a nongender-biased environment and having women leaders lead with authenticity.

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Appendix A: Interview Guide

Topic: Women Leaders in the Oil and Gas Industry (O&G): How they deal with underrepresentation and leading with authenticity due to gender bias in the macro, meso, and micro levels of society.

Research Questions:

RQ1: What are the lived understandings of women leaders in the O&G sector regarding gender inequalities?

RQ2: What are the lived understandings of women leaders in the O&G sector regarding individual authenticity?

RQ3: What are the solutions to advance women leaders in the O&G sector?

Research Supplies:

Personal computer or laptop with Zoom capabilities, electronic copies of the interview protocol, and informed consent copies. For I - additional paper for notetaking (if more space for notes is needed), a clipboard to provide a hard surface for writing notes, pens, or pencils. Nvivo and Qualtrics accounts.

Research Timing Considerations:

The interviews will need to occur during March and April.

Interview Protocol and Introduction

[XXXXXXXXXXXX]. [XXXXXXXXXX]. Thank you for taking the time to interview with me today. I am a doctoral candidate at Abilene Christian University in Dallas, Texas. I am working under the direction of Dr. Karmyn Downs at the Abilene Christian University School of Organizational leadership. This project has been reviewed according to the Abilene Christian

University Review board procedures to ensure protection from harm and protection for your personal information.

This interview will only be used for this research project, publications, and presentations.

Do you have any questions about the project before we begin?

Research data will be collected from March 13, 2023, to April 13, 2023. Participation is voluntary, and you have no direct benefits if you decide to participate. If at any point during the interview, you wish to withdraw for any reason, there is no penalty.

Do you have any questions about voluntary participation? Before we begin, please confirm by reading and signing the informed consent received through email, verifying that you understand the purpose today and are willing to participate in the conversation.

To be sure I have an accurate record of our conversation. I am going to record our discussion through Zoom. My dissertation chair, Dr. Karmyn Downs, and I will be the only people who can hear the recording. All data and recordings will be kept in a secure location for no more than ten years following the successful defense of the dissertation. Again, to be clear, no personal names or company names will be used in any of the notes, documents, narratives, or databases.

Start recording on Zoom.

Today is (Date/Time), and I am speaking with (XXXXXXX). I am going to be asking you some questions. Again, if there is anything you do not feel comfortable answering or do not know the answer to, just let me know, and we can move on to the other questions. Before we begin, please confirm again that you understand the purpose of today and are willing to participate in the interview.

Interview Guide

Demographics

Gender of the individual: Female

Positions in O&G:

Upper management - individuals and teams that make the primary decisions for a company (examples are C-level management, CEO, or CFO) (Umuteme & Adegbite, 2022).

Middle Management - people that are in charge of inventory, safety, and security and help restore corrective actions before a technical failure occurs (ex., branch manager) (Umuteme & Adegbite, 2022)

Lower management - people who handle the daily operations of the company. Examples are service supervisor, shop foreman, office manager, rig crew leader, accounts officer, and sales supervisor (Umuteme & Adegbite, 2022)

Are you a Leader of People? Yes / No

Years in the industry: 0 to 5

6 to 10

11 to 15

16 - 20

21 - 25

26 - 30

31+ and higher

Basic Questions

1. If you are a leader of people, consider the employees who report to you:
 - 2a. How many?
 - 2b. How many are men?
 - 2c. How many are women?

Gender inequality

- 0. Have you experienced gender biases while in your current role? **RQ1 (SIT)**
 - 5a. Do you experience resistance when you are leading male coworkers? **RQ1 (SIT)**
 - 5b. How do you deal with male coworkers if they do not listen to your suggestions? **RQ1 (SIT)**
- 0. What biases have you experienced in O&G, if any? **RQ1 (HRD MESO)**
- 0. How do you think we can stop gender bias at work? **RQ1 (HRD MESO)**
 - 7a. In society? **RQ1 (SIT MACRO)**
- 0. Does your company recognize gender bias by having diversity and inclusion programs? **RQ1 (HRD MESO)**
 - 8a. If so, what programs do they have? **RQ1 (HRD MESO)**
- 0. In your opinion, what is the most significant barrier for women in O&G? **RQ1 (HRD MACRO)**
- 0. What (if any) is your most significant barrier in O&G? **RQ1 (HRD MICRO)**

Authentic leadership

- 0. What does authenticity look like to you? **RQ2 (SIT)**
- 0. When do you feel most authentically yourself? **RQ2 (SIT)**
- 0. What are you using to ensure that your leadership practice is authentic? **RQ2 (SIT)**

Attracting Female Leaders to O&G.

0. Why do you believe there are fewer female leaders in O&G? **RQ3 (SIT)**
0. What can companies do to improve the numbers of women in O&G? **RQ3 (HRD MESO)**

Thank you for meeting with me today. I appreciate your help. If you have any questions about the research, please get in touch with me at xxxxxxxx or xxx-xxx-xxxx.

Appendix B: ACU IRB Approval Letter

4/3/23, 3:26 PM myACU Mail - IRB-2023-46 - Initial: Initial - Exempt – ACU

Michelle Ballard xxxxxx@acu.edu

IRB-2023-46 - Initial: Initial - Exempt – ACU

do-not-reply@cayuse.com <do-not-reply@cayuse.com> Tue, Mar 14, 2023 at 7:59 AM

To: xxxxxxxx@acu.edu, xxxxxxxxxxxx@acu.edu

Date: March 14, 2023

PI: Michelle Ballard

Department: ONL-Online Student, 17250-EdD Online

Re: Initial - IRB-2023-46

Women Leaders in Oil and Gas

The Abilene Christian University Institutional Review Board has rendered the decision below for Women Leaders in Oil

and Gas. The administrative check-in date is --.

Decision: Exempt

Category: Category 2.(i). Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording).

The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects.

Research Notes:

Additional Approvals/Instructions:

If at any time the details of this project change, please resubmit to the IRB so the committee can determine whether or

not the exempt status is still applicable. All approval letters and study documents are located within the Study Details in

Cayuse IRB.

The following are all responsibilities of the Primary Investigator (PI). Violation of these responsibilities may result in

suspension or termination of research by the Institutional Review Board. If the Primary Investigator is a student and fails

to fulfil any of these responsibilities, the Faculty Advisor then becomes responsible for completing or upholding any and

all of the following:

- When the research is completed, inform the Office of Research and Sponsored Programs. If your study is Exempt, Non-Research, or Non-Human Research, email orsp@acu.edu to indicate that the research has finished.
- According to ACU policy, research data must be stored on ACU campus (or electronically) for 3 years from inactivation of the study, in a manner that is secure but accessible should the IRB request access.
- It is the Investigator's responsibility to maintain a general environment of safety for all research participants and all

members of the research team. All risks to physical, mental, and emotional well-being as well as any risks to confidentiality should be minimized.

For additional information on the policies and procedures above, please visit the IRB website <http://www.acu.edu/community/offices/academic/orsp...> or email orsp@acu.edu with your questions.

Sincerely,
Abilene Christian University Institutional Review Board