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Identifying factors that enhance or diminish retention of black female engineers in the oil & gas industry

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IDENTIFYING FACTORS THAT ENHANCE OR DIMINISH RETENTION OF BLACK FEMALE ENGINEERS IN THE OIL & GAS INDUSTRY

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Abstract

This study identified factors affecting the retention of Black female engineers in an oil & gas organization in southern California. Twelve current and former employees were interviewed to gather their insights about factors that contribute to and detract from the retention of Black female engineers. Study findings indicate that retention of Black female engineers in the oil & gas industry is associated with their career development and achievement, enjoyment of the work, compensation and opportunities, and support from others. Retention can be further aided by supporting their assimilation into corporate environment, assuring equitable career advancement, and assuring supervisors are skilled and culturally sensitive. Retention of these employees appears to be eroded by lack of support for development, diminished mental and emotional wellbeing, racial discrimination, lack of leadership and employee diversity, problems with their role, and lack of support from others. Recommendations are outlined for Black female engineers, organizations, and organization development practitioners.

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Chapter 1

Introduction

Researchers and business professionals have been giving more attention to improving organizational diversity and inclusion in recent years (Scanlon, Zupsansky, Sawicki, & Mitchell, 2018; Shore et al., 2011; Theus, 2018). This focus is warranted, as diversity and inclusion has been associated with better employee job satisfaction, organizational commitment, and stay intentions as well as improved innovation and performance, and the ability to reach more diverse markets (Ferdman, Barrera, Allen, & Vuong, 2009; Meier, O'Toole, & Goerdel, 2006; Pitts, 2009; Shore et al., 2011; Vohra et al., 2015). Consequently, many organizations are seeking to expand their diversity and inclusion programs and recruitment efforts accordingly have focused more on acquiring diversity expertise (Scanlon et al., 2018; Theus, 2018). Legislatively, diversity and inclusion also have gained increased attention. Although this has had some positive effect, organizations in general still must make extensive changes if they are to instill diversity and inclusion behaviors deeply in their culture and values and reap the rewards of doing so (Choi & Rainey, 2010; Cobert, 2016; Mor Barak, 1999; Riccucci 2002). Specific to the present study, retention of diverse employees is considered an important strategy for achieving improved organizational efficiency and diversity while reducing the costs of employee turnover. On an individual level, improved diversity also makes sense in terms of corporate social responsibility, as such aims enhance the career success of diverse employees (Cohen, Blake, & Goodman, 2016; Sabharwal, 2015; Sabharwal, Levine, & D'Agostino, 2016; Tett & Meyer, 1993).

It's not enough to include diversity in the organization's mission statement; organizations must embrace the practice of hiring, developing, mentoring and promoting

ethnically diverse employees to higher level positions. While some organizations are recently recognizing this, other organizations have been doing this for several years, such as Sodexo, which upholds a firm commitment to fostering a diverse, inclusive, and equality minded culture. For example, it operates a long-standing mentoring program for females (Hunt, Layton, & Prince, 2015). Still, like many organizations and industries, senior executives and board members in large US oil & gas organizations are largely made up of white men (Lott, 2009).

There is ethnic disparity in the leadership levels between the Board of Directors of an oil & gas company and its front-line employees. The Board Members represent ethnic equity. The firm's recruiters are skillful at sourcing, recruiting, and selecting black women in STEM for entry level engineer roles; however, there are very few black women in leadership roles in between the entry level engineer and the board of directors. This is particularly troubling because since 2014, a refinery in southern California lost four recently hired Black female engineers.

Study Purpose

The purpose of study was to identify the factors that influence the retention of Black female engineers in an oil & gas organization in southern California. The long-term goal that extends beyond this study is to create opportunities for retention and engagement of Black female engineers at an oil &gas refinery in southern California. Two questions were explored:

1. What factors and events enhance stay intentions of African American female engineers?
2. What factors and events contribute to turnover of African American female engineers?

Importance and Significance of Research

This study will contribute to understanding the organizational conditions that can provide greater opportunity to retain Black women. Uncovering the factors that enhance or detract from the retention of Black women is anticipated to be of benefit both to oil & gas organizations and to other organizations in STEM that want to find ways to value, respect, encourage, and retain minority women. The present study is particularly important, as there remains growing concern with the low statistics of Black women at the highest-level positions—not only in oil & gas, or STEM careers but in business environments across the board.

A national survey conducted by Bell and Nkomo (2003) found significant differences for African Americans reaching upper-level management positions when compared to their Caucasian counterparts. For instance, African American female managers represented 14%, while their counterparts represented 32%. Similar differences are apparent according to the 2018 U.S. Department of Labor statistics that show African American women represented only 36% in management, professional and related occupations while Asian women and Caucasian women represented 53% and 45% respectively (U.S. Department of Labor, 2018).

This study is also significant because statistics show increasing numbers of people of color entering business environments in the coming years. For instance, research conducted by Catalyst in 2018 projected that between 2016–2026 there will be a 10.8% increase of Black women in the labor force. Because statistics show low numbers for African American women in managerial positions, the lessons learned from this study may help to create work environments that encourage these women to stay in their careers and enjoy the full range of growth and success possible.

The study is an important contribution to a growing body of research about African American women that aims to enhance the understanding and value of African American women both for their own and their organizations' benefit.

Researcher Background

Over a two-year timespan, four Black female engineers walked off their jobs at my employer, sending waves of shock and disbelief through the workplace and leaving me wondering why they did this. I reasoned that we needed their intelligence, work ethic, and perspective to get the best results. They were also friends.

My organization is a highly competitive employer and selects only those engineers with proven track records of successful academic and professional performance. The organization places high value on long-term employment and offers competitive benefits, including pension and profit sharing shaped to entice each employee to stay with the organization to earn them. Our organization's recruiters work tirelessly to find and select the most successful black female engineers in universities and with other employers to join the organization. So, why were these brilliant Black female engineers leaving? I became curious about this phenomenon after the fourth black female engineer submitted her notice of resignation.

I too am a Black female employee. I am an OD practitioner who came on board more than 10 years ago. Although I am not an engineer, during my first two years of employment here, I also struggled with the desire to terminate my employment, as I didn't feel as if I fit here, and I didn't feel valued, heard, included or that I belonged in this white male dominated organization. I felt my skills and talents would be respected elsewhere, even if I had to start all over again. With courage and will, day by day I made it through to 10 years. I also found our firm's Black Employee Network a necessary

support resource for me that I leveraged to increase my level of engagement and sense of belonging.

In these recent years, not only were we losing Black female engineers at an alarming rate, but as a 360-degree feedback coach, I was also privileged to have heard countless White males describe the informal mentoring that they received from some of our senior leaders. The opportunity of doing this research project gave me an ideal opportunity to investigate this phenomenon more closely.

Thesis Outline

Chapter 1 provided an introduction to the study, including the problem background, importance and significance of the research, and study purpose. Chapter 2 provides a review of the existing literature. Key terms are defined and an overview of African American Women in the US workforce is provided. Approaches to retain women in STEM—especially African American women—is also discussed. Diversity and inclusion issues in the oil & gas sector then are outlined. Finally, cases of organizational diversity and inclusion strategies are presented. Chapter 3 is an overview of the research methodology. The research design, research sample, interview plans, and data analysis approach are described. Chapter 4 presents the findings of the study and the data collection results. Chapter 5 presents study conclusions and best practices.

Chapter 2

Literature Review

"Diversity is being invited to the party; inclusion is being asked to dance."

-Verna Myers

The purpose of study was to identify the factors that influence the retention of Black female engineers in an oil & gas organization in southern California. Two questions were explored:

1. What factors and events enhance stay intentions of Black female engineers?
2. What factors and events contribute to turnover of Black female engineers?

This chapter begins with a list of concepts, terms and definitions. This chapter then examines several areas of existing literature including African American women in the workforce, the retention of African American women in STEM and engineering fields, and diversity in the oil & gas industry. The final section presents some cases of organizations implementing diversity and inclusion approaches.

Key Terms

Several terms are central to this study:

1. African American Women (AAW): Women of African American heritage; women who are descendants of African ancestors ("African American," 2019). The terms African American women and Black women are used interchangeable in this study and refer to the same female ethnic group.

2. Black Employee Network: An affinity group at the study organization designed to increase cultural competence of all employees and offer career support to African American women and men.

3. Employee Resource Groups or Affinity Groups: support groups at the study organization designed to offer support to specific groups of employees or designed around specific support types.

4. Diversity: Diversity refers to understanding and recognizing individual differences, including but not limited to race, ethnicity, gender, gender identity, sexual orientation, age, social class, physical ability or attributes,

religious or ethical values system, national origin, and political beliefs (Choi & Rainey, 2010).

5. Inclusion: concepts and approaches of involvement, empowerment, acceptance, and respect, with a focus on honoring the inherent worth and dignity of all people. The aim of inclusion is to allow exploration of individual differences in a safe, positive, and nurturing environment for the purpose of understanding and moving beyond mere tolerance to embracing and celebrating the rich dimensions of diversity contained within each individual (Choi & Rainey, 2010).
6. STEM: science, technology, engineering, and math (Corbett, 2013).

African American Women in the US Workforce

In 2005, women accounted for 47% of America's workforce (U.S. Department of Labor, 1995) and AAW accounted for 8% of all employees across all industries (U.S. Equal Employment Opportunity Commission, 2009). Most interesting for this study is the proportion of AAW in technical industries reported to be 5% of all employees in the professional, scientific & technical services. These statistics reveal that AAW are particularly under-represented in technical industries (Scott, 2011).

The *Status of Black Women in the United States Report* (DuMonthier, Childers, & Milli, 2017) states that black women make up 22% of all women in Professional and related occupations and 28% of all women in service occupations. Pierce, Latz, and Adams (2009) describe that female students that matriculate in engineering are most likely to persist in engineering and do so at rates similar to men. Yet there is a popular opinion that there is a gender gap in persistence in the later years (Corbett, 2013; White & Massiha, 2016). Catalyst (2018) explained that AAW are over-represented in service industries and professions such as clerical and sales positions and under-represented in technical and business industries and positions such as officers, managers, professionals and technicians (Scott, 2011).

Fleming, Ledbetter, Williams, and McCain (2008) explain there is an impending generational paradigm shift in thinking about diversity. Today's engineering students embody diversity as an extension of their home, academic, and social environments. The result is a group of students who show indifference to diversity and the impact it will have on their professional lives. This was not so, even one or two generations of employees ago.

Cheeks (2018) highlighted how her experience in the classroom largely mirrored her experience 10 years later in corporate America, as consistently being one of very few Black women and black people in the room. Over the course of a year, she explored the experiences of 10 women of color before they made it to the c-suite. Almost every woman touched on the idea of finding sponsorship in the workplace who can advocate on your behalf.

Studies of Factors that Support Retention of Black Women in STEM

There are many studies that have examined the challenges of AAW in STEM, each examining an aspect of the issue. For example, White and Massiha (2016) describe that women make up 47% of the total US workforce but are less represented in engineering, computer sciences and physical sciences and that minority women comprise fewer than 1 in 10 scientists or engineers. They also discussed the many challenges that women encounter when pursuing a career in the sciences and further reviews retention theories. They conclude by presenting a framework for persistence into the under-representation phenomenon which notes that retention is affected by student development, which is affected by students' interaction with the institution and faculty. Moreover, they note that students' persisting interest in STEM relies upon positive

attitudes about and commitment to the subject area, positive feelings of being challenged toward growth, and feelings of making progress. Similarly, Rice and Alfred (2014) determined that support elements for African American Female Engineers were found at both at the Microsystems and Macrosystems levels of support; where Microsystems were at the individual level of support and include self-image, determination and perseverance and external factors such as family, mentors, manager support, and the minority network groups are examples of the Macrosystems. Rice and Alfred further describes that women of color are underrepresented in STEM and focus on increasing the pipeline from K-11 through the collegiate domain.

Scott (2011) examined the retention and advancement of AAW into senior leadership positions in high tech companies. She concluded that the following success factors aided these women's advancement: obtaining development plans and opportunities; organizational support (e.g., development programs, mentoring programs); personal development (e.g., developing communication skills, interpersonal competence, technical competence, leadership ability, work ethic, accountability); and others (e.g., personal and professional networks, mentors, God).

Phume and Bosch (2014) conducted a multiple case study to investigate the internal and external factors of six black women in STEM careers and found the greatest determining internal factor of support was self-efficacy. Gibson and Espino (2016) followed eight undergraduate women in engineering and how they understood their race and gender identities in a culture that can be oppressing to women from underrepresented backgrounds. Drury, Siy, and Cheryn (2011) noted that although there is an increasing number of women in STEM fields there are two challenges: retaining them and recruiting them. Female role models are offered as interventions to retaining women who have to

contend with negative stereotypes that cast doubt on their ability to perform well. Glass, Sassler, Levitte, and Michelmore (2013) further noted that women in STEM are significantly more likely to leave their occupational field than professional women, especially early in their career as traditional job rewards fail to build commitment among women in STEM.

Williams (2015) described four biases (Prove-it-Again, The Tightrope, The Maternal Wall, the Tug-of-War) facing all women in STEM and an additional fifth bias (Isolation) facing Black and Hispanic women. These biases are a function of implicit biases and racial stereotypes. After conducting in-depth interviews with 60 female scientists and 557 survey responses, Williams outlined how each bias plays out differently, depending on the woman's race or ethnicity. For example, Isolation involves feeling separate and distanced from others in their organization. This occurs both as a result of women's tendencies to withdraw and others' tendencies to exclude them. For example, in Williams' study, 42% of black women agreed with the statement: "I feel that socially engaging with my colleagues may negatively affect perceptions of my competence," Indicating that isolation may occur due to the woman's concerns. One Black female microbiologist in the study reported, "There are things that people exclude me from because they say, 'Oh, she's going to be the only black person there… just don't invite her, she won't feel comfortable'" explaining how isolation can result from others' perceptions as well. Moreover, nearly half of the black women scientists in Williams' study reported being mistaken for administrative or custodial staff, an experience far less common for the White and Asian women scientists.

Despite these findings, little literature exists on career development of AAW engineers, specifically the personal and structural support, which is the vital link to support AAW engineers in STEM.

Diversity and Inclusion Issues in the Oil & Gas Sector

The battle to attract and retain top STEM talent intensifies in the oil & gas industry. Although the industry has seen an increased representation over the last few decades, the data shows isolation, scarcity of sponsors and mentors, male dominant environments and difficulty with executive presence as common themes that make it challenging for women to enter the industry and grow into leadership roles (Britton, 2018).

Rick, Marten, and Von Lonski's (2017) research found that men and women startoff on equal footing but the percentage of women in oil & gas drops sharply from 25% to 17% in middle management and senior leadership stages therefore women rarely reach the top of the organization. Pasik-Duncan (2017) added that while the oil and gas sector is still male dominated, engineering-minded associations, such as Chevron and Shell, are working to motivate more women to work in the field but gender balance remains an issue that still needs to be addressed.

The oil & gas industry began promoting Corporate Diversity Programs and Gender Equality Programs in areas such as recruitment, hiring and promotion policies, mentoring, affinity groups and diversity training. However, few of these programs have proven effective in achieving gender diversity in the corporate world despite their popularity (Williams, Kilanski, & Muller, 2014). Price (2015) noted that the oil & gas industry has even fewer women than tech, although some companies are paying attention to taking action to recruit and promote women. Finally, Frazier (2017) noted that only

6.2% of workers in oil & gas are African American, compared with 11.9% in the overall workforce and how companies such as Exxon are spending money to deal with the issue.

Factors that Support Diversity and Inclusion in STEM

Hunt et al. (2015) researched why diversity matters to financial performance. The CEO of Sodexo firmly explains its determination to foster diversity and promote equality requires changing the culture, including finding 1000 mentors for females (Landel, 2015).

While many organizations leverage mentoring as a key a factor in supporting diversity and inclusion efforts for STEM scientists, Hund et al. (2018) found that mentors are ineffective for underrepresented groups in STEM fields if they have not received formal training. Ineffective mentoring could lead to increased stress, decreased productivity and loss of talented personnel.

Brown (2017) described Intel's efforts to embark on a new approach to lift morale, move into new segments of the marketplace, enhance productivity and increase overall organization effectiveness by managing diversity differently. In addition, successful technical organizations focus on changing the environment, changing the culture, creating allies and viewing diversity efforts as a business issue.

Analysis of the literature revealed a theme of organizations that are refocusing on inclusion as a strategy to retain women and people of color. Common strategies include mentoring as an intervention lever and bringing awareness to unconscious biases. Dobbin and Kalev (2016) elaborated that after several large high-profile discrimination lawsuits, organizations must tackle unconscious bias with training, testing, performance ratings and grievance procedures as well as methods to get managers on board. Sherbin and Rashid (2017) researched diversity and inclusion initiatives and concluded that diversity programs have little efficacy without inclusion. They further uncovered four levers that

drive inclusion: inclusive leaders, authenticity, networking and visibility, and clear career paths.

McLain, Ashcraft, and Sanders (2016) similarly asserted that to retain more women and minorities in STEM, organizations must recognize and bring unconscious biases into consciousness. They added that such biases tend to seep into recruiting practices (e.g., biased sourcing or job ads), retention factors (e.g., unequal pay, "geek-culture" décor or "bro-grammer" culture), and advancement (e.g., lack of higher up role models). They advise various practices to counteract biases, such as educating top leaders, recruiting and promoting more diverse people, and being accountable for change. An example of this is Deloitte's decision to replace affinity groups for women and minorities with inclusion councils that have white men (Green, 2017). According to leaders at Deloitte, affinity groups are outdated and have failed to achieve the desired outcomes for helping women and minorities develop the relationships and gain the experiences and expertise needed to advance in their careers.

Conclusion

This chapter provided an examination of literature relevant to the retention of AAW in oil & gas industry. The literature review emphasized that women, and especially AAW, are under-represented in the industry, meaning that organizations are failing to fully leverage their available talent (Zhang, Schmader, & Forbes, 2009). This study builds upon what is already known about the retention of AAW by more deeply examining the possible causes that are specific to retaining African American female engineers in the Oil & Gas Industry. Chapter 3 outlines the methods used in this study, including the research design, sample, and procedures related to data collection and analysis.

Chapter 3

Methods

The purpose of study was to identify the factors that influence the retention of Black female engineers in an oil & gas organization in southern California. Two questions were explored:

1. What factors and events enhance stay intentions of Black female engineers?
2. What factors and events contribute to turnover of Black female engineers?

This chapter describes the methods used to collect data for this research study. The research design, research sample, data collection and analysis are described, followed by a summary of the methodology.

Research Design

The present study used a qualitative design, which allowed for the collection of participants' rich stories related to their careers in the oil and gas industry. Kvale (1996) noted that interviews, in particular, allow researchers to capture the essence of the human experience in all its nuances. Analysis of their accounts then was conducted to determine the leader behaviors, programs, policies, and other factors that served to enhance or diminish their desire to stay at their organizations. The results of this analysis may inform decisions related to manager training as well as programs and policies related to employee retention. Qualitative data will be gathered using semi-structured interview questions to allow a depth of inquiry (Creswell & Creswell, 2018).

Research Sample

Sampling considerations within the oil & gas company studied include determining the appropriate sample size, how participants will be found, who will be selected to participate, how the participants will be enrolled into the study, creating the

selection criteria and ensuring participants' confidentiality and consent. Participants met three selection criteria:

1. The participant needed to be a Black female engineer
2. The participant needed to be currently employed or formerly employed by an oil & gas refinery within the previous 5 years.
3. The participant needed to have worked for an oil & gas refinery for at least 2 years.

These criteria assured that participants were able to provide data relevant to the study. The sample size was 12 participants, with six participants who were current employees and six who were former employees.

The contact protocol was the same for both groups. Initial contact was made by email and then followed up with a phone call, when necessary, to schedule an interview. Each participant received an introductory letter email (see Appendix A) that described the study and a consent form (see Appendix B) to participate in the study. Participants were reminded of the purpose of the research, the commitment to confidentiality and that participation is voluntary.

The initial sampling strategy was a convenience sampling approach (Miles, Huberman, & Saldaña, 2013) wherein participants were identified and recruited through the researcher's personal and professional contacts. A secondary strategy was to use a snowball sampling strategy, which Miles et al. described as asking qualified study candidates to nominate other volunteers.

Data Collection

Participants were interviewed using a common set of questions (see Appendix C). It was anticipated that each interview would last 45 to 60 minutes and the focus would be on gathering rich, detailed stories from the participants regarding their experiences at the

study organization. The interview conversations were audio recorded and transcribed to enhance the accuracy of the data collection.

Data Analysis

1. The researcher reviewed her notes and recorded her interpretations immediately after each interview.
2. After the interviews were complete, all transcripts and notes were reviewed several times to gain an impression of the range and nature of the data.
3. Each transcript was then carefully reviewed and meaning units, defined as groups of words or phrases that convey a single, cohesive idea (Miles et al., 2013) were extracted.
4. Meaning units were coded with descriptive codes to reflect the idea reflected in each. Simultaneous coding also was permitted, where each meaning unit could be assigned more than one code, as appropriate.
5. Data were reorganized by meaning unit.
6. The analysis results were reviewed to assure that the descriptive codes accurately reflected the meaning units associated with them. Codes were revised, expanded, or differentiated as needed. Additionally, similar codes were grouped under supraordinate codes.
7. When analysis was complete the number of participants reporting each theme was recorded.
8. A second rater reviewed and validated the results.

Summary

This chapter described the methods used to collect and analyze data for this study. Twelve current and former employees were interviewed to gather their insights about factors that contribute to and detract from the retention of AAW engineers.

Chapter 4

Results

The purpose of study was to identify the factors that influence the retention of Black female engineers in an oil & gas organization in southern California. Two questions were explored:

1. What factors and events enhance stay intentions of Black female engineers?
2. What factors and events contribute to turnover of Black female engineers?

This chapter describes the results of the study. Participant demographics are presented first, followed by a report of the emergent themes for each research question.

Participant Demographics and Career Descriptions

The organization where the study took place is based in California where the Greenhouse Gas emissions requirements that are imposed by the Environmental Protection Agency and California state laws are more stringent than Federal compliance requirements. To ensure its success with staying compliant, the organization has a highly competitive and selective recruitment process for engineer positions. Candidates must meet rigorous qualifications to be offered a position. As one participant described, "a Black woman who's hired here must already be about her business before being offered a position." Another added, "[This organization] does not hire dummies. They hire the best." In total, 15 participants were invited to participate in the study and, since three declined to be interviewed, only 12 ultimately completed an interview. Profiles of the 12 study participants are as follows:

Participant 1 works at an oil & gas refinery in southern California. She has over two years of experience in the oil & gas industry, and three years of fulltime experience. She described her career so far as a long, uphill hike, meaning that it takes a lot of work

to become good in her field, and that she is successively building on what she has done earlier.

Participant 2 left the oil & gas industry after six years at a refinery in southern California. At the time of the study, she was enjoying her new job as a teacher much more than she had enjoyed her job in oil & gas. She described her career in the oil & gas industry as being a nonessential, replaceable cog in a big machine.

Participant 3 works at an oil & gas refinery in southern California. She has four years of fulltime professional experience, two years of which has been in the oil & gas industry. She depicted her career by describing a fixed race where she is severely handicapped compared to her competitors. She explained, “My peers and I are all on the racetrack, but I have a medicine ball that makes my race more challenging. Yet I’m expected to be competitive enough to still be in the race.”

Participant 4 works at an oil & gas refinery in northern California. She has nearly 19 years professional experience, all of which has been in the oil & gas industry. She struggled to depict her career using one image, explaining,

> It's been all over the map in terms of my experiences. There have been positions where I felt super supported and I felt like people really cared if I succeeded and excelled and there's been opportunities where I had to be my own cheerleader completely and find it within myself to just to move on. And I experienced both of those continuously.

Participant 5 works at an oil & gas organization in northern California. She has 14 years of fulltime professional experience, all of which has been in the oil & gas industry. Her image to depict her career is climbing Mount Everest, indicating the hard work to move from the bottom to the top, and the sometimes treacherous paths and frequent headwinds one must face in order to advance.

Participant 6 works at an oil & gas refinery in southern California and has nearly 10 years of fulltime professional experience, all of which has been in the oil & gas industry. She described her career as “flying by the seat of my pants and it’s easy to snap and fall because you are always running and moving and there is never enough time to do the things you want to do to make work better.”

Participant 7 works at an oil & gas refinery in southern California. She has 17 years of fulltime professional experience, nearly six of which have been in the oil & gas industry. She characterized her career as “Fast-paced. The expectation is to be flexible, think on your feet, and hit the ground running and juggling: go, go, go. No breaks, just go!”

Participant 8 works at an oil & gas refinery in northern California. She has 13 years of experience in the oil and gas industry and started her career in a southern California refinery. She describes her career as starting as a little fish in a small pond with limited options and inconsistent support but since she’s now in a bigger pond, she is offered a variety of options for growth.

Participant 9 is a seven year veteran of the oil & gas industry. She characterized her career as going to a daycare center where all the children are trying to put the pegs in the wrong holes. Although the teacher (her) is trying to teach the children the right way to do it, they don’t care and won’t listen.

Participant 10 is a retired 27-year veteran of the oil and gas industry. She had a total of 34 years of professional experience. The image she chose to depict her career was of “A black lady covered in oil. Then at the end of that picture, a sunset and beach.” She explained that this image represented working hard all her life to “get to this one goal in

your life, which is to be set free and not have to work." She also described her career as "a trending chart going up and down."

Participant 11 works at a refinery in southern California. She has 12 years of experience in the oil & gas industry and 17 total years of fulltime professional experience. Her image to depict her career was of "the person with the most experience is in a room talking in a meeting, while the people who should be listening are only half-listening."

Participant 12 is a retired 29-year veteran of an oil & gas refinery in southern California. Her entire 29 years also represents her full-time professional experience. She described her career as a survivor. "A survivor who persevered through life's up and downs, the good and the bad, got tried at different stages of life, acquiring knowledge along the way and in the end, come up on top."

Factors that Enhance Retention

Participants were asked to reflect on times they felt most motivated to stay in their jobs and to reflect on the factors that promoted their retention (see Table 1). Four key themes emerged and are described in the following sections.

Table 1

Factors That Promote Participant Retention

Factor	n
Career Development and Achievement	12
Enjoyable aspects of job	9
Compensation and Opportunities	8
Others' Support	7

N = 12

Career development and achievement. All participants described career development and achievement as a motivating force for staying with their company and staying in the industry. These participants emphasized their desire for growth, challenge, learning, and development. Five of these participants additionally explained that receiving recognition for their career achievements also was critical. One participant, who ultimately left the industry, recalled, "I felt like I was developing. And getting added responsibilities. When you first get there, I liked hearing the idea that any job is within reach." Another participant elaborated:

> My desire to stay was the highest probably right when I started, when I first got here…. When I first started I was doing big things … I was excited about all the possibilities of my job role and all the promises that were told to me in my interview in terms of opportunities for different assignments and travel and seeing other parts of the business. There were a lot of opportunities described in the interview process that I was excited. … I was learning a lot and it was a lot of activity that was exciting at that time.

Yet another participant emphasized that she relished struggle and welcomed the learning and challenge she encountered in her work. She further elaborated that the industry offers a great deal of opportunities for this kind of growth:

> I enjoy a challenge and I feel like my whole career, my whole life has been a struggle. And I don't know how else to be. So I'm so used to always overcoming the next challenge and then find the next one. And then overcoming that one to find the next one, I'm not sure how else to be. I do enjoy the fact that my job is hard every day. I also enjoy the fact that I learned something new every day. And at this point in my career I think that I have something to offer and I could make a difference. And so that propels me to want to stay and to make improvements. As an engineer, and now as a manager, I think that this is a good industry to be in since there is a lot of opportunity, a lot of growth and there's stability in the industry that is not there for other industries. … our industry still continues to pay at a competitive rate. And again, for the foreseeable future, I think that it's a viable business. I mean, people, you know, the demand for energy is still increasing around the globe. And I think that there's a future I can retire from this industry without fear of having to be forced to look for a new job.

Five of these participants additionally noted that they felt a strong desire to stay when their career achievements were recognized. One of these participants explained:

> There have been a number of times where I've gotten a really high ranking and those have made me feel validated that I'm doing the right things and I am appreciated. And then just before I came into this current role, I did feel validated as well.

Another participant similarly noted, “Being able to have opportunities to really contribute and have your contributions acknowledged is worth it to me. … I really like when you're given a challenge and you meet that challenge and it's acknowledged.”

Enjoyable aspects of job. Ten of the 12 participants stated that their desires to stay were the result of liking various aspects of their jobs, including enjoying doing the work (n = 7), being a positive role model for other Black female engineers (n = 6), and enjoying their work environment (n = 2). One participant simply recalled, “I had a lot of fun in the beginning because I was just learning and I liked the job. … I would go to work and got to touch things. I got to see what I was working on.” Another participant commented:

> I think the work is very exciting. I really enjoy it, I mean, that's why I'm still in it now. I really enjoy working in petrochemical manufacturing. … I'm a global specialist now. I really do like this type of work. You have manufacturing, which is like your blue collar, interfacing with engineering, which is like a white color. I think that dynamic is very interesting. I very much enjoy having two different worlds and being on the border of both of them. I like the work, I like the environment. I think it's very interesting.

Six participants noted that through their work, they gained a sense of ambassadorship, as they were one of a very few number of Black female engineers in their company and in the industry at large. One participant explained,

> I was happy to … represent in that industry as an African American female in an organization where there are 300 interns but only three African American female interns. So it was more of a sense of "I have to

> carry the future of African American females." I have to continue this race so that I can provide that opportunity for others who are going to come after me and probably are going to face the same challenges.

Other participants noted the enjoyment and sense of responsibility they experienced mentoring and recruiting other Black female engineers. One shared,

> I felt this sense of responsibility because I was on the recruiting team and I was recruiting African Americans—specifically females to the company. And I didn't want to leave them engineering without a mentor that they could count on.

Compensation and opportunities. Eight of the 12 participants noted that the oil & gas industry offers exceptional compensation and opportunities compared to other job opportunities available to them in their field. Some participants commented on lost compensation, benefits, and vested options they would lose by leaving. One participant explained,

> Oil & gas is one of the industries that pays the best. For a person graduating from college with a degree in engineering, oil & gas is not quite the top, but it's in the higher percentiles in terms of pay.

Another agreed, noting, “In my line of work, I'm on the higher-end salary. … That was one of the main reasons why I want to work in oil & gas. I'm paid more than the average of my peers in any industry.” Yet another participant noted the pull factor of tuition reimbursement: “I was also in an MBA program and the company was paying for it, so I certainly wasn't leaving. … I think money plays a big factor in keeping people.” According to one participant, the acquisition of additional education and skills becomes a carrot that serves to strengthen employees’ commitment progressively over time. She explained:

> [Another] thing is trying to get to the gold nugget where you can get all your benefits. You're always looking into figuring out a way to grow and move into another position and gain another skill set: “Let me see if I can grow and possibly get a transfer and move on to another position.”

> Another thing was getting 75% of your education paid for, because I was going back to college to finish up my bachelor's degree. … I started to see how important it was in [my company] to get a degree and not stay stagnated in a certain position. Degreed people are definitely treated different than the non-degreed. You need that degree to put under your belt, have on your PMP and be able to utilize to gain all the positions and other opportunities.

Other participants reported feeling unable to leave the industry due to the losses they would incur in terms of professional connections, time invested, expertise built, or opportunities available. One participant explained, "The challenge of oil & gas industry and with so many years in the industry, I have some expertise and I don't want to lose it." Another participant explained,

> The first reason then I decided to stay is because I had less than three years of experience. And, as a recruiter, I know that most companies who are looking for experienced hire candidates are looking for … three-plus years of experience to be a competitive candidate. I knew at that time I was not a competitive candidate to find other employment of the same caliber. … [Also], all of my experience, including my internships, were in oil and gas. … Having put in so many years in one industry, changing to a different industry is going to be kind of difficult. I've put it a lot of time and work to understand how oil and gas industry works. … Also, most of my school network is working in those industries and, because of internships, I also know a lot of people in that industry.

Others' support. Seven of the 12 participants noted that others' support strengthened their desire to stay. Participants noted the role both of supportive mentors and supervisors (n = 7), good peer working relationships (n = 4), and the support of the Black Employee Network colleagues (n = 2). One participant shared, "Another reason is because I really do like my work group … The relationships that I have really keep me here." Another explained:

> I had one supervisor who trusted me to do different projects, and he was more hands-off and helped me when I needed it. … Also had my work with [a coworker] … motivated me … because she would look out for me all the time. … I had a great mentor.

Yet another commented on the role of the employee resource group:

> I'm in the Black Employee Network and we have a good network, which is just an outlet if I need to have special support. Some new Black female engineers also started around the time a lot of my friends left the company. … So I lost people, but I also gained people, and it kind of helped put me at ease. … There's a good group of female engineers here that I talk to regularly

Participants also were asked to speculate about the factors that enhanced the retention of Black female engineers in general. Analysis of their responses three themes (see Table 2). These are described in the following sections.

Table 2

Factors Believed to Enhance Retention of Black Female Engineers

Factor	n
Support their assimilation into corporate environment	9
Equitable career advancement and clear roadmap	7
Select skilled, culturally sensitive supervisors	5

N = 12

Supporting their assimilation into corporate environment. Nine of the 12 participants emphasized that for Black female engineers to succeed and be retained in the oil & gas industry, organizations need to support their assimilation into the corporate environment, especially through support networks that foster sense of community and aid their assimilation into the often foreign seeming oil and gas culture (n = 7) and through the support of mentors (n = 6). Several participants specifically noted that Black female engineers often are not set up for success because they may not understand how to navigate the organizational culture. One participant depicted the experience of Black females in an oil & gas company in this way:

> It's very stressful to be a Black person working in this organization, where you guys are all good ole boys, blonde hair, slapping hands, talking about your football alma mater. I didn't go to that school. I'm not from the south,

> I don't watch football. They don't try to ask anything about what we would like. They don't make the effort.

Another participant agreed, saying:

> I think that the retention of Black females could be a cultural issue. We may not be as assertive or maybe we're not as cutthroat as some of our peers, and it could be holding us back. It is possible that it's a cultural thing that we don't advocate for ourselves.

One participant suggestion was that Black engineers need training how to navigate this unfamiliar environment:

> It's important and extremely helpful for newer, younger employees to understand how to deal with racism. They have to understand that it exists, to understand what they're seeing is racism, and then to know how to address it tactfully in a corporate atmosphere without people saying, "Oh, she's aggressive" or "She's loud," "She's this," or "Oh, she has an attitude." That type of gender- and ethnic-specific training would be very helpful. I don't think there's any kind of specific effort to help African American females or males in the company learn this. … How are African American men and women teaching young African American engineers about how to deal with the racism?

Several participants emphasized the need for support networks and mentors. One of these participants elaborated:

> You just have to have a mentor. … It's extremely helpful if somebody in your business unit is at least 10 years your senior and is willing to say, "Let me help you out, help you navigate, how to do your PMP, how to network … It's good to have allies in your department because they're the ones who are going to make the decision about whether or not you should leave. You should move to a different role, whether they'll support you in trying to move to a different part of the company.

Assuring equitable career advancement and clear roadmap. Seven of the 12 participants stressed the need to assure that career advancement decisions are equitable and that Black female engineers are given a clear roadmap to aid them in understanding the path forward. One participant explained, "I've seen Black women stay with [the company] because they're moving around their assignments fairly quickly. They had

some type of roadmap for that person. They kept her moving and not stay in one place a long time." Another urged:

> Leadership needs to understand that we're moving in the right direction but we're not there yet, especially with retaining talent. They're trying to do a better job with supporting women and putting women in leadership roles, but White women still are more likely to get the position than Black women are. That still needs to be addressed and brought to people's attention so they understand that everybody is part of the solution.

Selecting skilled, culturally sensitive supervisors. The third theme cited by participants was to select and develop managers who have strong people skills and who are culturally sensitive (n = 5). One participant asserted that what is needed are "supervisor[s] with enough leadership skill to develop their employees." Another participant shared her observations based on what she had heard from her Black female engineer friends:

> Some supervisors are not equipped to manage and provide feedback to Black female engineers. I think that the industry could do a better job of making sure our supervisors are ready to lead a diverse work group, because the people who have either left or seriously considered leaving, it's been because of interactions with their supervisors and feeling that their supervisors are not in their corner to help them. I'm not sure what that training that looks like. Oil & gas industry is traditionally white and male… [but] from an educational standpoint, females in STEM, Black females in STEM, and Hispanic females in STEM, is being pushed from everywhere, and I don't know if the company's ready for it.

Factors that Contribute to Turnover

Participants then were asked to reflect on the times when they wanted to leave their organizations and to identify the factors that led to that feeling. Examination of the data revealed five themes (see Table 3). These are discussed in the following sections.

Table 3

Factors Contributing to Participant Turnover

Factor	n
Lack of support for development	9
Diminished mental and emotional wellbeing	7
Racial discrimination and lack of leadership and employee diversity	6
Lack of challenge, contribution in, or enjoyment of role	6
Poor relationship with supervisor	4

N = 12

Lack of support for development. Nine of the 12 participants noted that sensing a lack of support for their development increased their desire to leave. This included lack of supervisor support for development and advancement (n = 7), lack of guidance for their growth and improvement (n = 4), and perceived unfairness in the compensation and bonus procedures (n = 3), and lack of sponsorship for their career progression (n = 2). One participant discussed the difficulty she had in getting supervisors to support her growth and career aspirations. She explained:

> It all started when I got a new supervisor. [I've had five supervisors—they just come and go]. So, I got a new supervisor and I had told them my experience and my prior rating and where I was going career wise and where I want it to be short-term. And he said that that wasn't going to happen. I wasn't going anywhere. So, that frustrated me. … I just feel like as a supervisor, you should know my experience and my background, not try to put me in my place where you think my place should be.

Another participant described her unfruitful efforts to get career guidance:

> I would ask, "What do I need to do to prepare for advancement?" And people will give you general blanket statements, which of course I would agree that they are applicable for anybody who wants to get to that leadership or that management position. … [but] I'm a first generation immigrant. My parents attended high school in Africa. I went through the American education system and, even then, corporate America is different for me. I don't have my mom, dad, or uncle to direct these questions to. So, of course, I have to rely heavily on either my community of people or mentors, even for basic questions on how to navigate socially or even technically. So then, you start thinking, well I want to do this, I want to do that, but who's advocating for me to get to those next steps and those next

> positions? Or even helping me phrase things a certain way for me to be able to be successful to get there?

Yet another participant expressed her lack of feedback and sponsorship. She explained:

> Sponsors support you and speak on your behalf in order to help you to get the next job. I feel like I still don't really have full support from management. And if there was constructive feedback that I should have gotten, I didn't get it. So I'm not quite sure and I have no idea if I am doing anything wrong. I'm battling with trying to find the next role without having proper sponsorship.

Other participants noted their perceptions of unfair promotion decisions. One participant explained it in this way: "It was a systemic problem, because this group was cliqued up, and those were the chosen ones, because they kiss the right butts, or I don't know what they did, but they fit the profile and they were being promoted."

Diminished mental and emotional wellbeing. Seven of the 12 participants stated that their sense of diminished mental and emotional wellbeing compelled made them want to leave their jobs. This included feeling a sense of powerlessness over their careers (n = 3), emotional distress (n = 3), and isolation and social awkwardness (n = 3), as well as feeling that they were having to exist within an inhospitable corporate climate (n = 2). One participant recalled her multiple to efforts to advance and her feeling of helplessness:

> I have left two oil and gas companies already. When I left [my former employer], there could have been other opportunities for me in the company, but I didn't quite see them and I didn't have a mentor to help me. … If there's anything that I could do to improve to make myself a more viable candidate, people were not sharing it with me.

Other participants described the sense of emotional distress they felt dealing their challenges on the job. One participant stated it this way:

> In my last year at [the company], … I felt I was in a constant state of stress. … [Since leaving], I just felt like once I left I wasn't stressed out anymore. I have less anxiety. I slept more. I just felt like it was just more of a relief to not be there.

Another stated it this way:

> You give and give and that's all you do and you don't get that sense of…it feels like a thankless job. When I was a process engineer – work so much that you even forget yourself. Think about your job even while at home, you worry about what has happened behind you when you were not there. So much demand on your time to do do do do - but very little appreciation. That's my experience of process engineer. You work like a horse and there's no appreciation of what you do.

Another participant described the sense of isolation, social awkwardness, and betrayal she felt in the presence of her White male coworkers. She explained:

> There was still a sense of isolation and not belonging because I don't look like the rest of them. We don't have the same things in common. … So you've got a bunch of people playing sports at the park, doing keg stands, drinking beer, running around, and I'm like, "This isn't what I do." But I'm supposed to try and make friends here and fit in, but I don't quite fit. They all lived together. They partied together, they drink together, and they don't really invite you to stuff. I didn't go party with them at all. … [I once joined their happy hour, and then a person who wasn't even there that night teased me the next morning about having a drink]. I was like, "You guys all talk too much," and I stopped partying with work people. … It was awkward.

Other participants described their sense of having to navigate an inhospitable culture. One participant elaborated that the politics particularly intensified once she began advancing into higher and higher leadership positions. She explained:

> Refining is a different world and, especially as a Black woman going into this pretty much White male dominated world, you walk into a black hole and you don't know what's coming at you. I've never dealt with politics like that. When I started moving in that direction, climbing the ladder, I saw the other issues I had to deal with, as opposed [as an individual contributor] when you're out there just doing your daily job. … It was a constant battle for me. … We were fighting each other more than working together, mainly due to people's personal reasons. I started to have to walk around with a chip on my shoulder to not be run over. You had to adopt that behavior to survive, and then you become this "refinery person" that I wasn't before.

Racial discrimination and lack of leadership and employee diversity. Six of the 12 participants noted that observing or experiencing racial discrimination and witnessing a lack of leadership and employee diversity discouraged them and made them

want to leave the organization. Several participants voiced the sentiment that "nobody in leadership looks like me." One participant elaborated:

> The lack of opportunity that I see in terms of gender and racial diversity in leadership. I'm looking up at leaders—The people running things and calling shots, and I don't see anybody that looks me in that space. … Even if you are working as hard as your counterparts, there isn't a funnel right now.

Several participants noted that their organizations had espoused a value of inclusion but that the leadership fail to "walk the talk." One participant elaborated:

> Black females face unique challenges … The old refinery culture is still there, but it's blanketed now because of all the zero tolerance and diversity and inclusion. But that old culture, the good ole boys' club is still there. You see a lot of people trying to adapt to it, embrace it, and enjoy it. You can be a model employee hitting on cylinders. But, as a woman, you're definitely going to be graded differently than a man in a refinery, no matter what. You can have a woman and a man that may have made the same mistake: They won't even confront the man about it, but it's a platform and issue for a woman to make the same mistake. They're going to sit down and have a conversation with her, whereas they will just tell the man to go ahead and fix it. So you're going to always be fighting that battle, that double standard from a woman's perspective.

Lack of challenge, contribution in, or enjoyment of role. Six of the 12 participants noted that having a reduced sense of challenge, contribution, or enjoyment of their role made them want to leave. Participants described this as lacking development, learning, and advancement, feeling misaligned with their career passion, feeling overwhelmed, or not feeling like they were making a difference. One participant recalled a realization she had where she felt she had done a great deal for the company and yet had not experienced the advancement she thought she should have. She explained:

> That was the first time when I actually stopped to look at all that I had done for the company and the circuitous ways in which I have had to go to be able to get where I am. And then I looked and saw that, "Wow, *that* person doesn't have to do that, and I wondered, "Why am I doing so much to climb?" As much as it will give me personal satisfaction, the company

> will benefit from it too. And if they don't see it that way, maybe there's somewhere else that will.

Another expressed her sense of not making a difference in her work and how that eroded her desire to stay with the company. She explained, “I just became complacent because I didn't really matter—like they could replace me tomorrow and nobody would feel a difference. You go to work to get a paycheck, but I didn't need that kind of paycheck anymore.” Yet another participant described her feelings of overwhelm in her work and how that fed a desire to leave:

> I had a strong urge to leave about a year ago following the retirement of my counterpart. [Someone] I was working very closely with and shared workload with, retired. I inherited all of his projects and new projects that we're continuing to come in from the division and it felt very overwhelmed. Especially a year ago, I was only a year and a half into the position. So at that point I was still relatively new to my job and don't know a lot of things.

Poor relationship with supervisor. The final theme indicated by participants (n = 4) was having a poor relationship with their supervisor. Participants characterized this in different ways, including receiving unwarranted critical feedback, simply not trusting their supervisor, getting the sense the supervisor was jealous of them or simply socially awkward, or unethical. One participant shared:

> My supervisor made comments about me that were unwarranted or not based on evidence. For example, he said that I was not “technically sound.” I asked him if he could give me an example, and he was like, “I don't really have an example, it's more like a feeling that you're not technically sound,” which I found very offensive. … I was a freaking kickass engineer! I was rated a 1 [the highest performance rating], and … now, all of a sudden, you're telling me *I'm* not technically sound?

Another participant explained that her relationship was strained from the outset. She shared:

> [My supervisor] treated me differently … [and] there's many theories this to why it was happening. But, nonetheless, I felt different in my group and

> I felt really unsupported. And my work started to suffer and … [I tried every] avenue that I could to get out from under working from him … [I finally left when] … one of the operators who was a good guy … passed away and I found out because [my supervisor] sent a text message to the group. I don't remember exactly what that message said, but it was so cold. It was so cold. It was like you've never even met this guy. You don't know what a valuable resource he is to our unit. You have no compassion. It was just like, "Hey guys, he passed away, blah blah blah." I decided then that I cannot give any more of myself to this company if they're going to force me to be under this asshole.

When asked to speculate about the factors that contributed to the turnover of Black female engineers in general (see Table 4), the same general themes emerged, including racism and lack of diversity in leadership and employee ranks (n = 8), lack of career development and achievement (n = 7), lack of support from others—namely from supervisors and mentors (n = 5), and diminished mental and emotional wellbeing (n = 4). Commenting on the feeling of isolation leading to diminished wellbeing, one participant reflected, "If you are in a company or anywhere where you feel like the Lone Ranger, it's very difficult to come to work." Another participant shared a story of the unconscious racism and bias she has encountered in the workplace and her preemptive step to avoid it:

> When I was a young engineer, I and two other engineers, both female engineers—one was Vietnamese and one was Latino—and we'd have lunch together daily. …[Then] one day, I was talking with an engineering coworker I had not talked to previously and we were just getting to know each other. He said to me, "Oh, I've seen you before in the cafeteria, you and the other secretaries eat lunch together every day." I said to him, "Well, the three of us are all engineers, why would you think we were secretaries?" And he apologized profusely, said he was sorry, and that he just didn't know. But the fact that he assumed that all three of us were secretaries was very telling.

Several participants speculated that unfair promotion practices and resulting lack of growth opportunities would hamper retention. One participant noted:

> I've been on a lot of selection teams. And I think that people just in general obviously like to focus on people's attributes and successes and what they can offer with the purview of what they could offer and who

> they are. And so *like hires like, like promotes like, like rewards like.* Because there's hardly any of us [Black females] on the selection teams, we don't get that benefit.

Table 4

Factors Believed to Contribute to Turnover of Black Female Engineers

Factor	n
Racism and lack of diversity	8
Lack of career development and achievement	7
Lack of support from others	4
Diminished mental and emotional wellbeing	4

N = 12

Another participant similarly added:

> I think the lack of opportunity for advancement and growth is what's really going to drive people away. If you can't grow, you can't go anywhere. You're not going to change. And most people want to do better. They don't want to just sit in the same spot doing the same thing all their lives. I don't think that's human nature.

Yet another participant asserted that the desired changes in hiring, growth, and advancement were unlikely to change until the highest levels exhibit the shift in cultural sensitivity and inclusiveness first. She explained:

> There's more women of color in the STEM field than ever before, and it's only going to continue. I don't think the mentality of the oil and gas industry is there yet in terms of how to manage that and prepare supervisors all the way up through management. In nearly all the oil, gas, and chemical companies, very few women are in high management positions. Until that shifts at a management level, companies are not quite ready. The pipeline is stacked, so it may be quite a while before we see that shift. Once we see the shift at the upper management level, the rest of the company should be able to kind of straighten up and get in line. We haven't seen it, so I don't think that they're ready yet.

Summary

This chapter reported the results emerging from interviews with 12 Black female engineers in the oil & gas industry. Findings indicated that key retention factors for this

population include career development and achievement—and making sure advancement decisions are equitable, enjoyable aspects of their jobs, compensation and opportunities, others' support, aiding their assimilation into corporate environments, and assuring that supervisors are skilled and culturally sensitive. Factors that erode retention include lack of support for development, diminished mental and emotional wellbeing, racial discrimination and lack of leadership and employee diversity, problems with their role, and lack of support from others—especially from their supervisors.

Although the themes reported in this chapter were consistent across both populations of current and former employees, the former employees appeared to be more open to speak more freely, sharing extreme emotions more easily in the interviews than did the current employees. In some cases, their answers seemed more forthcoming and candid. Some current employees seemed more guarded and were very careful in explaining their stories. A few of them also expressed concern about the recording the interview and only hesitantly agreed to do so. The next chapter provides a discussion of these results.

Chapter 5

Discussion

The purpose of study was to identify the factors that influence the retention of Black female engineers in an oil & gas organization in southern California. Two questions were explored:

1. What factors and events enhance stay intentions of African American female engineers?
2. What factors and events contribute to turnover of African American female engineers?

This chapter provides a discussion of the results. Conclusions are presented first, followed by recommendations. Limitations are then acknowledged and suggestions for additional research are offered. The chapter closes with a summary of the study.

Conclusions

Enhancing retention. Study findings indicated that the participants interviewed in this study love their work. They also expressed that they chose this line of work for the status and compensation it brings. Although they have ambition, and want to advance, most didn't feel they were developing fast enough, especially as they compared themselves to their colleagues. This also led to frustration as they wondered, "What am I missing? What aren't I doing?" One participant in particular noted that she liked the work and her compensation but that she often didn't know where she stood and where to go next. This led to a keen awareness of their need for others' support as they learned how to navigate the corporate world. Often, this requires skilled, culturally sensitive managers, and many participants noted the lack of such managers in their organizations. Moreover, nearly all the participants expressed the desire to see leaders in their organizations and be with colleagues who looked like them. What is curious is that only two of the 12

participants cited the Black Employee Network as a source of support. This points to a need for further research to explore why Black female engineers are not utilizing this employee resource group more or perceiving it as a support.

Findings from this study are consistent with Scott (2011), who concluded that obtaining development plans and opportunities; participating in development and mentoring programs; and receiving support from others in their personal and professional networks aided women's career advancement. Scott additionally found that personal development (e.g., developing communication skills, interpersonal competence, technical competence, leadership ability, work ethic, accountability) supported women's development. Only two participants noted personal reasons that enhanced their desire to stay: one stated that increasing her competence at work quelled her overwhelm and thoughts of leaving, while another said prayer and personal conviction prompted her to stay. It is possible that the remaining participants simply did not think of internal motivators. Alternately, it is possible that they may tend to look outside themselves for reasons to stay or leave their jobs.

Contributing to turnover. When asked to describe the factors that propelled them or other Black female engineers to leave the oil & gas industry, participants expressed a keen sense of not belonging or feeling included in a range of work-related interactions from socializing to career advancement discussions. This led to substantial frustration, as they believed they were not being developed through feedback in career conversations or progressing as quickly as they should. In particular, they perceived their supervisors as holding them back, excluding them, and failing to fully recognize their talents and abilities. According to participants, many of their supervisors further lacked the willingness or ability to demonstrate inclusiveness and have needed conversations

about their inclusion and advancement. Many of these findings were similar to those of The five biases against women in STEM study described by Williams (2015), specifically, the prove-it-again and the isolation bias felt by Black women scientists. Moreover, several participants noted that their supervisors rotated frequently, meaning they lacked advocates in the organization with sustained knowledge of them and their abilities. This left participants with an absence of ongoing feedback regarding how they could grow. These participants know they are talented and bright, but to an equal or greater degree, they are keenly aware they don't belong and are being judged for what they look like. One participant noted that she could not come to work with her hair in different styles without having to endure comments and stares.

This composite experience served to increase their distress, reduce their mental and emotional wellbeing, and undermine their engagement and discretionary effort. As participants described, their enjoyment of the work and their ambition thus diminish as engagement turns to presenteeism and eventual separation. These findings seem similar to those of Drury et al., (2011), who noted that women have to contend with negative stereotypes that cast doubt on their ability to perform well. Dobbin and Kalev (2016) further noted that organizations must tackle unconscious bias with training, testing, performance ratings and grievance procedures and how to get managers on board if they hope to avoid discrimination lawsuits.

These findings and their relation to literature lead to several recommendations for Black female engineers, organizations, and organization development practitioners. These findings are reported in the next section.

Recommendations

Black female engineers. Several recommendations are offered to Black female engineers based on the study results:

1. Look into the employee resource groups available, as they may have important insights and support structures to aid in advancement.

2. Take the initiative and have the courage to ask for developmental feedback and be receptive to hearing it. Some participants expressed that they asked for feedback but were not given any. In those cases, Black female engineers should seek internal or even external support professionals such as coaches, mentors, organizational development professionals, or human resources business partners to aid them in getting developmental feedback and creating a career development plan. For example, collecting 360-degree feedback can be valuable and even vital for gaining feedback, even if their immediate supervisors were not forthcoming with feedback.

3. Develop or strengthen resiliency skills. Practice mindfulness, prayer, journal, psychotherapy and/or build internal spiritual mechanisms that can pull one through life's setbacks.

4. Many participants described their perception that promotions and advancement were not occurring in the timeframe they should, especially when they compared themselves to others in the organization. It would be beneficial for Black female engineers to take the initiative to seek out other people's stories in the organizations—especially those of men as well as women, and those of people of various races. It is possible that in doing this, Black female engineers find that their stories may be more similar to others' stories than they realized. Through this exercise, they may discover additional insights and techniques for navigating the corporation and advancing their careers.

Organizations. Four recommendations are offered to organizations:

1. Although identifying inclusion as an organizational value and outlining expected managerial behaviors are important, these actions are not enough to create and sustain change. To create a true shift, metrics and accountability must be created to guide, support, and enforce organizational inclusion initiatives.

2. Employee Resource Groups could be leveraged more effectively to better support the retention of Black female engineers. More recognition and sponsorship should be given to these employee resources groups by senior leaders in the form of awareness regarding what these groups do for their employees. Assure that adequate governance structures are present. Create a safe space for Black female engineers to voice their issues and request help.

3. Oil and gas companies are at significant risk for inequitable advancement, given the small number of Black females in oil and gas and the natural tendency for institutionalized *homophily*, which refers to the human tendency toward people's preference for those similar to themselves (McPherson, Smith-Lovin, & Cook, 2001). This can serve as a natural impediment to Black female's advancement, as, in the words of one participant, "like promotes like." One solution to this issue is instituting a quota system to both assure diverse representation in promotion decisions and diverse representation in leadership ranks.

4. Assure that the individuals selected for management positions possess cultural sensitivity and the soft skills to support employees in their career advancement. This is particularly needed because, based on the study results, most Black female engineers love their jobs, are very intelligent, have tremendous ambition, and want to advance. At the same time, they may lack awareness and, in some cases, confidence or know-how regarding how to effectively navigate the corporate environment and appropriately position themselves for advancement. This signals the need for stronger mentoring and career guidance for this population, delivered by individuals who can sensitively relate to and support these women.

Organization development practitioners. Organization development professionals can play important roles in supporting and enacting the recommendations outlined above. In particular, they can play powerful roles in helping employee resource groups become effective and powerful forces for change in their organization. Moreover, organization development professionals can help organizations in bringing inclusion initiatives into actual reality by helping leaders articulate what inclusion means in their organizations and then to cascade the needed attitudes and behaviors throughout the organization up and down the leadership ranks and throughout employee peer networks. Moreover, appropriate metrics and measurement tools need to be instituted.

Limitations

A limitation of this study is the sample size (n = 12), as the action research was conducted at only one oil & gas organization and the population of Black female engineers in this industry is already small. It is possible that given a larger sample, the

most significant factors of retention might be identified with greater clarity. This clarity could then lead to more effective diversity programs being designed to support the retention of black female engineers in oil & gas.

Another limitation of the study comes in the form of my own biases and perspectives. To acknowledge observer bias, I disclosed the personal significance of the study. The dynamics and conclusions I describe in Chapter 4 may be influenced by my history, lived experiences, and point of view while working in the oil & gas industry. The observations and inferences of a different researcher conducting this study in the same context would necessarily have other nuances than what is presented in this paper.

A possible limitation could also be a butterfly effect, as two years before the interviews, I shared my observations and personal significance of the study with senior leaders of the organization. Events supporting the Black Employee Network have since increased, potentially helping to address the issues Black female engineers face in this organization.

Suggestions for Research

A follow up to this study is to conduct a longitudinal research on black female engineers in management and senior level positions from their early careers through retirement to capture what retention factors emerge. It would be important to select high potential individuals that have worked in oil & gas for over two years for this research to enhance the probability that the women would have the desire and ability to ascend the corporate ranks.

Additionally, a comparative study could be performed on black female engineers in other companies and other industries to more fully understand the unique success factors and barriers in the oil & gas industry. Although this study has drawn important

findings and insights, it is unclear whether these are unique to STEM organizations or are applicable across industries.

Engineers are renowned for having personality types oriented toward tasks than people. The study findings underscored their need for others' support and, specifically, their supervisors' support, in understanding how they are doing in their careers and advancing. The findings and recommendations offered in this study hinge upon people-oriented attitudes and behaviors. It would be beneficial to further examine the extent to which the issues uncovered in this study are due to personality traits endemic to engineering professions.

Summary

This study identified the factors that influence the retention of Black female engineers in an oil & gas organization in southern California. Twelve current and former employees were interviewed to gather their insights about factors that contribute to and detract from the retention of Black female engineers. Study findings indicate that retention of Black female engineers in the oil and gas industry is associated with their career development and achievement, enjoyment of the work, compensation and opportunities, and support from others. Retention can be further aided by support their assimilation into corporate environment, assuring equitable career advancement, and assuring managers are skilled and culturally sensitive. Retention of these employees appears to be eroded by lack of support for development, diminished mental and emotional wellbeing, racial discrimination and lack of leadership and employee diversity, problems with their role, and lack of support from others. By implementing the recommendations offered in this study, it is anticipated that the retention of Black female

engineers may increase and oil and gas organizations may continue to benefit from the substantial benefit they bring.

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Appendix A: Introductory Email

Dear _____:

I am conducting research on how organizations may better retain African American female engineers. This is part of my master's in organizational development at Pepperdine University.

I am writing to request your participation in this study. Participation will involve one 45-minute to 1-hour, in-person or telephone conversation with me to discuss your work experiences. The conversation would be scheduled at a time and location convenient for you.

To participate, you need to meet the following criteria:

1. You are a black female engineer
2. You are currently employed by or formerly employed in the oil and gas industry within the previous 5 years.
3. You worked or have worked in the oil and gas industry for at least 2 years.

Participation is voluntary and confidential. You would not be identified in the study, and any answers you provide would be pooled with others' responses and reported in aggregate.

Would you please let me know if you are willing to participate in my study?

I sincerely thank you for your help!

Appendix B: Consent Form

PEPPERDINE UNIVERSITY
Pepperdine Graziadio Business School

INFORMED CONSENT FOR PARTICIPATION IN RESEARCH ACTIVITIES

RETAINING AFRICAN AMERICAN FEMALE ENGINEERS IN OIL & GAS ORGANIZATIONS

You are invited to participate in a research study conducted by Alisha Keyes, MS candidate, and Julie Chesley, PhD at Pepperdine University, because you are an African American woman, an engineer, and a current or former employee of [your organization]. Your participation is voluntary. You should read the information below, and ask questions about anything that you do not understand, before deciding whether to participate. Please take as much time as you need to read the consent form. You may also decide to discuss participation with your family or friends. You will also be given a copy of this form for your records.

PURPOSE OF THE STUDY
The purpose of study was to identify the factors that influence the retention of African American female engineers in an oil & gas organization in Southern California.

STUDY PROCEDURES
If you volunteer to participate in this study, you will be asked to take part in a 45-minute to 1- hour, in-person or telephone conversation. You will be asked questions about your work experiences.

POTENTIAL RISKS AND DISCOMFORTS
The potential but highly unlikely risks associated with participation in this study include possible emotional upset as you think about your work experiences. To decrease the impact of these risks, you can stop participation at any time and/or refuse to answer any interview question.

POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY
While there are no direct benefits to the study participants, there are several anticipated benefits to society, which may include guiding future research or creating services to help oil & gas organizations improve the retention of African American female engineers.

CONFIDENTIALITY
The records collected for this study will be confidential as far as permitted by law. However, if required to do so by law, it may be necessary to disclose information collected about you. Examples of the types of issues that would require me to break confidentiality are if disclosed any instances of child abuse and elder abuse. Pepperdine's University's Human Subjects Protection Program (HSPP) may also access the data

collected. The HSPP occasionally reviews and monitors research studies to protect the rights and welfare of research subjects.

The data will be stored on a password protected computer in the principal investigator's place of residence. The data will be stored for a minimum of three years. The researcher will record your answers in a password-protected document and a unique identifier (such as "Participant 1") will be assigned to your information. Any information you share that could uniquely identify you (such names, places, or events unique to you) will be given a fake name.

The data will be stored on a password protected computer in the researcher's residence for three years after the study has been completed and then destroyed.

SUSPECTED NEGLECT OR ABUSE OF CHILDREN

Under California law, the researcher(s) who may also be a mandated reporter will not maintain confidential any information about known or reasonably suspected incidents of abuse or neglect of a child, dependent adult or elder, including, but not limited to, physical, sexual, emotional, and financial abuse, or neglect. If any researcher has or is given such information, he or she is required to report this abuse to the proper authorities.

PARTICIPATION AND WITHDRAWAL

Your participation is voluntary. Your refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study.

ALTERNATIVES TO FULL PARTICIPATION

The alternative to participation in the study is not participating or only completing the items for which you feel comfortable.

INVESTIGATOR'S CONTACT INFORMATION

You understand that the investigator is willing to answer any inquiries you may have concerning the research herein described. You understand that you may contact Alisha Keyes at [contact information], or Julie Chesley at [contact information] if you have any other questions or concerns about this research.

RIGHTS OF RESEARCH PARTICIPANT – IRB CONTACT INFORMATION

If you have questions, concerns or complaints about your rights as a research participant or research in general please contact Dr. Judy Ho, Chairperson of the Graduate & Professional Schools Institutional Review Board at Pepperdine University 6100 Center Drive Suite 500 Los Angeles, CA 90045, [contact information].

Appendix C: Interview Script

Thank you for agreeing to meet with me to discuss your work experiences in the oil and gas industry. My particular interest is understanding what affects your desire to stay or leave the organization.

As a reminder, the data I collect will remain confidential—all data will be reported in the aggregate with no identifying information.

With your permission, I would like to audiorecord our conversation so I can focus on our dialogue while being sure to accurately capture your answers. Do I have your permission?

[Review the consent form]. Do you have any questions before we begin?

Opening Questions

First, I want to gather a few basic details:

Demographic Data

1. Employer:
    a. Where do you currently work?
    b. How long have you been there?
2. Position:
    a. What is your current position?
    b. How long have you been in this position?
3. Experience
    a. How many years, in total, have you worked in the oil and gas industry?
    b. How many years, in total, of full-time professional experience do you have?

Building Context and Rapport

4. Now I'd like you to take a moment to reflect on the entirety of your experience in the oil and gas industry. If you could pick one image or metaphor to depict your experience, what would it be? Please explain.

Core Questions

Critical Incidents

5. Now I'd like you to think about the entirety of your experience again and bring to mind a time when you had a strong urge to leave the company.
    a. What was happening?
    b. What were the critical incidents, people, or other factors compelling you to leave?
    c. What factors, if any, were pulling you to stay?
    d. What did you ultimately do?
    e. Were you happy with your decision? Why or why not?

6. How representative is this experience of your average day-to-day experiences in the oil and gas industry?
   If not representative, ask: How would you describe your average day-to-day experiences?

7. Now please think of a time when your desire to stay was highest.
   a. What was happening?
   b. What were the critical incidents, people, or other factors compelling you to stay?
   c. What factors, if any, were decreasing your desire to stay?
   d. What did you ultimately do?
   e. Were you happy with your decision? Why or why not?

8. How representative is this experience of your average day-to-day experiences in the oil and gas industry?
   If not representative and not asked as part of Question 6, ask: How would you describe your average day-to-day experiences?

Generalizing Questions

9. What factors do you think most enhance your decision to stay in the oil and gas industry?

10. What factors do you think most enhance the retention of Black female engineers in the oil and gas industry?

11. What factors do you think most compel you to leave the oil and gas industry?

12. What factors do you think are most responsible for turnover of Black female engineers in this industry?

Closing Question

13. Is there anything else you would like to share regarding the retention of Black female engineers in the oil and gas industry?

Thanks so much for your time and sharing your story. This was very helpful and will contribute greatly to my data.