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Women's Discursive Identity De/Reconstruction in Male-Dominated Engineering: A Case of Algerian Female Engineers

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*D*edication

*This work is dedicated to
my parents who passed away
to my grandmother, thank you mother, without you I would
not reach this stage.
To my aunts. Thank you for your support.*

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Abstract

The present study explores the discursive construction of Algerian female engineers' professional identities at engineering workplace in Algerian Sonatrach Company. More precisely, the present study sheds light on (in) visibility issues of female's contribution, strategies to cope within male-dominated engineering, the challenges of the marginal borders, and underrepresentation imposed by Algerian professional and cultural assumptions on female engineers. In attempting to explore the experiences of Algerian female engineers in light of the present constraints in the domain of engineering, two main data collection instruments were selected. First, the questionnaire was administered to 50 male and 50 female engineers. It aims at exploring participants' perceptions and experiences at engineering workplace. Second, the interview was conducted with 15 female engineers. It aims to explore the discursive construction of females' engineers' professional identities in light of the available engineering discourses of masculinity. The study reveals that engineering workplace is discursively gendered. The results indicate that Algerian female engineers' discourses remain representative of a significant manner of resistance to available masculinities. Moreover, the data reveal a picture of extensive masculine culture that affects their coping strategies, and highlights women's consciousness-raising in the professional domain while struggling to gain their professional status. Female engineers suggest that establishing gender equality through eliminating gender differences at engineering workplace will enable females to regain recognition as professional engineers.

Key words: gender, identity, discourse, male-dominated engineering, Algerian female engineers.

List of Abbreviations

MMDI: Conceptual Model of Multiple Dimension of Identity

DA: Discourse Analysis

CDA: Critical Discourse Analysis

FCDA: Feminist Critical Discourse Analysis

MID: Minority Identity Development Model

RSA: Marxist Repressive State Apparatus

ISA: Ideological State Apparatus

LWP: Language and Women's Place

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General Introduction

General Introduction

Today's world is growing to be economically and culturally more globalized. We live in an increasingly globalized network and a cultural framework that strongly control people's development, opportunities, and choices. Despite both the economic and the sociocultural changes that occurred in the world that allowed women gaining more presence in the workplace and in higher education, gender imbalances still exist i.e. although Algerian women are more present in the workforce, their representations in the professional position remain unequal due to certain social and cultural and stereotypical perceptions of women.

The problematic of this research springs from the contradictions noticeable in comparing between laws about women's equal rights and women's lack of representations at workplace. As a matter of fact, women who are enrolled in men's fields seem to experience underrepresentations, discrimination, and exclusion. In other words, they are likely to be rejected by engineering Culture which perceives women's presence in male-dominated domain as unnatural. Despite the fact that Algeria enacted many Algerian reforms in relation to women's rights that are clear in Article 63¹ which demonstrates that the Algerian constitution has ensured equal right for all citizens, also, the World Report (2018) argues that Algerian constitution ensures gender equality and equality of rights and duties of all citizens to reduce discrimination and gender barriers, Algerian women still have serious challenges to access their right in male-dominated careers. Nevertheless, the integration of Algerian women in male-dominated careers has been subject to constant debate, what used to be a male territory witnesses increases in female workers including police services, civil engineering, automobile mechanics, fire fighting occupations, air plane pilots, and taxi drivers.

Based on the premise that occupational sex segregations are assigned by social norms of placing men and women in the Algerian society, the scope of the present doctoral research revolves principally around exploring the experience of Algerian female engineers and examining the discursive construction of their professional identities. This study is meant to identify the present restrictions and barriers which constrain the career choices of Algerian female engineers. It is through this thesis that female engineers' underrepresentations are

¹All these Articles exist in "Chapter IV: Rights and Liberties" in the Algerian Constitution which was amended by the government on March 6th, 2016. Article 63 says: "*equal access to functions and positions in the State is guaranteed to all citizens without any other conditions except those defined by the law*"

voiced. Our aim is to examine how these discourses of gendered workplace represent Algerian females' identities. By insisting on the possibility of sharing their lived professional experiences we aimed at:

- Revealing the relationship between Algerian patriarchal society and the hierarchy of power relations between men and women in the distribution of labour in the engineering field.
- Seeking how engineering as a workplace culture is discursively gendered.
- Investigating Algerian females' engineering professional identities' discursive representations.

The motivation of this research emanates from the interest that I developed as a student in the discipline of Sociolinguistics and Gender Studies. This enabled the researcher to develop a personal curiosity and desire about the presence of female workers in men's fields in Algeria where the employment of women remains an issue of debate due to the instilled biased social conventions about gender in Algeria throughout history. Another source of motivation may be related to the representation of female workers in male dominated jobs which needs to be examined from a new perspective that considers the importance of the constitutive nature of discourse in reflecting their lived experiences at workplace.

The researcher's observations about the status of Algerian women working in engineering show that Algerian female engineer face many constraints related to the fact that the workplace culture is highly masculine. Algerian female engineers working in the Algerian Company of Sonatrach seem to face in/visibility and exclusion practices. Hence, engineering may represent and reflect the silencing of female workers who experience unequal treatment as a result of masculine domination. Perhaps the most remarkable observation is that engineering as our scope of research has been loaded with discourses of gender and power relations that respond to social norms about the definition of the professional engineer. In addition to that, engineering profession, among other professions, highlights the relevance of the salience of both gender and professional identities. Here again, we can say that engineering is a context for the intersection between institutional discourses i.e. of what defines the professional engineer in light of the dominance of the masculine culture, and discursive identities i.e. how people constitute particular types of professional identities through engaging in discourse.

To research the already mentioned aims, the following research questions are put forward:

1. What might be the motives that lead Algerian women working in Sonatrach Company to choose a male-dominated job like engineering?
2. How do Algerian female engineers working in Sonatrach Company construct and enact their professional identities at engineering workplace?
3. How do Algerian female engineers working in Sonatrach Company cope in engineering professions in light of male-domination at workplace? What are the characteristics and the strategies that women adopt in their speech and behaviour to cope with uneven power at workplace and to effectively perform engineering tasks?
4. What might be the challenges that Algerian female engineers working in Sonatrach Company face at engineering workplace?

In order to answer the suggested questions, four hypotheses have been elaborated:

1. Algerian women engineers believe that their biological differences with male engineers do not obstruct them from effectively performing their engineering tasks, since they are self-reliant and competent.
2. Algerian female engineers demonstrate their self-positioning and engage in co-construction and negotiation of their professional identities despite imbalanced distribution of power at engineering workplace.
3. Most of the time, Algerian female engineers flip between “masculine” and “feminine” identities, since workplace culture is perceived to have a masculine tendency of work.
4. Algerian Female engineers face many professional challenges mainly in/visibility, discrimination, and exclusion. These work difficulties stand against harnessing their full potentials in engineering.

To theoretically found this research, a solid conceptual apparatus has been designed. To investigate Algerian females’ engineers’ construction of their identities in male-dominate workplace, Fairclough’s approach to Critical Discourse Analysis as a framework was chosen. This theoretical framework draws attention on analysing and discussing females’ engineers’ status in relation to the masculinities of engineering, since CDA considers discourse as an interactive activity that contributes to produce socio-cultural knowledge and constitute a site for the reconstruction of social identities. Elaborating on the previously mentioned theoretical

ground, the Vortex framework, advanced by Patricia Lewis & Ruth Simpson (2010), was used to unveil power dynamics and gender inequalities that are indoctrinated along male-dominated engineering discourse.

The research methodology was carefully chosen along with adequate methods, research instruments, and diversified approaches to contribute to the feasibility, validity, and credibility of the findings that this research puts forward. To begin with, the methodological part of this research refers to a mixed methodology framework which combines both quantitative and qualitative approaches. The former was used to identify minorities and majorities in relation to participants' views and perceptions about Algerian females' engineers' identities construction at engineering workplace. The later, has been used to identify participants' different answers and categorizing them in different typologies. By the same token research instruments, two main research instruments have been used to collect data: the questionnaire and the interview. The questionnaire aims at collecting data related to participants' perceptions and experiences at engineering workplace, and discusses professional strategies used in engineering work. It also aims at highlighting the work challenges that Algerian female engineers participants face on a daily basis. The questionnaire was designed for both Algerian male and female engineers. It was administered to 50 male and 50 female engineers (a total number of 100 participants) working in the Algerian company of Sonatrach. The interview which was administered to 15 Algerian female engineers working in the Algerian company of Sonatrach was used to explore Algerian females engineers' discursive construction of their professional identities at engineering workplace by means of investigating Algerian females' lived experiences.

This research work includes four main chapters distributed into two parts; a theoretical part consists of two chapters (chapter one and chapter two) and an empirical part which embodies two chapters as well (chapter three and chapter four).

Chapter one, entitled "The Discursive Construction of Gendered Identities", covers the basic theoretical issues related to gender identity and discourse. It starts by highlighting oppositional binaries of sex and gender. Then, it moves to report traditional studies related to the fields of gender and language. Also, this chapter elaborates on the relationship between discourse, gender, identity, power, and ideology. To this end, this chapter sheds light on diverse theoretical approaches which intersect with gender norms, gendered identity, discourse, power relations, and ideology.

The second chapter, entitled “Female Engineers and Engineering Workplace”, highlights the complexities of engineering as a gendered workplace. It starts by defining the workplace culture, focusing on sex occupational segregation, the gendered division of labour, and power dynamics at engineering workplace. It also explores women’s gendered identities manifestations and representations at workplace in relation to power dynamics. In addition to that, the current chapter addresses the nature of engineering workplace, shedding light on the masculine, discursive, gendering, and gendered practices at engineering workplace. The last part of this chapter investigates women’s invisibility at engineering workplace, emphasizing on gendered sex-based discrimination.

Chapter three, entitled “Research Design and Methodology”, describes the research methodology framework adopted in this research work. It begins with depicting women’s economic participation in Algeria. It provides an overview about the research design along its different parts. The first part of the research design deals with the setting, population and sampling of this research work. Its second part presents the different approaches adopted, focusing mainly on quantitative and qualitative paradigms, and critical approaches to text and talk, adopting critical discourse analysis framework. In addition to the already mentioned parts of the research design, its following part introduces the research instruments used to collect data which are questionnaire, interview, and observation that structures the research work.

Chapter four, entitled “Data Analysis, Interpretation and Discussion of the Findings”, presents the global findings of the present research work. It provides data analysis which is divided into five sections. The first section presents participants’ profile, giving details about the participants personal and professional information. The second unveils Algerian females’ engineers’ perceptions of engineering, focusing on the participants’ views and image they perceive about engineering. The third section reports Algerian Female Engineers’ practices of co-construction of professional identities, focusing on the discursive construction of Algerian females’ engineers’ professional identities. The fourth section tackles Algerian Females’ engineers’ participations at engineering workplace, exploring their experiences and their status at engineering workplace. Section five explores Algerian females’ engineers’ challenges and suggestions, highlighting present career constraints in light of the male-dominance at engineering workplace. It moves to provide the interpretation of the Main Findings. It ends with reporting the limitations of the Study and providing some suggestions for further research.

■ *Chapter One*

The Discursive Construction of Gendered Identities

1.1. Introduction

The present chapter focuses on the discursive construction of gendered identities. It explores the relationship between gendered identities and discourse to address the issue of question of how our gendered identities are represented in discourse. It discusses the binary opposition of sex and gender. It, also, highlights traditional understandings to language and gender studies. In addition, this chapter concentrates on theoretical resources which conceptualize the profound connection between discourse, gender, and identity in light of particular social aspects such ideology, and power. This chapter ends with addressing theoretical approaches that deal with social and cultural complexities which intertwine with discourse, gendered identities, power dynamics, and ideology.

1.2. The Questions of Sex and Gender

The conceptualization of sex and gender began with the feminist movement in 1970s that strongly criticized women's position and gender inequality in society and aimed to end up women's oppression. This movement marked the real interest and the point of departure in gender studies. The primary focus of the early research on language and gender was on the differences between sex and gender through language use. It was documented through shreds of evidence about empirical differences between women's and men's speech, mainly in "cross-sex interactions". Many researchers focused on describing women's speech, emphasizing on the role played by language in maintaining gender inequality (Kendall & Tannen, 2005: 548-49). Kendall & Tannen (2005) claim that during the feminist movement in the 1970s, the study of language and gender appeared as a core interest of researchers who published groundbreaking books in the field among them Robin Lakoff: *Language and Women's Place* (1973); Mary Ritchie Key: *Male/Female Language* ; and Barrie Thorne & Nancy Henley: *Language and Sex: Difference and Dominance*.

Feminist researchers urged the need to get through criticizing how gender differences came to be seen as natural characteristics based on the social conventions of categorizing both sexes based on biological distinction (I. Martínez Alemán et al., 2002). In other words biological traits were prioritized when assigning social traits to both sexes leading to social inequalities. This issue instigated feminist scholarship to criticize biological categorization of gender.

As gender becomes more mainstreamed in scientific research and the Western Feminist debate, thoughts, and critics, the confusion made about sex/gender has cleared away (I.

Martínez Alemán, Ana M. II .Renn, Kristen A, 2002). Ann Oakley's (1972) work *Sex, Gender and Society* was among the first works to mark the departure of a critical standpoint about Western societies where women's social position was restricted to their gender roles based on biological determinism and bound to domestic roles (Pitcher & Whelehan, 2004,p.56). Oakley (1972) points out sex as anatomical and psychological characteristics that define females and males while gender refers to social characteristics of defining masculinity and femininity i.e. gender is defined by society while sex is a matter of biology. For Oakley (1985, p.16) "*sex is a word that refers to the biological differences between male and female: the visible difference in genitalia, the related differences in procreative function. 'Gender however is a matter of culture: it refers to the social classification into 'masculine and 'feminine'*" (as cited in Pitcher & Whelehan, 2004).

Notably, the term gender also traces back to the pathbreaking article *The Traffic in Women: Notes on The Political Economy of Sex* of the anthropologist Gayle Rubin where he declared his formulation of "sex/gender system" in 1975 "*the sex of arrangements by which a society transforms biological sexuality into products of human activity, and in which these transformed sexual needs are satisfied*" (Rubin, 1975, p.159). He asserted women's oppression that originated from social mechanisms and practices drawing on Marx, Freud and Levi Strauss perspectives. By examining how "kinship" served women's oppression in a society as a result of the social structure. For Rubin, gender is a socially imposed category that differentiates both sexes. Moreover, Caplan, et al. (1997) referred to the importance of clarifying the differences between sex and gender, they declare:

'Sex' marks an essentially biological distinction between women and men that may be based upon their anatomical, physiological, or chromosomal properties. 'Gender', marks a sociocultural distinction between men and women on the basis of the traits and behavior that are conventionally regarded as characteristic of and appropriate to the two groups of people (Caplan, et al., 1997, p. 07).

Despite the fact that the already mentioned researchers distinguish between sex and gender, other researchers claim that the binary distinction between sex and gender is not fully established which means that both terms intersect together in society. Notably, McConnell Ginet & Eckert (2003) criticize the split distinction between sex and gender. They assume that sex and gender intertwine according to specific social and cultural beliefs about them. They further suggest "*while we think of sex and gender as social, the distinction is not clear-cut.*

People tend to think of gender as the result of nurture- as social and hence fluid- while sex is the result of nature, simply given by biology. However nature and nurture intertwine, and there is no obvious point at which sex leaves off and gender begins”. They conceptualize gender as a social construct, thus, gender performances are available for everyone based on the constraints that influence the choices of behaving as masculine or feminine (McConnell Ginet & Eckert, 2003,p. 10). Correspondingly, Eckert and McConnell Ginet (2003, p. 19) confirm that gender identity is not something that one is born with, rather it is a learned category by doing gender through “actions and interactions” in light of the social structure. They (2003) further refer to the work of Jorgensen and Philips (2002:19) in characterizing the social practices which have two-sided meanings; one is considered as concrete that is fulfilled by individuals in specific contexts, while the second is related to the actions monitored by institutional conventions and social norms.

1.3. Gender and society

Raising concerns about the definition of gender received much interest focusing on gender as a social construction. Garfinkel (1967) argued that gender is “a managed achievement” i.e. people come to understand gender as something “natural” that is forced by social rules about feminine or masculine characteristics. Hence, the cultural ascription of gender as a natural category dictates what is defined to be male and female. People always have fear of breaking the social rules about femininity and masculinity by receiving humiliation and ostracization. So, they tend to communicate with each other in ways seen appropriate to their gender through the gendered practices within interactions, for instance. Correspondingly, Coffman (1959, 1987) conceptualized gender in relation to his Dramaturgical theory which suggests that people are actors performing roles of femininity and masculinity based on the perception of others about them, to what we think others see and expect us to be, to give a good impression to others which differs due to the social situation. So, the social interaction occurs through “gender displays”, referring to behavioral actions of men or women.

Interaction is a context that affects the construction of gender that is governed by the cultural norms of what it means to be feminine (woman) or masculine (man). On this basis, identity, for Erving Coffman, is a social construct that is shaped through performance and the attribution of others. Accordingly, the work of Goffman (1959) *The Presentation of Self in Everyday Life*, using the imagery of the theatre as the best way to understand those nuances in people’s interaction in society as face-to-face interaction, he assimilated people’s everyday social interaction where people perform the role of actors who both play and react to a variety of performances.

Gender has a prevalent role in shaping people's interactional ideas about femininity and masculinity by using a set of displays to indicate people as masculine or feminine which comes mainly from "non-verbal behavior" that structures and define the way we interact with each other. Thus, gender displays include particular styles that figure out during our performance such as appearance, the impression-the image the actor gives to the audience. According to Coffman (1959), gender displays, perceived as naturalized, decide on gender expectations about femininity and masculinity, hence, justify men's dominance and women's subordinate role in society moving by the social scripts that decide upon how to act due to the expected norms. Coffman (1959) criticizes the way gender displays reinforces the social hierarchies that are deemed accepted as natural. For him, gender is an illusion that comes up to exist in the process of ongoing interactions and undergoes a set of social restrictions to be seen as "natural".

Another important view about the relation between gender and social practices is that of Holmes (2009) who states that gender intersects with everyday life; one's behavior, and interaction. It is considered as functional which goes along Holmes view of doing gender. She (2009, p. 53) confirms "*gender is therefore about acting the part, but also about looking the part so that others will know how to treat us. When people interact they do so with other people, taking their cues about what a suitable way of being feminine or masculine might in that situation*". Holmes (2009, p. 54) posits that the constraints people face upon doing gender render it difficult to abide by the gender rules about being feminine or masculine and according to what others perceive them within "symbolic interactions" in order not to receive social sanctions. Punishment as a result of the symbolic interactionism of doing gender inappropriately marks gender to be a hard work and creates certain constraints one's gender roles.

Another work to be considered when dealing with gender can be derived from the ideas advanced by Zimmerman and West (1987) who claim that gender is constructed in our actions and re/produced in our everyday interaction. According to them, people interact about ideas of how to be feminine or masculine employing, doing gender by presenting ourselves as men or women through the process of everyday interactions. In this line of thought, West and Zimmerman (1987) focused on gender as an enactment and a doing in the social context which is embedded in interactional contexts. West and Zimmerman they (1987) claim that through the process of doing gender, social individuals fall under the gendering process between differences between boys and girls where differences/categorization between boys and girls. Besides, the process under which one becomes a boy or a girl either man or woman

relies on the social expectations and stereotypes that reinforce gender differences in society, both scholars suggest (1987) “*doing gender means creating differences between girls and boys and women and men, differences that are not natural, essential or biological. Once the differences have been constructed, they are used to reinforce the “essentialness” of gender*” (1987, p. 137).

Beyond, West and Zimmerman (1987) strongly highlight gender to be an ideological social construct that strengthens the sex categorization of the human nature of the body moving towards the formation of femininity and masculinity that reinforce the social hierarchies. People always enact gendered practices that are dictated from their early stages of birth. Basically, Gender becomes “invisible” in everyday interaction (Zimmerman & West, 1987, Uchida, 1992).

Nevertheless, in their article *Doing Gender*, Zimmerman and West (1987) introduced the notion of “gender as an accomplishment” i.e. a product of our social practices and behavior as a result of the social structure that establishes femininity and masculinity as social constructs and serves to reinforce male, female as dichotomous and natural. The previously mentioned relation between sex and gender is heavily criticized; they reject the distinction between gender and sex rather they believe that this relation is related to acts of doing gender is a set of “codes and conventions” about ongoing everyday activities and interactions that define masculine traits or feminine ones. Hence, gender is a series of performed traits in interaction determined by institutional practices and expectations.

Another worth considering view about the relationship between gender and society is that of Judith Butler (1990) who articulated the notion of gender performativity through her book *Gender Trouble: Feminism and the Subversion of Identity*. Butler (1990) rejects the binary distinction of sex and gender which are based on a dominant societal structure and claims gender to be a performance that is constructed through doing and acting in ways appropriate to be feminine or masculine based on the regulatory practices of gender that refer to a set of traits considered as true or false, She (1990) explains “*gender is the repeated stylization of the body, a set of repeated acts within a highly rigid regulatory frame that congeals over time to produce the appearance of substance, of a natural sort of being*”(p.43-4). It is worth noting that Judith Butler (1990) strongly theorizes gender as a social construct that affects the way an individual constructs himself as a subject; as a man or a woman who acts according to gender ideas which make people who they are. In this sense, gender is not a doing; rather it is a way of thinking about the world that reproduces femininity and masculinity which are submitted to constant change (as cited in Holmes, 2009). However, the violation of the norm will result in

“gender trouble” which considers that individuals are not free to enact gender as they perceive it that is ‘*a performative accomplishment compelled by social sanction and taboo*’ (Butler 1990, p. 271).

Moreover, Butler (1990) provides a critical account of gender which is a relation among subjects that depend on the context, thus, gender is a fluid variable and can be achieved through performance and repetition. It is a social and cultural construct that shifts through contexts and times; Butler (1990) declares that gender “*requires a performance that is repeated. This repetition is at once a reenactment and a re-experiencing of a set of meanings already socially established: it is the mundane and ritualized form of their legitimation*” (p.178). Beyond, the performativity of gender is culturally constructed, people perform acts upon the gender constructed behaviors, gender is considered to be an act constructed in society and governed by “regulatory norms” (Butler, 1993).

Besides, Butler’s theory of performativity addresses gender socialization in the way sex, gender, and sexuality are interconnected in society as well as how both sex and gender are socially constructed categories by arguing that gender is not “natural”, rather it is a repetition of acts. To this end, gender is not performed but performative and instituted through acts that make individuals engage in an ongoing process of gendering i.e. gender is rather something done for us (Butler, 1990, Holmes, 2007). Hence, gender socialization dictates how people should be and should act based on the social norms and expectations appropriate to each gender category i.e. men and women. Butler (1990) argues that gender socialization starts from the child’s birth at the moment his parents announce him as a boy or a girl, being masculine or feminine.

1.3.1. Socialization Processes and Gender

Gender seems unthinkable without referring to early processes of socialization. Holmes defines the socialization process (2009) as “*the process by which we learn how to act appropriately as members of a particular society. What I thought “appropriate” for girls and women, as compared to boys and men, often differs; a major part of socialization is about learning how to do gender*”(p.36). From early childhood, one learns to do gender that shapes his/her perceptions of masculinity and femininity specific to each culture that may be defined and experienced differently from one culture to another. Correspondingly, the society organizes and constrains particular gender roles perceived as appropriate for men and women. Masculinity and femininity are conventionally regarded as natural and have distinct characteristics; men and women conform their gender roles that are deeply reinforced by the patriarchal social structures that consider women’s role inferior to men in society.

The above view about gender socialization is clearly quoted in Simone de Beauvoir's most influential book *The Second Sex* (1972); "*one is not born, but rather becomes a woman*" which signifies that females are socialized through a process of learning the feminine characteristics due to the social norms which reinforce gender differences as the outcomes of culture rather than biology. So, masculinities and femininities are the product of cultural and social constructions. Also, Eckert and McConnell Ginet (2003, p. 11) note that women's cultural devaluation depends on the asymmetrical and patriarchal society where men's activities are more valued than women's activities.

The socialization process is fulfilled through the agents of socialization such as the family, schools, peers, toys, media, institutions, the educational system, books, and the media through which people learn to do their gender roles, values, behaviours, discourses, relations and attitudes. To illustrate, Oakley (1972) highlights the role played by family and the influence of the parental control on children's observations of the world around them, she argues that men and boys learn particular characteristics that conform to male gender roles while girls and women learn characteristics and behaviors that are seen appropriate to the female gender roles. Hence, girls are treated to be "more delicate and dependent" while boys are treated to be "more robust and independent". These different assigned social treatments influence children's performance in their everyday life and transform messages about acting as a boy /masculine or a girl /feminine according to their gender expectations.

Gender differences are also constructed through colors; the American sociologist Jessie Bernard (1981) notes that children under five are divided into color-coded worlds; boys are concerned with the blue world which contributes to encouraging them to be independent and active whereas the pink world is attributed for girls who are encouraged to be passive and emotional. The above mentioned colors are prevalent in their everyday life: at home, clothes, schools, even toys portray boys and girls differently; boy toys are portrayed as active and strong, boys always play with cars and arms while dolls and babies are assigned to girls which carry the message of idealized construction of womanhood, motherhood, caring and delicacy.

Moreover, gender differences continue to be highly manifested in toys that transmit a purely gendered and unequal world. In this vein, Coulthard and Van Leeuwen (2002) discuss the representation of toys as a semiotic potential meaning to convey particular social practices about the real world. They (2002) state that toys are actualized as modals of the world, since they represent a central medium for "contemporary social life". They (2002) claim that toys carry visual representations of particular gender roles in society. Women are regarded to be house-keepers, being represented as caregivers, related to the domestic sphere, holding babies,

seductive, and sexualized, while boy toys like action man, warriors, arms and cars convey the social meaning of holding control and power whereas their practices of fatherhood are always absent, they are associated with the public domain and action-oriented practices. Accordingly, toys are loaded with the social significance of gender roles that reinforce the notions of femininity- by being submissive, passive as well as sexual objects that point to a romantic idealized construction of womanhood- and masculinity – boys are always encouraged to be powerful, independent and superior (as cited in Litosselitti & Sunderland, 2002).

Interestingly, the work of Paul Willis's study *Learning to Labour* (1977) highlighted the importance of schools in dictating gender differences and the notions of femininity and masculinity. Paul Willis analyzed working-class kids who did "so badly" around the 1970s at secondary schools in England. Those boys failed because they did not value education anymore, for them, school work is associated with femininity. By doing so they preserve their image of "toughness" and claim that boys who succeed at schools were "cissies". His work highlights how schools succeed to reinforce gender ideas upon both boys and girls (as cited in Holmes, 2009:48). Intermingle with language use

Gender-typed differences intermingle with language use. Accordingly, Lakoff's influential work (1975) *Language and Women's Place* reflects upon women's subordination in the social order and men's power through language that establishes particular negative attitudes about women. One aspect that mirrors the gender differences in talk and communication is education; schools have become a site of early gender socialization, reinforcing the gender norms at childhood (as cited in Holmes, 2009). To illustrate, Lakoff (1975) claims that rough talk is a sign of gender differences; girls are discouraged from using rough talk than boys.

1.4. Language and Gender

The interest in gender awakened from the way gender affects our use of language. Based on this view, early studies have been conducted to investigate the differences in language use between males and females; among those researchers were Labov (1972), Trudgill (1975), Coates (1998), Tannen (1986), Cameron (1992), Fishman (1997), and Boakye (2007). Feminist early focus concerning gender studies aimed to uncover androcentric practices figured in men's and women's speech. Language is the first to be affected by social change. In this vein, language and gender research has witnessed a move from conceptualizing men and women as essentially different categories to social constructivism that emphasizes the flexibility and fluidity of personal identity (Holmes & Marra, 2010).

1.4.1. Traditional Feminist Perspectives of Language and Gender

Research on language and gender has been considered worthy of study on how men and women use language. The arrangement of early work in gender studies is categorized within three classic claims: the “deficit” framework (Robin Lakoff, 1975), the “dominance” framework (Dale Spender, 1980), and the “difference” framework (Deborah Tannen, 1990), in dealing with male’s and female’s language use.

The deficit framework to language and gender claims female’s lack and weakness of language use. This approach evaluates women’s language as handicapped and as deviant from the norm that is male’s language. It is mainly attributed to both prominent figures: Otto Jespersen (1922) and Robin Lakoff (1975) who brought inspiring debate about women’s position in society.

The Danish professor of English Otto Jespersen devoted a chapter, entitled *The Woman* in his early work *Language, its Nature, Development, and Origin (1922)* that highlighted the difference between men’s language and women’s language. He stated that women’s use of language is deviant from the normative standard of language exhibited by men. He declared that women are deficient language users because of the patriarchal society. Beyond, he posits (1922, p. 240) that those differences in men’s and women’s communicative skills are due to the division of labor i.e. men are associated with paid work whereas women’s occupation is restricted to the domestic sphere and caring activities that “demand no deep thought” (as cited in Cameron, 1998, p 240). He has identified the following language traits associated with women:

1. *Women talk too much*
2. *Women have a smaller vocabulary than men and are more fluent in speaking. Men are responsible for introducing new words into the language.*
3. *Novels written by ladies are much easier to read because of their smaller vocabulary and easier words.*
4. *Women use half-finished sentences because they speak before thinking about what they will say.*
5. *Women use adjectives such as "pretty" and "nice". They also use intensifiers such as 'so pretty' and 'so nice'.*
8. *Women use adverbs and hyperbole too much.*
10. *Women use indirect expressions than men use.*

(as cited in Tracey Elliott, 2012)

Yet, Otto Jespersen has been criticized for lack of experiment and practical studies, relying only on books of literature that define men's language as the norm and others' language is considered as a deviant from the norm.

The deficit theory is also more associated with Robin Lakoff, a pioneer in the spectrum of language and gender studies. Lakoff (1975) claimed that women's language weakness was due to women's secondary position in society through being submissive, dominated, lacking authority, and users of weak language compared to men's language which stands as the norm. Lakoff argued that women's language largely reveals their lack of power in society. Her groundbreaking essay (1975) *Language and Women's Place (LWP)* unveiled the relation between language and gender by and the role of language in uncovering gender inequality in society. Lakoff (1975) started highlighting the effect of the socialization process on women's identity, conceptualized and treated as lady-like through specific repertoire such as "ladies" to be regarded as feminine (Lakoff, 2004). Lakoff articulated the term women's language that is deeply characterized by cultural ideology and stereotypes that affect women's socialization, drawing on their weakness in society. Lakoff argued that women's weakness refers to their socialization; however, women who assert themselves are considered non-feminine (Lakoff, 1975). She proposed a set of particular features to split women's language and men's language. This separation in language use is mainly due to power structure in the social order, referring extensively to women's language that reflects their oppressed and inferior social position as opposed to men who use superior language. Lakoff (1975) proposed the following characteristics that women tend to use that index their weakness and powerlessness in society:

**lexical hedges*

**women tend to use more tag questions than men which indicates uncertainty to what the actual speaker says.*

**rising intonation on declarative*

** The use of empty adjectives (cute, charming..)*

** The use of intensifiers (so, very...)*

**Hypercorrect grammatical forms*

**Super polite forms*

**No strong swear words*

**Emphatic stress*

** No jokes, lack of the sense of humor*

Lakoff provided the ground for both linguists and feminists to investigate gender in language use. However, her work (LWP) in 1975 has been criticized for many reasons. First,

Lakoff confirmed women's subordinated position through the powerless language used by women. Women's language is negatively evaluated that may prevent them from their equal rights. Second, Lakoff claims lacked empirical research. Her claims were only based on her observation and her introspection in her methodology. As a reaction, many researchers have tackled her work with empirical frameworks such as Cameron (1988) who conducted a study about tag questions and proved that tag questions used by women stand as effective and facilitative in controlling conversations. Through her study, Cameron (1988) confirms that tag questions are not an indication of weakness but as a means of maintaining control upon conversations.

Years after, several studies came out to highlight the unequal power distribution among men and women reflected through their linguistic codes, among them are that of Dale Spender (1980), Fishman (1980), and Zimmerman & West (1975) that mark another framework called "the dominance" framework. Hence, the dominance approach criticized women's subordinate position in society, compared to men who hold supreme power. It mirrored how power is distributed in society, focusing on speech style differences between men and women. The work of Zimmerman and West (1975): *Sex Roles, Interruptions, and Silences in Conversation*, studied interruptions and silence in conversations which perpetuate dominance. They observed 31 segments of cross-sex conversations in a campus of the University of California in 1975. They found that men interrupted women 46 times; however, women interrupted men only twice. However, in the same-sex conversation; speakers' interruptions were fairly distributed. These findings contradicted the claim that women were responsible for interrupting men. Also, they remarked women's silence was more in mixed groups than in the same gender group. Zimmerman and West (1975) claimed that silence denies women to get control over conversations. They concluded that men's interruption of women and control of conversations were due to their social dominance and perception as the norm, reflected through their control in conversation and interruptions.

The study of Zimmerman and West (1975) was highly supported by Dale Spender (1980), a prominent figure in the dominance paradigm who conducted a study in 1980: *Man –Made Language: Language and Reality*, highlighting the way sexism was exhibited in society. She stated that language embodies structures that sustain male's power through androcentric generic terms such as "Men" which is typically a masculine term that refers to both men and women. Moreover, she declared that language contains structures that serve men's desire for dominance. In this context, it is difficult to challenge men's position and to question their domination because it is sustained through daily talks and social conventions. Accordingly,

Fishman (1978) analyzed mixed-sex talk and found that women were asked to do “the shitwork” in routine conversations to keep the conversation while receiving little support. So women’s talk mirrors their subordinate position and then stands as inferior to men’s dominance that embodies unequal power relations in the social structure. Besides, works within the dominance paradigm offer a closer look about the circulation of power in patriarchal societies, established in varieties of conversations and daily interactions, controlling what is seen as appropriate and what is not for men and women. So, daily talk is based on an unequal distribution of power.

This theory focuses on women’s subordinate position in society due to men’s dominance and power that are reflected in their speech patterns and overemphasizing power relations associated with gender. As a response to this view, the work of William O’barr & Atkins (1998 [1980]), entitled *Women’s Language” or “Powerless Language*, analyzed witnesses speech and the way they were spoken to in courtroom *trials* in North California Superior Criminal Court. They referred to Lakoff’s findings (1975) about the features of women’s language such as hedges, tag questions, and hesitations that may not address women’s language but powerless speakers among men and women who use “weak” “female language”(Lakoff, 1975). Lakoff’s term of “female language” was later alternated by “powerless language” in O’barr’s and Atkin’s study. They proposed that Lakoff’s features were not typically associated with women’s language but the powerless speaker who mirrored their powerless role in society such as being a witness. They (1980) propose that women’s language reflects their subordinate position in the patriarchal society. The attempts provided by the dominance approach confirmed that men use linguistic resources to maintain their power over women and to portray women as passive victims, generating women’s oppression in society.

What appeared to be labeled as the “difference” framework or the “dual-cultural” approach emphasized the differences between men’s and women’s speech styles. The difference theory is also known as the sub-cultural approach that was proposed by Deborah Tannen in her book *You Just Don’t Understand* in 1990, arguing that women as a different sub-cultural group have different conversational styles used by men, focusing on their socialization process that differs their early childhood. Their different communicating styles are due to their engagement in different peer groups. Tannen (1990) summarized the different approach that falls under six contrasts resulting in cross-cultural miscommunication:

1. **Status vs. Support:** Men approach their world in a hierarchical social status and seek competition in their conversation. However, women approach their world in “a network of connection”, they are supportive in their conversation.
2. **Independence vs. Intimacy:** Men engage in competitive trials, they are likely to be independent. However, women are likely to favour intimacy to achieve consensus, support, and closeness in their “network of connection”
3. **Advice vs. Understanding:** Men tend to provide solutions to problems while women seek comfort, sympathy, and understanding.
4. **Information vs. Feelings:** Tannen posits that women seek closeness and connection to show their feelings but men talk to provide information.
5. **Orders vs. Proposals:** Tannen states that men use direct imperatives, however; women prefer suggestions to do things and ask in indirect ways.
6. **Conflicts vs. Compromise:** In specific situations such as the workplace, Tannen observed that men react verbally to an unattractive situation, while women seek to avoid conflicts and don't tend to oppose others through talk.

The difference theory challenges the dominance view that is basically based on sex differences and power relations. It maintains the claim that both boys and girls speak differently belonging to different sub-cultures but equally valid. It rather values women's differences in a positive way. Maltz and Borker (1982) work examined women's and men's differences in their talk. They used a cultural approach to male-female miscommunication of interethnic groups. They found that backchannel support was understood differently by men and women that results in cultural misunderstanding and miscommunication in cross-sex groups. They summarized that sex-differences fall under two main characteristics; men use competitive conversational styles, while; women adopt cooperative conversational styles. Moreover, the difference theory is mainly a theory of equality by differentiating men's and women's speech styles and assumes men and women to belong to different subcultures by experiencing different lives and different socializations from their early childhood.

The difference approach has received some critical responses to some of its basic traits such as men and women having different subcultures but equally valid languages. Aki Uchida's work (1992) *When “Difference” is “Dominance”* was among those who criticized the difference theory for two main reasons. First, Uchida criticized the difference approach for being “too simplistic” in treating men and women coming from different “cultures”. In this context, boys and girls are living within the same families and institutions. Second, he criticized the theorization of “power” and “culture”, maintained by the difference approach,

since it ignores the nature of power inequalities, reflected in speech patterns and separated from culture and context, opposing the claim that men and women have different but equally valid languages that can no longer exist out of the context of the patriarchal society. Uchida (1992, p. 52) states *“the dichotomization of “power” and “culture” as two separate, independent concepts are inappropriate because social interaction always occurs in the context of a patriarchal society”*.

To conclude, the three abovementioned approaches are criticized for holding ‘essentialist’ thinking about gender identity i.e. the assumption that considers gender as a fixed category or an essence trait. The researchers of the tree approaches treat men and women as belonging to two homogeneous groups representing all men and all women using different speech styles that are based on sex differences as an important social category in this binary opposition (Susan Speer, 2005). The deficit, dominance, and difference theories has received criticism on mapping gender differences on sex categorization, considering women as deficient language users, and female’s submissiveness under male’s authority. The three approaches ignore women’s roles in society, their identities, and the variability of the context (Janet Holmes, 1999).

1.4.2. Constructionist Understanding of Language and Gender

The social constructionist approach conceptualizes gender as social construct that intermingles with interactions. The social constructionist theory comes to be of much importance in language and gender studies to claim gender identity as social, fluid, plural, and constructed in discourse and practice, not a fixed and an individual core that is reflected in language.

Constructivists view gender as a learned category in regulated and predetermined patterns in culture; they reject the clear-cut between men’s and women’s language and emphasize the importance of culture and context in the dynamism of gender practices in understanding and constructing knowledge about the world. Besides, femininity and masculinity are considered as a continuum; people enact masculine identity in certain contexts and feminine identity in other contexts. So, identity is deeply embedded within context, Janis Bohan (1993, p. 13) notes *“none of us is feminine or is masculine or fails to be either of those. In particular contexts, people do feminine; in others, they do masculine”*. Accordingly, gender is not just something acquired but something done (Butler, 1990). Butler (1990) argues that gender should be seen as flowing and changeable. It should be based on the way we act at different times and in different situations based on repeated actions and behaviours associated with a particular sex.

Interestingly, the Social Constructivism focuses on the practice and women's interaction at their workplace. It posits that our embedded experiences of the world are a product interaction in the social worlds. Our experience of the world does not arise primarily from within us; rather it is co-constructed as we engage with social contexts through our practice. Our engagement in the social practice produces our experience in the world (Patton, 2013). Thus, Ann Weatherall (2002, p. 85) summarizes this view about gender conceptualization in the social constructionist approach "*gender is not a stable set of traits residing within an individual psyche and reflected in behavior. Gender is a social process; it is created and renegotiated in interpersonal relationships and encouraged and maintained through social structures. Gender is something that is done in social interaction*". Interaction is basic to the changing and developing nature of social identities and group boundaries. In the course of time, individuals engage in constructing aspects of interpersonal and intragroup identity including their professional identity and gender (Butler, 1999). This approach challenges the traditional basic concept of identity which has undergone many changes; identities are arguably not a "fixed core of self", rather they are multiple, shifting, contradictory, and subject to change depending on both structural and cultural constraints. Identities are never complete; they are always in "process".

With regard to the dynamic practices and identities that vary with different social contexts, the constructionist approach is also basic to the notion of Community of Practice (CofP) that rethinks the traditional notion of speech community, identity, and gender. As a reaction to traditional models of learning, Lave and Wenger (1991) elaborated the concept of "Community of Practice" as a component of the social theory of learning that celebrates diversity in the social and the linguistic practices and the fluidity of experience. Eckert and MC Connell Ginet (1992) define "CofP" as:

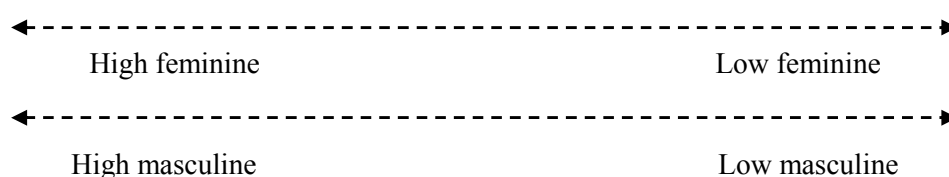
An aggregate of people who come together around mutual engagement in an endeavor ways of doing things, ways of talking, beliefs, values, power-relations- in short practices- emerge in the course of this mutual endeavor. As a social construct, CofP is different from the traditional community, primarily because it is defined simultaneously by its membership and by the practice in which the membership engages (1992, p. 464).

The CofP approach emphasizes the notion of practice of the social group, language in context, and language change. It focuses on what members do as practices and activities, since they belong to the same group. This approach assumes that language is only one component

of building gender identity. Moreover, it regards language as a motivating context for interaction. Besides, identity is a basic notion in CofP; it is fluid, social, and multilayered i.e. individuals participate in multiple communities of practices whereby identity is an effect of the multiplicity of the contexts. Hence, gender identity is accordingly produced and reproduced in terms of membership of different communities of practices and through differential forms of participation in a CofP (Litosselitti & Sunderland, 2002). Furthermore, the CofP framework advocates the notion of the multiplicity of individuals' identity and the variability of gender through the context, culture, society. It assumes that our identities are dynamic and co-constructed in the process of our everyday interactions. It views identity as a component that is constructed through our experiences and our reflections upon the social world (Weatherall, 2002: 07).

Hence, using the CofP framework is helpful in the theorization of gender identity which is produced and reproduced in the social and discursive practices that may change across cultures and times. Through the social constructionist approach, gender goes beyond the binary distinction between female and male based on the biological categorization, it opposes the traditional distinction of masculinity and femininity conventions, advocating the multidimensional identities that combine feminine and masculine characteristics and roles in what is called 'a continuum'. In the same vein, Sandra Bem (1974) categorized both concepts as two continua that an individual is either feminine or masculine; he holds both masculine and feminine characteristics. Sandra Bem characterized the early distinction related to traditional binarism between feminine and masculine characteristics (as cited in Steven Ray Wise, 2014, p. 25)

Figure (1.1). *Sandra Bem's continua (1974)*



Note. Figure (1.1) is adopted from Steven Ray Wise (2014)

Eckert and McConnell Ginnet advocates the applicability of CofP approach in the area of gender studies because it works as a constructivist approach mediating between language and identity through “gendered practices” that construct “social identities” of community members; being “men” or “women”, that are accomplished through our activities and daily

interaction with the members of a social community. Eckert and McConnell Ginnet (1992:08) suggest that “*gender is also produced and reproduced in differential forms of participation in particular communities of practice*. Also, Feminist theorists share in common the same principle with the CofP framework; holding that our identities are dynamically constructed that vary through the activities and the practices of the community members. So, identities are neither presupposed to be static nor stable rather they are fluid and multiple. Besides, the CofP framework has proved to be efficient in the field of language and gender studies; it is linked with the social constructionist approach because it is based on the conception of theorizing gender as a social construct, Cameron (1996) emphasizes:

Throughout our lives, we go on entering new communities of practice: we must constantly produce our gendered identities by performing what are taken to be the appropriate acts in the communities we belong to- or else challenge prevailing gender norms by refusing to perform those acts (1996, p. 45).

The CofP framework to language and gender studies relies on conducting qualitative, ethnographic research that emphasizes specific shared practices and membership of the individuals of different cultures and societies affect gender identities, concerning the transformation or the expansion of different forms of femininity and masculinity through the shared practices i.e. what members do through their membership in the communities of practice (Eckert & McConnell Ginnet, 1992). Mullany (2007) confirms the above view:

Gender is produced and reproduced in different memberships of CofP, and an individual’s exposure or access to a CofP is related to other categories of social identity as well as gender, including age, class, ethnicity, and so on. Gender is also produced and reproduced in differential forms of participation in a CofP, and this is crucially inked to the place of such groups in wider society (2007, p.27).

To illustrate, Wenger (1998) appreciated the CofP framework in analyzing the link between language and gender in the workplace setting where the “three dimensions of practice” intersect: “mutual engagement”, “a joint enterprise”, and “a shared repertoire”. Wenger (1998) declares:

Workers organize their lives with their immediate colleagues and costumers to get their jobs done. In doing so, they develop or preserve a sense of themselves they can live with, have some fun, and fulfill the requirements of their employers and clients. No matter what their official job description may be, they create a practice to be what needs to be done (1998, p.06).

Holmes & Stubbe (2003a) emphasize the importance of using the CofP framework at workplace to analyze gender identities constructions and perceptions, as they cluster with the workplace culture (Mullany, 2007:28). Also, McElhinny (2003) evaluates CofP as being a mediator between the local practices that shape individuals' identities and the macro "social structures". McElhinny (2003) argues:

Communities of practice articulate between macro- sociological structures such as class and everyday interactional practices by considering the groups in which individuals participate and how those shape their interactions. The groups in which they participate are in turn determined and constituted by their place within larger social structures. The notion of community of practice thus serves as a mediating region between local and global analysis (2003, p. 30).

The CofP framework gives much importance to gender performance but it does not go further to larger societal structures. It lacks institutional analysis to provide a better analysis of the relation between gender and language (Bergvall, 1999; Mullany, 2007). Bergvall (1999) urges the need to go beyond analyzing the local practices to a larger institutional level which controls the communities of practice, influences individuals' mutual engagement, and shapes their understandings of the social world. Also, Eckert and McConnell Ginnet (2003:32) elaborate the term "gender order" to stress the importance of analyzing gender in larger institutional practices and social structures, influenced by social conventions and ideologies that scaffold the gendered behaviour within groups, belonging to different communities of practice where gender operates in different contexts. Hence, gender is central within the context of "gender order" because it is influenced by dominant ideological and social conventions (Mullany, 2007).

1.5. Discourse, Gender, Identity, and Power

1.5.1. Discourse

Discourse is a central term in major research on gender and language. Despite the difficulty of finding or assuming one definition to the notion of discourse, many linguists endeavour to study discourse, referring to language use in written and spoken forms.

The term discourse has originally come from Latin *discursus* that means conversation or speech, and discourse analysis is usually defined as that analysis of language “*beyond the sentence*”. For Wodilla (1989) discourse is defined as actual practices concerned with talking and writing. David Crystal (1992, p. 25) refers to discourse as “*a continuous stretch of language larger than a sentence, often consisting a coherent unit, such a sermon, argument, joke or narrative*”. What is exclusive for discourse is that it is used in the social context and meant for a social purpose i.e. it almost refers to the interpretation of the meaning of the communicative event in a particular context of its occurrence. Talbot (2007, p. 9) confirms that discourse is “*the process of interaction itself: a cultural activity*” (Cited in Andrea Mayr, 2008). Notably, Cook (1989:156) argues discourse to be “*a stretch of language to be perceived, to be meaningful, unified, and purposive*”. In this sense, Fairclough (1989) asserts that discourse is interpretive through context, while its interpretation depends on feelings, beliefs, value, and knowledge.

Phillips and Hardy (2004, p.04) argue that discourse is “*interrelated set of texts*” which means a collection of various kinds of texts concerning a specific domain as the discourse of advertising, medical discourse, political discourse, and discourse of peace (Phillips & Hardy, 2002, p. 04). Accordingly, discourse means “*the fixation of meaning within a particular domain*” as well as representing and reflecting the world or a part of the world in representing a particular domain as political, scientific or any other domain (Fairclough, 1993; Jorgenson & Phillips, 2002). To put it differently, discourse is now occupying many aspects of everyday life, then, it is no longer studied separately, it is viewed as a social practice that deeply reflects upon the world and shapes reality. Jorgensen and Hardy (2002: 01) state that discourse must be seen as “*a particular way of talking about and understanding the world (or an aspect of the world)*”. Accordingly, Phillips and Brown (1993) suggest that texts cannot have meaning separately, fulfilling their interconnectedness with different discourses and only in the context of their productions where they can be meaningful. Hence, discourse is embedded in texts that are relevant in contexts. So, text is narrower than discourse; it is the *fabric* in which discourse is manifested (Talbot, 1995a, p. 24).

Basically, Fairclough refers to discourse as a practice which is necessarily conveyed and reflected through human *verbal* and *non-verbal* systems, and human activities. He claims that “*only in discourse is the world meaningful*” (as cited in Locke, 2004). So, it is necessary to consider our social reality. Phillips & Hardy (2002) recognize the integrated relationship between discourse and reality. They state that “*social reality is produced and made real through discourse, and social interactions cannot be fully understood without reference to the discourses that give them meaning*” (2002, p. 03).

Interestingly, Paul Gee (2001) suggests that discourse is *limitless* and argues that people create new discourses and replace old discourses with new ones through history with regard to technology and development. He claims that “*discourses have no discrete boundaries because people are always, history, creating new discourses, changing old ones, and contesting and pushing the boundaries of discourses*” (2001, p. 21).

Foucault (1972) studies the importance of discourse in defining people’s social reality as a system of representation and sheds light on institutionalized aspects of discourse in speaking or writing in a particular moment of history where certain conditions of existence define and govern discourse. Foucault evaluates discourse not as a piece of text, rather as “*practices that systematically form the objects of which they speak*” (Foucault, 1972, p. 49). Hence, discourse shapes and scaffolds people’s way of thinking and acting. Yet, discourse can limit the knowledge about specific topics. He (1972) defines discourse as:

We shall call discourse a group of statements in so far as they belong to the same discursive formation [...Discourses] is made up of a limited number of statements for which a group of conditions of existence can be defined. Discourse in this sense is not an ideal, timeless form [...] it is, from beginning to end, historical—a fragment of history [...] posing its own limits, its divisions, its transformations, the specific mode of its temporality (p. 117).

1.5.2. Discourse and Gender

The dynamic process of gender identity is constructed through language use. Particularly, the gendered discourses regulate gender roles and differences. Holmes and Marra (2010) stress the need of analyzing the discursive features within discourse in the process of constructing the social identity. They conceptualize gender as “*just one component of social meaning, an aspect of social identity conveyed indirectly through stances indexed by the*

choice of particular linguistic and discursive features, which may, of course, be multi-functional” (2010, p. 06).

Central to the profound link between gender identity and discourse, Jane Sunderland (2004) is well-known for combining the term “gendered discourse” which is related to the social practices; a context where the gender behaviours take place. Accordingly, the gendered discourses regulate men's and women's gendered practices. Many researchers view gender as something which is part and partial in daily life. It is always relevant in our speech, as Cameron (2001, p. 170) points out “*whatever else we do with words when we speak we are always telling our listeners something about ourselves*”. This claim is evident through the ‘indexing theory’ advanced by Ochs (1992) who declares that men’s and women’s speech styles index gender. He states that speech styles are considered as a pervasive context for stereotypes and ideological conventions. Ochs’ theory determines the relation between language and gender that entails a “tacit understanding” of norms, preferences, and expectations with regard to the distribution of particular social identities, indicating masculinity or femininity. Ochs (1992) posits that any linguistic aspect can index our social identities, since our language preference determines our identities. Ochs’ (1992) theorization confirms the view that gender is omnipresent in everyday life from. Sharing the same view, Sunderland (2004) states that gender indexes define the language used by men and women, reinforcing gender differences. She declares:

while one use of gender indicates particular grammatical properties of a language, the use of gender within which we are concerned here concerns humans and entails any differences between women and men being socially or culturally learned, mediated or constructed” (2004, p.14).

Accordingly, Holmes (2005, p. 57) evaluates gender as a “background framing construct” that influences people’s decisions about what is thought to be appropriate in the workplace, for instance. In addition, the indexing approach affects our choice and usefulness of speech and interactions based on gender distinction that is crucially linked with ideological beliefs; thus, expectations of femininity and masculinity are constructed, whereas speakers who violate the expected linguistic style are negatively treated and perceived as deviant from the expected norms (Mullany, 2007, p. 32-34).

The indexicality model reflects language used about gender that underpins identity perception in the social structure. Hence, gender is relevant in user’s speech styles through”

indexes”, Holmes and Stubbe (2003a; Holmes, 2006) summarized a list of typical and appropriate “feminine” and “masculine” interactional styles that reflect ideological and stereotypical notions about masculinity and femininity, produced through subtle ways in the managerial workplace context.

Table (1.1). *Widely Cited Features of “Feminine” and “Masculine” Interactional Style*

Feminine	Masculine
– Indirect	– Direct
– Conciliatory	– Confrontational
– Facilitative	– Competitive
– Collaborative	– Autonomous
– Minor contribution (in public)	– Dominates(public) talking time
– Supportive feedback	– Aggressive interruptions
– Person/ process-oriented	– Task/outcome-oriented
– Affectively oriented	– Referentially oriented
	–

Note. Table (1.1) is adopted from Holmes & Stubbe (2003a: 574). Holmes (2006:06)

The findings of Holmes & Stubbe (2003a) have been criticized for providing oversimplified and stereotypical gendered speech styles, claimed to be appropriate as masculine and feminine speech styles (Mullany, 2007:34). Beyond, their perspective mirrors how masculine and feminine speech styles are ideologically-oriented and full of expectations about the gender roles in interactions.

Gender norms reinforce people to display “appropriate ways of talking” or what Holmes (2006, p. 05) elaborates “appropriately gendered ways of talking” that are tied to social expectations and social meaning about gender meaning of femininity and masculinity, transmitted through “language in context”, using particular ways of talking and particular discursive strategies. Holmes explains that our ways of talking index gender which are associated with particular ways of interactions, behaviour, activities, and roles that are claimed to be “culturally coded as gendered”, and vary in relation to social contexts that contribute to:

The construction of their normative and unmarked gender identity; strategies which instantiate and reinforce ‘the gender order’. These form the discursive resources from

which such individuals construct or interactionally accomplish the kind of gender identity they want to convey (Holmes, 2006, p. 06-07).

The above-mentioned strategies are interpreted in specific social contexts within specific communities of practice of the professional settings where individuals' interactions are gendered as a part of doing gender. People use "*normatively gendered ways of talking*" that index gender and professional identities that serve as an indicator of their belonging to specific workplace through engaging in particular normative ways of femininity and masculinity, Holmes states that:

If gender is omni-relevant, then familiarity with what is unmarked in relation to doing gender identity is a necessary basis for engagement in any social interaction, including talk at work. Identifying norms of interaction, including gender norms, is thus an important starting point in interpreting the social meanings encoded in workplace talk, and especially in identifying the significance of strategically marked vs. unmarked usage in signaling gender identity (2006, p. 09).

Sunderland (2004) confirms through her book: *Gendered Discourses* that gender differences are transformed in discourse that shed lights "on people's reality". She argues that the naturalized gendered discourses highlight the clear-cut difference between men's and women's speech which provides the basis of how patriarchy is established in society (Sunderland, 2004). Accordingly, through Foucault's lens to power analysis, feminists take a step forward to resist gender stereotypes and roles that dictate the differences between feminine and masculine discourses that are defined in opposition to each other as a result of a hegemonic patriarchal social structure. Foucault's view claims that women's oppression is the effect of the naturalized means of patriarchy. Walsh (2001, p. 17) explains that patriarchy as "*a monolithic and totalizing system of oppression in which all men dominate all women*". Moreover, Walsh (2001) argues that "Musculinist Hegemony" establishes the basis for dominant discourses. He states (2001, p. 17) that masculinist hegemony is "*embedded in impersonal discursive practice and institutional structures commonly associated with men*". The same view is confirmed in Foucault's theorization of the concept of orders of discourse which is conceptualized in terms of social conventions and norms that influence the production of discourse, since those norms are produced in a patriarchal structure they are pure "Musculinist" (Walsh, 2001; Foucault, 1978). So, "Musculinist Discourse" produces the

discourse related to gender differences i.e. the production of masculine and feminine discourse, categorized as socially distinct.

Gender perceptions persist in ideology and stereotypes. Mills (1995) explains how gender ideologies construct the social structure and pave the way for the existence of gender inequalities through discourse. She (1995) confirms:

Ideologies of gender are not solely oppressive; they are not simply imposed on women by men. Women and men construct their own sense of self within the limits of these discursive frame-works, and build their pleasures and emotional development, often in conscious resistance to, as well as in compliance with these constraints (1995, p. 02).

To illustrate, Robin Lakoff (1990) sheds light on women's situation in the workplace. Women face "the double bind". They find themselves in a hard position; if they follow the expected feminine behaviour or speech, they will receive negative treatment, being inadequate for the job. However, women who adopt masculine characteristics face pressure, stigmatization, and negative evaluation. In this sense, women's position is threatened. Lakoff (1990) argues that women workers face *no win-situation*, she (1990, p. 206) claims that woman "*can be a good woman but a bad executive or professional; or vice versa. To do both is impossible*".

1.5.3. Discourse and Gendered Identity

Identity is a key concept in academic discourse and diverse domains such as linguistics, sociolinguistics, sociology, and cultural studies. Exploring the context of identity development is not an easy task, since the emerged definitions of identity make us reflect upon our personal and cultural identity. According George H. Mead, identity is a social process that is developed through interaction and communication. Identity is a flexible construction that is influenced by social variables such as gender, sex, ethnicity, and religion (as cited in Heike Vom Orde, 2016, p. 07).

Identities are constructed in multiple varieties of interactional contexts within different communities of practice that are governed by social norms and expectations within the larger societal structures (Eckert and McConnell Ginet, 2003; Holmes and Marra, 2010). Accordingly, Lemke (2008) highlights the role of society in shaping the social identity. He states that identity is a mediator between the interactional practices and the social structures, referring to social norms and conventions. Cameron (2009) confirms the same view that an individual identity:

takes place within parameters which those engaged in it did not set, and to which in most cases they offer no radical challenge to make sense to what they are doing as creative, agentive language-users, we also have to consider the inherited structures (of belief, of opportunity or lack of it, of desire and power) which both enable and constrain their performance (p.15).

Identity, as defined in Merriam Webster Dictionary (2011, p. 245), is “*the set of behavioral characteristics by which an individual is recognizable as a member of a group. The distinct personality of an individual regarded as a persisting entity; individually*”. Hence, the meaning of identity from this definition appears to be understood with regard to people’s interaction and behaviours within the group. Yet, identity development is a complex process through which people construct their identities based on their social world (Susan J. Dowling, 2011).

The works of Vygotsky and Erikson are considered among the theories that give importance to identity construction that is approached differently and in various ways. Many researchers were inspired by the work of Vygotsky (1962; 1987) in his sociocultural approach which intersects with a historical approach to identity formation, concentrating on local settings where social individuals are actively engaged in developing their identities and their self-reflecting images with regard to the changes that take place in the modern world. Vygotsky (1978) conceptualized the self as a complex phenomenon that evolves as people engage in their cultural interchange with others. Erikson (1979), articulated his Psychology Development Theory, conceptualizing identity as a development which is approached through individual’s coherence and continuity based on the agents of socialization including family, school, and work. Erikson (1979) maintained that identity remained essential in individual’s life process; he conceptualized identity as an integrated process between past life and ongoing construction which is the basis for future adult life. Identity develops through life stages by shedding light on the successful orientation from early childhood that lead to developing a specific personality traits based on their daily life experiences (as cited in Susan J. Dowling: 2011).

Beyond, Weber (1998) challenged the essentialist view to identity, which claims that identity is static. She provided a social constructionist perspective that perceives identity as a fluid and a social construct which evolves in contexts and through relationships. Hence, our identity shapes our experience in life; how we perceive ourselves and what images we convey

about ourselves. Weber considered gender and sex categories among the essential components of identity formation. Hence, gender is omnipresent in every aspect of our social lives. Gender identity; being masculine or feminine, is a socially constructed process, individuals learn male or female traits and roles assigned to them in their societies. It is one component of the multiple identities a person has. Also, Weatherall & Edley (1998) advocated that Community of Practice Approach. They adopted an ethnomethodological approach in analysing gender identity, focusing on the notion of practice as an everyday activity. This theorization contributes to revolutionize the essentialist view on the theoretical conception of gender as being simply defined in terms of biological differences (Weatherall, 2002). Based on this view, masculinity and femininity are construction in practice. Pilcher & Whelehan (2004) define masculinity as:

The set of social practices and cultural representations associated with being a man. The plural ‘masculinities’ is also used in recognition that ways of being a man and cultural representations of/about men vary, both historically and culturally, between societies and between different groupings of men within any one society” and femininity as “a set of attributes, behaviors, and roles generally associated with girls and women. Femininity is partially socially constructed, being made up of both socially-defined and biologically-created factors. This makes it distinct from the definition of the biological female sex, as both males and females can exhibit feminine traits (p. 82).

In the same vein of thought, Judith Butler and Simon de Beauvoir claim that femininity and masculinity are social traits that are constructed in the daily performances, based on biological sex of maleness and femaleness. In her understanding of identity, Judith Butler develops ideas from numerous philosophers and thinkers such as Austin’s Speech Act Theory that explores social reality as an illusion created through social signs such as language and gestures. Butler claims that what constitutes one’s identity as sex, gender, sexuality, and race are not constant or innate characteristics, rather performed characteristics. Butler argues that people’s performance is determined by the discourse which they are part of. The “regulatory norms” which control our performance as an invisible force, are constructed in our repeated acts that people perform, Butler (1999) argues that “*performance is not a regular act or event, but a ritualized production*” (p, 95). Butler studies the nature of gender construction and acts against the oppressed identities that are strictly reinforced by the regulatory norms that are embodied in our activities and performances in the real life. Butler (1999) claims that gender

identity is instituted through acts, she claims that “*gender ought not to be construed as a stable identity or locus of agency from which various acts follow; rather, gender is an identity tenuously constituted in time, instituted in an exterior space through a stylized repetition of acts*” (p, 179). To this end, gender is not performed but performative and instituted through acts that make individuals engage in an ongoing process of gendering i.e. gender is rather something done for us (Butler, 1990, Holmes, 2007). Hence, gender socialization dictates how people should be and should act based on the social norms and expectations about femininity and masculinity. Precisely, Butler (1990) accused feminism about generalizing the term “women” as a group of common characteristics and a common shared identity. This claim contributes to reinforce the binary demarcation between men and women allowing no room for the individual’s performance to address differences that exist among individuals.

In her pathbreaking work entitled *Masculinities* (1995, 2005), Connell (2005) conceptualizes the term gender as “*a system of social relations*”. In this sense, masculinities are treated as “*social practices*” attributed to men based on gender relations. In Connell’s article *Gender, Men and Masculinities* (2005), masculinities are characterized as “multiple within which there are hierarchies”, “collective as well as individual”, “actively constructed in social life and established in practice, they are conceptualized as practices of social patterns in the real world as sharing characteristics perceived as masculine”, “complex”, and “they change through history”.

Connell (2005) states that masculinity is a social construction that is dictated by sex roles, focusing on masculine behaviour. She (2005, p. 02) defines masculinity as “*by “masculinities” I mean the pattern or configuration of social practices linked to the position of men in the gender order, and socially distinguishing from practices linked to the position of women*”. More precisely, masculinities are associated with social structures and relations of domination. Accordingly, Connell argues that hegemonic masculinity represents multiple masculinities; a variety of dominant masculinity that vary across time, place, and culture. Connell (2005) argues that masculinities legitimize and perpetuate men’s dominance in society. Hegemonic masculinity is placed at the top of a hierarchy of historical masculinities including subordinate, complicit, and marginalized masculinities. Connell (1995, p.77) defines hegemonic masculinities as “*the configuration of gender practice which embodied the currently the accepted answer to the problem of legitimacy of patriarchy which guarantees (or is taken to guarantee) the dominant position of men and the subordination of women*”. Connell (2005) explains that masculinity is a historical product that traces back to American power and Global Imperialism. Hence, masculinity is gendered as men throughout history

occupied practices such as trade, soldiery, and colonialism that are characterized with violence, toughness, and power referring to the idealized image of men in society. Connell (2000) claims that masculinities are conventional, cultural, and social representations of men's involvement in the social practices including the discursive practices. She claims masculinity "*names patterns of gender practice, not just groups of people*" (Connell, 2000, p. 17).

Moreover, Connell (1987) states that gender hegemony operates to reinforce the subordination of femininity, and the marginalization of other masculinities. She advanced the term "emphasized femininity" rather than "hegemonic femininity" as a form of femininity that is oriented to accommodate the hegemonic masculinity. To this end, Connell's theory of masculinity is the most influential academic work that has received much attention in gender studies that provides a critical academic feminist analysis of historical masculinities, recognizing the diversities that exist within the social construction of masculinity means, considering and acknowledging the different practices and complex relations within masculinities such as domination, subordination, exploitation, marginalization, and exclusion within the patterns of hegemonic masculinity.

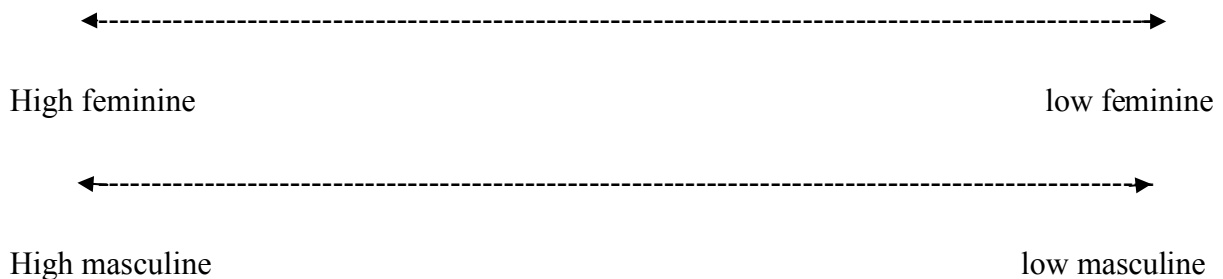
Jane Pilcher & Imelda Whelehan (2004) stress the close relationship between masculinity and social practices. They (2004) define masculinity as:

The set of social practices and cultural representations associated with being a man. The plural 'masculinities' is also used in recognition that ways of being a man and cultural representations of/about men vary, both historically and culturally, between societies and between different groupings of men within any one society (p. 82).

This definition conceptualizes masculinity as a form of gender and power relations. It excludes women, conceptualizing them as the "the other". Masculinity is based on cultural and social conventions that prioritize men, obscure and under-represent women as invisible in the social institutions and institutional discourses and practices such as employment. Beyond, the categorization of femininity and masculinity as two distinct characteristics (Hamilton, 2008) is rejected and redefined by many feminists and researchers (Hamilton, 2008). To illustrate, Sandra Bem (1974) analyzed masculine and feminine characteristics. She explains that one can be more than being masculine or feminine, rather he can hold characteristics of both femininity and masculinity. Bem (1974) presents her conceptualization in her model of

two continua, characterizing the traditional masculinity and femininity: (as cited in Steven Ray Wise, 2014, p. 26)

Figure (1.2). Sandra Bem's *Continua* (1974)



Note. Figure (1.2) is adopted from Steven Ray Wise (2014)

The above mentioned approach broadens the scope of identity options into ten extracted options (feminine, masculine, androgynous, near feminine, near masculine) from two identities (feminine/female, masculine/male). Throughout her model of sex-role, identity options allow females to merge between feminine and masculine. Bem (1974) uses the term sex role interchangeably with gender role. She considers gender and sex among the essential components of identity formation which intersect with other individual components (Steven Ray Wise, 2014, P. 26-7).

Table (1.2). Bem's *Sex and Gender Identity Options* (1974)

Sex	Sex role(gender)
Female	Feminine
Male	Feminine
Female	Near feminine
Male	Near feminine
Female	Androgynous
Male	Androgynous
Female	Near masculine
Male	Near masculine
Female	Masculine
Male	Masculine

Note. Table (1.2) is adopted from is from Steven ray wise (2014)

Society plays an important role in shaping gender identity, affected by prior gender norms and perceptions about femininity and masculinity. Josselson (1996) writes “*identity is what we make ourselves within a society that is making something of us*” (as cited in Steven Ray Wise, 2014, p. 30). Precisely, identity is an individual and social category, since biological and social / psychological factors intersect in the process of identity development.

Interestingly, identity continues to be the core interest of the majority of feminist researchers. Susan Jones & Elisa Abes (2000) offer a well established model called “Conceptual Model of Multiple Dimension of Identity” (MMDI), approaching identity from different perspective. This model conceptualizes that identity intersects with other identity dimensions (social variables) such as race, gender, culture, class, religion, and sexual orientation. It views identity as a fluid and dynamic construct, resulting in multiple identities. This model has proved to be significant in the way identity development intersects with other multiple and complex dimensions which vary due to the changing contextual experience of individuals (as cited in Jones & McEwen, 2000, p. 408). Interestingly, the central components of this model is “the core identity”, “the center” or “personal identity”, referring to the personal attributes and characteristics that is “the inner identity” or “inside self”, and “outside identity” described mainly as less meaningful and less complex than the inside identity (as cited in Jones & McEwen, 2000, p. 408).

The present model depicts how a person can live with a set of or multiple identities and how a given context influences identity development. Yet, one identity dimension cannot be fully understood in isolation from the other dimensions. In the same vein, the identity dimensions are perceived to be more or less salient to the core with the contextual influences that include: family background, socio-cultural conditions, current experience, career decisions, and life planning. It provides a deep understanding of the complexities of identity construction when multiple and diverse dimensions intersect. Through the process of the salience of one dimension of identity than others, the model confirms the evolving nature of identity that makes it fluid and changing through times and contexts (as cited in Jones and McEwen, 2000, p. 412). Identity can reflect how an individual internally perceives himself from the inside as well as externally reflects and reveals himself to others to depict the salience and the presence of diverse identities, depending on the time and the context of his experiences. Jones and McEwen state (2000, p. 410) “*no one dimension may be understood singularly; it can be understood only in relation to other dimensions*”.

It is important to consider another model known as “Minority Identity Development Model” (MID) advanced by Atkinson, Morten, and Sue (1989, 1993), conceptualizing gender

identity with regard to the social structure and power relations. This model claims that minority group experience a common force of oppression and unequal treatments which result in internal struggles and lead to developing internal self-identity as well as group identity. This model is a continuous process to study minority groups' behaviours and attitudes influenced by power relations as well as power imbalances that figure out in forms of oppression, dependence, inequality, and domination. These attitudes are divided into the following five coherent stages through people's experimentation of their world:

1. **Conformity:** refers to learning the culture, attitudes, beliefs, and values of the dominant groups which are perceived as positive, privileged, and superior. They mediate one's behaviour and affect him to perceive his own ethnic culture as less desirable and may adopt negative attitudes towards his own culture.
2. **Dissonance:** at this stage, one starts to be aware and upset about oppression. The person may have internal conflicts and starts to question the dominant culture by dominant and privileged groups on those minorities. He changes his view from being ashamed to be proud and interested in exploring his own racial or ethnic minority culture.
3. **Resistance and Immersion:** at this stage, the minority groups start to resist the dominant culture and the oppressive practices. The minority groups have self-appreciations of their belonging through sharing their values and history.
4. **Introspection:** it refers a sense of conformity being more thoughtful. The minority groups feel comfortable with their identities; appreciate their values, and the fact of being different from the dominant group.
5. **Synergistic:** minority groups have a selective appreciation of good qualities which deserve to be respected and appreciated based on the premise that all cultures are valued.

The MID model has concentrated on the group's identity as collective. However, other considerations have not been taken into account. The stages are presented into a process but sometimes individuals do not respect the ordered stages or stop without reaching the final stage. People are living with multiple identities. Also, people cannot neglect the social conditions, surrounding them. People are sometimes not even aware of the oppressions they experience because it naturalized through social ideologies in their developmental stages, and also because people share membership of more than one minority group (as cited in Heike Vom Orde, 2016).

1.5.4. Discourse and Power

Discourse is intrinsically linked with power relations, social conventions, and ideological beliefs. This section discusses discourse as a central notion within theoretical and critical approaches that analyze discourse in relation different social aspects.

1.5.4.1. Critical Approaches to Discourse and Power

In the late twentieth century, the term power has occupied various areas of research such as CDA; the most influential theory of language. Power is a complex and multifaceted phenomenon. Accordingly, social relations are characterized through equal and unequal relationships, focusing on specific ways of talking and thinking within the social practice. The mechanisms of the social structure are formulated with the working systems of power which influence people's interactional and institutional relationships within social and discursive practices.

Many theorists have explored the relationship between power and discourse i.e. how power influences discourse and how discourse serves to shape, reinforce, transmit, and expose power relations (Foucault, 1972). They were concerned with the way power affects discourse and how discourse creates power. Respectively, Fairclough (1989) provides a theoretical background of the relationship between discourse and power. He identifies two main types of relationships; "power in discourse" and "power behind discourse".

First, "power in discourse" is exercised through interacting in a specific context determined by certain relationships between individuals. Fairclough (1989) illustrates that face-to-face verbal interaction is a situation of enacting power in discourse, where "powerful participants" control and limit the discussion of "non-powerful participants". The practice of power circulates through discourse which naturalizes the exercise of power dynamics. Mayr (2008, p. 14) confirms that "*people consent to the particular form of power because dominant cultural groups generating the discourses represent them as natural*". Also, Thompson (1984, p. 132) stresses that discourse legitimizes relations of domination through "*a mobilization of meaning which legitimates, dissimulates, or reifies an existing state of affairs.*" (as cited in Esterman, 1999). Hence, discourse is considered as the instrument and the object whereby power is enacted and as a means of the production of social reality. The educational system is a site for political policies where discourse is enacted to maintain power relations in society (Ball & Goddson, 2007). In the same light of thought, Talbani (1996) points out that "*discourse is an instrument of power or an effect of power*".

Second, "power behind discourse" lies in the way dominant groups control and shape the social discourse that legitimates what counts as true (Foucault, 1972). Fairclough (1989)

states that power serves to constitute both social relations and the discourses that work to legitimize and naturalize the relations of power and domination. Thomas & Wareing (2004, p. 01) confirm that *“the values and beliefs we hold which seem to be “normal” and “common sense” are in fact constructs of the organizations and institutions around us, created and shared through language”*. Fairclough illustrates that among the aspects that identify discourse as an effect of power is the politicizing of conventions and institutions by the “holders of power”, he refers to medical discourse as a discourse type where the medical staff is considered to be the holders of power over patients. Hence, social conventions are maintained and constructed by these holders. This explains that there are always relations of power behind discourse, Fairclough (1989) argues that:

In both cases power is won, held and lost in social struggles. We might say that in terms of “power in discourse”, discourse is the site of power struggles, and, in terms of ‘power behind discourse’, it is the stake in power struggles- for control over orders of discourse is a powerful mechanism for sustaining power (1989, p. 74).

Discourse works as an effective power in the political domain that is a site for the struggle around the maintenance of power and access. Also, discourse serves to legitimize what people discuss and contributes to the oppression as well as social inequalities of powerless groups in society. In addition, Foucault (1980) explores the forms that power takes in structuring social relations through texts and talks. Foucault (1980) conceptualizes power in terms of relationships. It is conceptualized as a resource that is present in everyday social life. Foucault (1980, p. 98) claims that *“power is never localized here or there, never is anybody’s hand, never appropriated as a commodity or piece of wealth”*. Moreover, Foucault (1989) claims that discourse can produce, transmit and reinforce power, it can also render it fragile and makes it possible to thwart in a way discourses of resistance emerge as a result of the discursive practice and as an effect of power by those who struggle for social equality and recognition. For example, the Western current discourse about femininity, claiming women’s right of equality, contributes to shape women’s identities. Accordingly, women shape their practices, actions, and discourses to what is seen and claimed to be true.

Despite the difficult task to conceptualize the term power, many theorists and critical analysts invoke various definitions of the term power as a dynamic concept. Yet, power remains a matter of disagreement about giving a fixed and stated definition because of its

complexity and centrality in the construction of social reality. The theoretical debate revolves around the disagreement on how power is understood as “power over” or as “power to”.

1.5.4.1.1. Scott’s Approach to Power

Scott (2001) distinguishes between two directions that power takes; “the mainstream tradition of power” and “the second-stream tradition of power”. The former claims that power is assigned to the corrective forms of the state and its institutions. It is devoted to the exercise of “power over” that corresponds to the French term “pouvoir”. The later is concerned with the prevailing discourses of power that have a pervasive influence in society (Mayr, 2004). It stresses the capacity to do something, referring to the French term “puissance”. He summarizes the understanding of power in the following models:

1.5.4.1.1.1. Power as a Domination Model

The analysis of power as a social construct under a domination model began with the works of theorists, who highlighted its pervasive role in the institutions and in maintaining and prevailing domination in society such as Weber (1947), Lukes (1964), Dahl (1969), Althusser (1971), Foucault (1973), Bourdieu (1994) (Karlberg, 2005). Power has given not a single but different versions and definitions that came from the different theoretical backgrounds.

To begin, Max Weber (1947) linked power to authority and domination; he approaches power as a factor of domination; the formal authority legitimates the exercise of power. Max Weber defined power in terms of the power to do something, it is “*the probability that one actor within a social relationship will be in a position to carry out his own will despite resistance...*” (1978, p. 53).

Within the same line of thought, Dahl (1969, p. 80) related power to “the control over others”, he said that “*A has power over B to the extent that he can get B to do something that B would not otherwise do*”. He theorized power to be possessed by particular individuals; it is exercised to what fits their interests and exercised upon those who are prevented from reaching their interests and preferences. (Dahl, 1961). Moreover, Lukes (1974) made a radical contribution to the construct power through his work *Power: A Radical View*. He offered a generic definition which contributes to rethink the perception of power, he states: “*A exercises power over B when A affects B in a manner contrary to B’s interests*” (1974, p. 37). He discussed power “three dimensional” account within power as a domination model. First, one-dimensional view of power focus on power as a behavioral attribute that individuals hold power when they are able to make a decision i.e. a person who engages in a decision-making process. Precisely, it is related to “*the study of concrete, observable behaviour*” (1974, p. 17)

(as cited in Karlberg, 2005). Second, two-dimensional view of power is concerned with the ability of shaping an agenda, being a decision maker as source of power. Third, third-dimensional view of power highlights the ways dominant groups transmit power through pervasive systems instead of coercive ones by creating a false consciousness upon powerless groups to prevent them from recognizing their real interests. Moreover, the first two faces of power are related to the ways of how power can be used overtly to get someone to do something against their interests. Whereas, the third face of power deals with the way power manipulates others to do something they might not want to do by changing what they want (Lukes, 2005). Lukes(1974) conceptualized power as an ideological construct i.e. power could be exercised over individuals or groups in subtle ways which work in favour of the dominant groups' interests through preventing others from reaching their interests and reinforcing their blindness to the exercise of power over them.

Wartenberg (1990) categorized the two main aspects of power that are not mutually exclusive but mainly contradictory. Power as a domination model is concerned with the expression “power over” that refers to social struggles, and control over others, it has to do with power inequality characterized by oppressive power relations. Power over is almost associated with oppression, repression, abuse, domination, and coercion. In this context, it means taking it from others and using it to have control over them. Whereas, “power to” stands for power as a balance of capacity. Wartenberg (1990) made this distinction clear, declaring:

The expression “power to” and “power over” are a shorthand way of making a distinction between two fundamentally different ordinary-language locutions within the term “power” access. Depending upon which locution one takes as the basis of one’s theory of power, one will arrive at a very different model of the role of power in the social world (1990, p. 27).

Accordingly, Bachratz and Baratz (1970) highlighted that power can be exercised through covert ways that are present in social, political, and institutional practices that limit individuals' interests (as cited in Karlberg,2005). They (1970) define power as:

Power is also exercised when A devotes his energies to creating or reinforcing social and political values and institutional practices that limit the scope of the political process to public consideration of only those issues which are comparatively Innocuous to A. To the extent that A succeeds in doing this, B is prevented for all practical purposes, from

bringing into the floor any issues that in their resolutions might be seriously detrimental to A's set of preferences (1970, p. 07).

1.5.4.1.1.2. Power as a Capacity Model

In this section, power moves beyond the focus on specific groups or states to the focus on specific strategies that power takes in society. Mechanisms of power can be exercised in various ways. Thomas Hobbes posited an alternative definition of power as “power to”. He conceptualized power that is handled by someone as “*present means...to obtain some future apparent Good*” (Hobbes 1985 (1641), p. 150). Similarly, Hannah Arendt accentuated power to be “*the human ability not just to act but to act in concert*” (1970, p. 44). Besides, Hanna Pitkin (1972) studied the etymological concept of power which originated from the French word “*pouvoir*” that means “to be able”. She clearly defined power “*is a something — anything — which makes or renders somebody able to do, capable of doing something. Power is capacity, potential, ability, or wherewithal*” (1972, p. 276). <http://plato.stanford.edu/archives/fall2016/entries/feminist-power/>

Alternative approaches to power as domination system begun to exist since the writings of Giddens (1984, 1990). By power, he means “the transformative capacity” and the ability to make a difference in the world, there is an intended intention behind any action an individual carries. Power it is exercised in other forms with different strategies such as language rather than oppression and domination. For Giddens, the exercise of power is important in the social interaction where social agents create, exercise, and mobilize power mechanism which influence and limit their actions. Giddens (1985, p. 09) stated that power systems are exercised and mediated through social institutions that impose rules and control people lives; thus, they become naturalized in their everyday lives.

To move beyond, in developing his concept of hegemony, Gramsci (1971) highlighted that ideologies are among the mechanisms of power where dominant groups in society hold power over dominated ones. Power in this sense is not exercised by force but rather routinely. Gramsci posits that social institutions such as schools, churches, and courts are responsible for the cultural formation of individuals as “subjects” (Cite in Mayr, 2008). This type of power advantage the dominant groups to exercise their power system without disturbance from others through gaining consent from those powerless groups who will in turn follow the established “commonsensical” and universally accepted social conventions and orders, since the dominant cultural groups succeed to establish their naturalized discourses(as cited in Mayr, 2008). Gramsci (1971) claimed hegemony to be a “*total consent*” where “*dominant*

groups have to work at staying dominant". Mayr (2008, p. 14) identifies three stages in order to secure domination where language plays a central role. The first stage refers to constructing a "*ruling group*". The second stage deals with "*generating social consent*" with the powerless groups. The third stage includes "establishing institutions for coercions such as police, courts, legal system, prisons in order to improve and legitimize their practices through the social consent rather than coercive one.

In dealing with the literature provided in the process of theorizing power; there is a clear distinction between two basic stands related to power; "action- theoretical conceptions" that power is conceptualized in terms of actions of the social actors, and "constitutive conception" of power which is related to a broader systemic context where power is assumed to be an individualistic instrument and action oriented. Power constitutes social actors and their social world where they exercise power that provides effectiveness to dominant individuals to impose power over. In the same context, Saar (2010) articulates that the two conceptions about power are neither contradictory nor different approaches, rather the systemic conception of power is only a form of action theoretical conception of power, since it is exercise individually and power relations, in this sense, circulate through the social relations. Saar (2010, p. 14) characterizes the constitutive conception of power as a "*basic scenario remains individualistic at the methodological level: power operates on individuals as individuals, in the form of a 'bringing to action' or external determination*".

To illustrate the evidence of the intersection between the two theoretical bases of power, Foucault was among the first scholars to assign both stands in the understanding of the working mechanisms of power. He posits that the former approach works as "*if we speak of the structures or mechanisms of power, it is only in so far as we suppose that certain persons exercise power over others*" (Foucault, 1983, p. 217). In additions, he defines power as:

the multiplicity of force relations immanent in the sphere in which they operate and constitute their own organization; as the processes which, through ceaseless struggles and confrontations, transforms, strengthens, or reverses them; thus, forming a chain or system (Foucault 1979, p. 92).

To this end, the contested nature of power is still a matter of debate for many feminist who claim that the definition of power is shaped by power relations which is evident in the stand that conceptualizes power as "power over" as a result of men's exercise of power and domination in society. Lukes (2005) declares that we give meaning to power only in terms of

how we understand it how we act in terms of that construction. Lukes (2005) defends his standpoint through claiming that:

How we think about power may serve to reproduce and reinforce power structures and relations, or alternatively it may challenge and subvert them. It may contribute to their continued functioning, or it may unmask their principles of operation, whose effectiveness is increased by their being hidden from view. To the extent that this is so, conceptual and methodological questions are inescapably political and so what 'power' means is 'essentially contested' (2005, p. 63).

1.5.4.1.2. Foucault's Approach of the Disciplinary Power and Discourse

Foucault's work on power, knowledge, and discourse has provided an influential ground in the study of human science and discourse. Gaventa (2003, P. 03) acknowledges Foucault's theory:

His work marks a radical departure from previous modes conceiving power and cannot be easily integrated with previous ideas, as power is diffused rather than concentrated, embodied and enacted rather than possessed, discursive rather than purely coercive, and constitutes agents rather than being deployed by them(2003, P. 03).

Foucault's work on power provides an alternative and a radical rethinking of power. Yet it does not exceed the scope of "power over" or "power as domination" (Karlberg, 2005, p. 03). Foucault defines power in terms of relations. It is diffused and embedded in discourse, knowledge, and regimes of truth. The stand of power over is omnipresent in Foucault's analysis; he claims power to be the ability of the holder to make other individuals obedient, he (1999) argues:

Power is not a substance; neither is it a mysterious property whose origin must be delved into. Power is only a certain type of relations between individuals. Such relations are specific, that is, they have nothing to do with exchange, production, communication, each though they combine with them. The characteristic feature of power is that some men can more or less entirely determine other men's conduct-but never exhaustively or coercively (1990, p. 152)

Unlike the Marxist definition of power that is constructed as possession by the state or social groups, Foucault describes power not necessarily repressive, rather it is productive. He

explains the repressive role of power with regard to domination. While power is productive, since it produces reality, involves the desire to know, and it creates objects. Foucault asserts:

We must create once and for all to describe the effects of power in negative terms: it 'excludes', it 'represses', it 'censors', it 'masks', it 'conceals'. In fact power produces; it produces reality; it produces domains of objects and rituals of truth. The individual and the knowledge that may be gained of him belong to this production (Discipline and Punish: 194).

Foucault (1980) asserts that power "exists only in action", as Wilson (1995, p. 45) claims that "*a fixed power-as-a-noun becomes a constantly moving power-as-a-verb*", since we are constantly living within the network of power that is concerned with the relations between individuals through a variety of mechanisms where individuals become the vehicles of power. In Foucault's theoretical discussion, power is not considered as something wielded by people through oppression, domination, sovereign power, or the state, rather power is pervasive in society, it is omnipresent, and in a constant flux. He argues:

If we speak of the structures or the mechanisms of power, it is only insofar as we suppose that certain persons exercise power over others. The term "power" designates relationships between partners (and by that I am not thinking of a zero-sum game but simply, and for the moment staying in the most general terms, of an ensemble of actions which induce others and follow from one another) (1982, p. 786).

In his book, *History of Sexuality* (1990), Foucault gives a well augmented example, that new appearing discourses of "sexuality" changed our thinking about desire and selves. In his view, the emerging discourses of sexuality do not enlighten some pre-existing truth about human identity (sexual identity in particular), rather they create it through practices of power. Andrea Mayr (2008, p. 15) provided another example; in late modernity, control shifts from managers to workers who started to be recognized in terms of teamwork and hold a collective power that changes the rituals of exercising power by the state from up bottom or center out order to bottom-up order through the construction of teamwork i.e. team members' identities provide new opportunities for individuals to produce new identities and knowledge that reflect on Foucault's notion of power that is it does not only repress but produces reality, new knowledge, and the truth about the world through discourse.

Beyond, Foucault explains truth with regard to power and knowledge that is given a more credible source in scientific discourses and institutions that produce it. Particularly, every society has its regimes of truth according to their conventions, norms, and belief systems. Truth is linked to power system that is entailed within social institutions such as education (schools), media discourses, political, and economic ideologies. He argues: *“truth isn’t the reward of free spirit, the child of protracted solitude, nor the privilege of those who have succeeded in liberating themselves. Truth is a thing of this world: it is produced only by virtue of multiple forms of constraints. And it includes regular effects of power* (Foucault in Rabinow, 1984, p. 73-74).

Again, discourse entails power which is present in everyday practices because discourse reflects social reality. For Foucault, discourse is both an instrument and an effect of the operation of power system that defines what can be said and what cannot. In his book *History of Sexuality* (1990), Foucault traces back the history of sexuality to the seventeenth century. The discourse of sexuality appears in the act of “confession” which is the practice of the Catholic Church whereby people produce knowledge about their sexual desire i.e. through “telling the truth”, the church enacts power over the individuals. The confession to sexual identity as the most important part of human identity is controlled by the state’s power and the discourse of science. Foucault posits that new discourses about “sexuality” give a new direction of thinking about human desire and sexual identity which is created through the legal and scientific discourses. Foucault clearly defines sexuality as *“something that we create –it is our creation, and much more than the discovery of a secret side of our desire”*(Foucault, Sex Power, and the Politics: interview, 1982). Homosexuality, for instance, emerged as a concern of both medical and judicial research, allowed homosexuals during the 19th century to speak on their behalf and ask for recognition and tolerance because the knowledge spread about them gave them the power to claim sexual tolerance, and to recognize that sexuality is an absolute aspect of who we are. So this truth about homosexuals is provided from certain kinds of discourse which does not define what is sayable or not but only provides certain ways of argumentation.

In dealing with power as implicit within the social practice, Foucault asserts the coupling between power/knowledge concepts which are inextricably connected. Throughout power/knowledge, Foucault signifies that power can be gained through forms of knowledge i.e. knowledge is an exercise of power this is evident in the relationship between doctor and patient as well as teacher and learner that the powerful is the one who holds knowledge which

counts as true in official discourses such as medicine and education. Foucault points to a new disciplinary power in modern societies through the nexus of power/knowledge as a form of maintaining social control that is ensured by social institutions such as prisons, schools, and hospitals. Foucault challenges the notion that power can be wielded by the sovereign power/state, rather by the mechanism of power that is the disciplinary power.

In *Discipline and Punish: the Birth of the Prison* (1975), Foucault declares a new disciplinary power related to “The Panopticon” where torture and coercion of the penal system are alternated by the machinery of surveillance. Disciplinary practices are mechanisms of power in modern Western disciplinary societies, to regulate and discipline the social bodies, and monitor individual identities into “docile bodies”. The knowledge gathered in this way through the power system is controlled. Beyond, the relation of power-knowledge can in subtle ways oppress social individuals and deny them from getting access to knowledge (Pitsoe & Letseka, 2013: 24). At this point, Foucault draws on an emphasis of modern power as productive and repressive on individuals “*it simultaneously creates them as subjects by subjecting them to power*” (Amy, 2005). Hence, Foucault deals with power as a source of social control and discipline through a mechanism of surveillance i.e. the Panopticon which aims at disciplining and enhancing certain norms imposed upon the body behavior.

The panopticon is a type of institutional building designed by the English philosopher and social theorist Jeremy Bentham in the late 18th century. It functions as a surveillance machine to allow a single watchman to observe. This system can be applied in hospitals, schools, and prisons. Bentham argued that the panopticon is “a new mode of obtaining power of mind over mind”. One major effect of the panopticon is to induce in the inmate a state of conscious and permanent visibility that assures the automatic functioning of power over the body; the inmate should be visible and unverifiable² to enhance his bodily conduct.

With the same line of thought, in his book *Discipline and Punish: the rise of the prison* in (1975), Foucault tends to identify disciplines upon the body with the operation of specific institutions such as schools, factories, and prisons. He represents the metaphor of the panopticon (regime of power-knowledge) as a new formation of power that individualizes and internalizes the control of the body. More specifically, the disciplinary practices produce docile bodies. In his view, the panopticon is a regime of behavioral corrections that are enacted by the institutions from the top down order.

²-en.m.wikipedia.org/wiki/panoptic

Beyond, the human body is considered as the targeted object of the power system in modern societies where the knowledge of the body is acting as a subtle form of control which has a negative effect that human being is viewed as an agent of oppression³. Foucault concludes that the panopticon works within all kinds of institutions by claiming that factories, schools, hospitals resemble the prison, internalizing the disciplinary practices assigned by the system (Armstrong, p.2014).

Although many Feminists took advantage of Foucault's conception of the panopticon discipline, Foucault treats the human body as if the men's and women's bodies experiences do not differ; he was gender blind. The disciplinary practices render women's bodies more docile than men's bodies, since they restrict feminine behaviour in general. The feminine body exercises a huge range of politics of silence and powerlessness because the concept of "sexism" is endemic in Western political theory. Hence, society is given the burden for characterizing masculinity and femininity as peculiarly social artifices, embedded with enacting special gender norms that force, enjoin, and subjugate the feminine body to become an "ornamented surface". Hence, female's identity and subjectivity are defined according to a specific repertoire of gestures, body posture, and movement. Beyond, the style of the female body varies over time and across cultures which are deemed accepted by women as a social norm and ignoring the fact that the disciplinary practices -imposed upon their bodies- render them submitted to obsessions and preoccupations. As stated by Bartky (1990), diet becomes a prerequisite activity that women must undergo –diet disciplines the body hunger -, women starve themselves to have an appropriate body that is defined by society as:

it is women themselves who practice this discipline on and against their own bodies....The woman who checks her make-up half a dozen times a day to see if her foundation has caked or her mascara run, who worries that the wind or rain may spoil her hairdo, who looks frequently to see if her stocking has bagged at the ankle, or who, feeling fat, monitors everything she eats, has become, just as surely as the inmate in the Panopticon, a self-policing subject, a self-committed to relentless self-surveillance. This self-surveillance is a form of obedience to patriarchy (Bartky, 1990, p. 80).

³- Parched, O.(2014). *"The body-power relationship and immanent philosophy: A question of life and death"*. European Legacy,19(4), pp. 456-470.

Moreover, beauty becomes one of the requirements of femininity which forces women to engage in aesthetic treatments. With this regard, through the above feminine requirements of the ideal body, women feel restricted with regard to the gaze, and reluctant to resistance⁴ which may result in sanctions that are arising from men's gaze and judgment. Even though there is no legal sanction, women face a severe sanction embedded with punishing themselves for the fact of failing to conform to the social rules. Feminine body acts as a measure to the extent that all women have internalized patriarchal standards of bodily acceptability. Hence, women will naturalize the inscribed disciplinary practices to live their body as seen by others i.e. men who are relatively free from being watched.

Bartky (1990) claims that gender differences still exist in women's and men's experiences of their bodies. Women are more restricted than men, they have a tiny space in public; they make themselves small, narrow, harmless, tense, and nice. However, men who occupy the proffering position tend to be free and display more space than women. Feminine movements such as women's smile, make-up, soft skin, and touch must exhibit not only restriction but grace as well. While too much display is considered as a taboo i.e. women are considered as loose. As women are always subjected to the gaze, they have to act appropriately to the social standards of bodily acceptability. The disciplinary systems of power that control the body movement are naturalized in women's behaviours which tend to arise from within them and made unnoticed. Beyond, the female body is entering "machinery techniques" through docile bodies that the core interest in defining femininity.

Beauty is growing importance in modern time through media discourse that starts to shape women's image in society -as if women are seen only in terms of their body neglecting other parameters- as what Sandra Lee Bartky refers to as the inmate of the panopticon in Foucault's term i.e. a woman becomes the jailer of herself to conform to the disciplines of the body to please or to excite. These automatic disciplines succeed to render women subject despite the new ways of freedom that are available to them through controlling their bodies. They restrict their self-surveillance to their bodies only which are in turn "a new hold over the mind" in Bentham's words i.e. women believe in the idea that they are an agent but in fact, they are rendered subject. More important, if women resist these disciplines they receive the dominating gaze of the current patriarchy, and face the double bind; if they show resistance they receive sanctions and if they conform they also fall under the disciplinary practices determined by the social system over the body.

1.5.5. Ideology and Discourse

Language has always been the core study of linguistics and socio-cultural studies; it has assigned a crucial role in reflecting social realities as well as constructing and naturalizing ideologies. The term ideology has occupied many scholars and critical discourse analysts across many areas of studies. To fit the need of exploring and depicting the concept of ideology, some questions are asked: what is meant by ideology? How do ideologies operate in society? Where do we find them? And how are they created and reproduced in texts and talks?. To answer the set of questions we need to examine discourse as a social practice by social groups and social actors, since ideologies are structured and manifested in interactions.

The term ideology was coined by the rationalist French philosopher Destutt De Tracy in 1796 after the French revolution. he assigned to ideology a “relativist definition” as “*the (genetic) theory of ideas*” or “*the science of ideas*” (Mayr, 2008). Years after, Marx has defined the term ideology in a quite pejorative definition that is mainly critical “*ideology is the system of the ideas and representations which dominate the mind of a man or a social group*”. As a product of social structures, Ideology functions to control social conventions and culture, imposing and legitimizing dominant ideas that serve the power of a dominant group to maintain their dominant position in society (Mayr, 2008). The Marxist definition focused on the neutral side of ideology as claimed by Williams (1976, p. 129) to be “*a set of ideas which arise from a given set of material interests*”. Ideology for Marx, as claimed by Althusser, is a purely imaginary construct between individuals. Particularly, ideologies are a set of ideas and beliefs imposed by the ruling class that serves to protect their interests and privilege to power. For Marx, ideology seem to be an instrument of “social reproduction” where economic interests define political ones to maintain and rule the disempowered groups such as working-class people through prevailing a “false consciousness”; a false understanding of how the world functions, which is claimed to be in favour of their interests. According to Marx, ideology intertwines and material or economic interests, since it influence social ideas, beliefs, and values in producing what individuals are supposed to believe as true in terms of “false consciousness”.

Accordingly, Althusser (1971) depicts ideology in terms of how language operates to establish certain relationships between individuals. Ideology is what makes people bound together. It is “*a system of representations that masks our true relations to one another in society by constructing imaginary relations between people and between them and the social formation*” (See Jorgensen & Phillips, 2002, p. 14). To begin the discussion of Althusser’s theory (1970) on “Ideology and Ideological State Apparatus” or ISA, we need to answer

crucial questions that might come to one's mind: what is meant by Ideological State Apparatus? And on what basis is it established?

In his theory, Althusser's theory discusses how ideological mechanism works to construct individuals (all of them) as "subjects" that addresses the mind and their level of consciousness. Ideological State Apparatus is defined in the Dictionary of Sociology (1998), as a term developed by the Marxist theorist Louis Althusser to denote institutions such as education, the churches, family, media, trade unions, and law, which were formally outside state control but which served to transmit the values of the state, to interpellate those individuals affected by them, and to maintain order in a society, above all to reproduce capitalist relations of *production*. In contemporary capitalist societies education has replaced the Church as the principal ideological state apparatus. Among Marxists, the term is contrasted with the so-called 'repressive state apparatus of the armed forces and police, and is allotted a major role in securing compliance within developed capitalist societies.

His view is central to the idea that human subjects are only a societal illusion and distortion controlled through ideology. The subject formation functions through a repressive way i.e. through an "imaginary construction" of relationships. Althusser (1970) makes the distinction between Marxist Repressive State Apparatus (RSA), which assumes the state (government, police...) to enact the dominant and a repressive role by being "*violent*", and Ideological State Apparatus (ISA) where he lists state institutions (as schools, churches, families, culture...) as being crucial in masking ideology and working under it. He gives much importance to the educational system as "*dominant ideological state apparatus*" (1970). Beyond, he accentuates two main themes. The first theme is concerned with ideology that "*represents the imaginary relationship of individuals to their real conditions of existence*" and corresponds with how ideology, as told by the ruling classes, functions as masking the exploitative effects of the state on individuals as "subjects". Thus, ideology here is a societal coercion act in terms of relationships between the social subjects who are controlled by ideology. The second theme posits that "ideology has a material existence", it does not operate in terms of "ideas" or real "representations" located in the minds of individuals (subjects), but it is concerned with the exploitative practices and individuals' productions which are central to the view of those social subjects as responsible and "conscious" who are "acting by their own" beliefs and actions. For Althusser, the ideological notion of subjectivity is an illusion that individuals act on themselves. However, its effect has tricked individuals by being free that is a submissive act of the ruling class. Althusser declares four main features relevant to ideology

- Ideology has no history; it is an illusion, it “*is a representation of imaginary relationship of individuals to their real conditions*”.
- Ideology tends to subject people and interpellate them as subjects. Subjectivity is monitored by ideology from the ruling class on training individuals to become productive and active. Ideology is represented through actions and into practice.
- Ideology does not reflect the world but represents the imaginary relationships between individuals to the world. Ideologies are legitimized as natural which lead powerless groups to perceive them as reality, for instance, in every society, individuals are subjected to live according to specific rules even though they may not be necessarily correct or true. In this way, ideologies affect people’s way of thinking and render them passive and subject. They are mainly responsible for the creation of class inequalities, struggles, and dominance.
- “Ideology has a material existence”, they are always exercised and maintained through practice such as the imposed rules and conventions by the ruling class on the oppressed class. Ideologies control and shape social structures which are manifested through social conventions and actions such as goals, attitudes, social values, activities, and the structures of texts and talks

In the same line of thought, Fairclough (1992) highlights the importance of the discursive practice in the naturalization of ideologies that are significations of reality. Fairclough defines ideology as:

significations/ constructions of reality (the physical world, social relations, social identities) which are built into various dimensions of the forms /meanings of discursive practices, and which contribute to the production, reproduction or transformation of relations of domination (Fairclough,1992, p. 87).

Fairclough (1992) holds that discourse sometimes is embedded within ideologies to serve relations of domination. Ideological practices are exercised in subtle ways to legitimize and naturalize themselves, reaching the level of “common sense” that plays a great role in people’s blindness of the ideological discursive practices. Fairclough (1992, p. 90) confirms “*I should not be assumed that people are aware of the ideological dimensions of their own practices. Ideologies built into conventions may be more or less naturalized and automatized and people may find it difficult to comprehend that their practices could have specific ideological investments.*”

Thompson (1984, p. 03) states that ideology is manifested through discourse; he says “*to study ideology is in some part and in some way, to study language in its social world*”. By focusing on the shared practice and regular actions of the social group everywhere, Gramsci focused on the shared practices and regular actions of the people that make ideologies invisible; he (1971, p. 328) believes ideology to be “*a conception of the world that is implicitly manifested in art, in law, in economic activity and in the manifestation of individuals and collective life*”. Accordingly, Fairclough (1995, p. 76) evaluates ideology in terms of its location within actions, he posits “*ideologies are tied to action and [...] and judged in terms of their social effects rather than their true value.*”(as cited in Schaffner & Holmes, 1996). Fairclough (1995, p. 25) gives two major locations where ideology comes to existence; through structures of discourse (discourse conventions) and discourse events which are derived from social institutions that are controlled by ideology (as cited in Schaffner & Holmes, 1996).

Van Dijk provides a very influential contribution to the theory of ideology by explaining how it is linked to the discursive social practice. He accentuates the crucial role of discourse in producing, reproducing, and transmitting ideology. He (1998) claims:

Discourse is the most crucial of these social practices, and the only one that is able to directly express and hence convey ideologies. A theory of ideology without a theory of discourse is therefore incomplete. And, conversely, to understand the role of discourse in society, we also need to know their fundamental role in the reproduction of social representations in general, and of ideologies in particular (1998, p. 88).

Van Dijk (2004) defines ideology as “*a set of belief system that constitutes a person's belief, value, goal, and anticipation*”. Ideologies are the basis of shared social groups representations, regulating social groups and specific beliefs associated with knowledge, attitudes, opinions which may be occurred and changed and centrally structured in discourse through group interactions (as cited in Schaffner, 1996). Beyond, in his book entitled *Ideology and Discourse: A Multidisciplinary Introduction* (1998), Van Dijk formulates a multidisciplinary approach “socio-cognitive model” where he emphasizes the socio-cognitive nature of ideology in a way that ideology has social and cognitive properties because it makes the basis of social representations and sets of belief systems shared by the social group. He; therefore, locates ideology within the mental consciousness of individuals as a “mental representations of individuals” where he contrasted other theorists locating ideology only in

discourse, relating it to more obvious form as a “material” or “observable” (as cited in Schaffner & Holmes, 1996). In this respect, Van Dijk offers a triangular framework to link ideology to society, social cognition, and discourse. In his approach ideologies are, on one hand, cognitive stands for a system of social belief, and on the other hand, as “a system of ideas of social groups and movements” (1998). In this sense ideology legitimizes, institutes, and monitors discursive practices as one form of social practice, it may be either expressed or concealed in discourses in this sense the link between ideology and discourse is indirect.

In his article entitled *Discourse Semantics and Ideology*, Teun Van Dijk (1995) brings to light some basic assumptions related to his analytical framework of the theory of ideology within the multidisciplinary approach

1. Ideologies are cognitive; they are a “belief system”, they make part of mental representations such as ideas, thoughts, beliefs, judgments, and values.
2. Ideologies are social, since they are related to social group interests and practices. They may legitimize and justify their actions. They are also linked with group conflicts; struggles, power relations, and domination i.e. “dominant ideologies” are imposed, controlled, and legitimized by “dominant group” who justify their actions through these ideologies.
3. Ideologies are socio-cognitive. Van Dijk assumes ideologies to be both cognitive and social which are mediated by “belief systems” such as values, knowledge, opinions, and attitudes that are shared by the members of a social group. In his theoretical framework, Van Dijk stresses major concepts of social cognition that underline the social representations of social groups, among them social “norms and values”; he argued that ideologies are “the basic beliefs” and “basis of social memory shared by groups” (Van Dijk, 1998). Henceforth, ideologies make sense of new belief systems such as norms and values to work in the mind of the members, organizing and evaluating their actions. These values are assumed to be evaluated and judged as true or false, as right or wrong, and as good or bad that provide the basic social representations of groups. Some values are universal such as “equality, justice, truth” but others are “culturally specific” sociocultural beliefs related to specific social groups; each social group may select specific values which fit their interests and practices.
4. Ideologies are not “true” or “false”. Ideologies cannot be defined in terms of truth or falsity rather they represent the belief system of social group in terms of what is assumed to be true according to their interests.
5. Ideologies may have various degrees of complexity. Ideologies are generally defined as hidden and complex system of beliefs; they may vary from simple to very complex system in

different social groups. On one hand, they may seem to be simple, practical, well organized sharing specific principles and details of a specific group. On the other hand, they may function in a fuzzy, complex system of thoughts that monitor those shared ideologies which are found primarily by the “ideologue” i.e., the elites, political group, leaders, the well-educated ones, the powerful.

6. Ideologies have contextually variable manifestations. The fact that ideology are complex system does not mean that they are necessarily contradictory or absent they are given primordial and first place entailed in groups social practices in the “mental system” that controls various discursive interactions and actions. Van Dijk (1995) declares the main factors that influence these discursive variable manifestations of ideologies from personal to other contextual and social variation:

- People may belong to multiple social groups where different ideologies may sometimes lead them to express contradictory ideologies and social values (see Van Dijk 1995)
- Sharing different social norms, values, different practices, and actions
- Contextual constraints such as politeness, impression, and management
- Personal experiences lie at expressing different principles, motivations, values, emotions, and dilemmas (Van Dijk,1995, Billig et al, 1988)

7. Ideologies are general and abstract. Van Dijk claims ideology as an abstract system, certain conditions must be fulfilled such as situation-dependent to understand the context behind any ideological expression proposed and established by the members of a social group. Beyond, Van Dijk posits that ideologies structure the social representations of the social group that are fragmented in the same “group-related social practices and discourse.

Van Dijk (1995, p. 248) thoroughly provides some ideological manifestations that categorize and separate the social group members; these categorizations are most of the time fragmented in terms of “in-group” and “out-group” that appear in group social conflicts, dominance, and resistance. Accordingly, the group members are categorized in terms of their identity membership and their actions in the group, legitimizing “*discourses of who is and is not a good citizen and who are the evildoers among us*” (as cited in Mayr, 2008, p. 02). They define who belongs to the group and who does not in such a category position as “us vs. Others, White vs. Black, Men vs. Women, Citizens vs. Foreigners”, concerning who does not belong to one of the established norms does not deserve to be “equal citizen”(1995). Group members are sustained to work under some expected and pre-established roles which are

mainly action-oriented under some goals according to what fit and work with the interests of the group, and how they see themselves. Thus, Van Dijk goes beyond the political explanation of ideology which was only defined as “dominant” and linked to “ruling classes”. He offers new insights and new starting points, corresponding to the link between theory, discursive practice, and the shared systems of beliefs and representations among the members of social groups. He also explains the role of discourse in constituting, constructing, and transforming ideologies; he transcends the traditional conception of how the connection of power and ideology work. But, he explains how ideologies become a cognitive as well as a social system and fundamental beliefs of group members through the interconnectedness of social group members.

1.6. Conclusion

The present chapter covers theoretical issues related to gender identity and discourse. It identifies the binary opposition between sex and gender. It reports early studies about language and gender. Much of the literature about this concern aims at identifying the relationships between discourse, gender, identity, power and ideology. This chapter emphasizes the crucial role assigned to discourse in constructing gender identity and social reality. It ends with giving a better understanding of diverse theoretical perspectives that intertwine with gender norms, power relations, gendered identity, and ideological beliefs. The works and theories highlighted in this chapter in light of the research work give valuable considerations to the interrelation between discourse, identity, and social practice.

The next chapter shifts attention to the presentation of the gendered engineering workplace. It highlights the recent theoretical works that explore the nature of workplace culture. It also tackles the issue of gender segregation at the workplace. Moreover, It presents a critical concentration of some issues that gain centrality in the research related to the experiences and underrepresentations of female engineers.

Chapter Two

Female Engineers and Engineering Workplace

2.1. Introduction

The present chapter focuses on female engineers at engineering workplace. It draws on the definition of workplace culture, addressing gender-based division of labour, and power dynamics at workplace. This chapter highlights the discursive co-construction of females' engineers' professional identities in male-dominated engineering with regard to power, voice and visibility practices. Moreover, it looks at the details of the nature and the complexities of engineering workplace as a male-dominated profession, focusing on discursive and gendered/ing practices. It ends by identifying some of the many barriers imposed by professional and cultural assumptions on female engineers as minority group at male-dominated engineering, shedding light on women's discrimination and in/visibility.

2.2. Defining Workplace Culture

Workplace culture is a complex term that was introduced as a key concept in organizational sciences and management studies in 1980s, giving discourse a crucial role in shaping, describing, constructing, transmitting, and reflecting the workplace culture through the processes of communicative practices. Schnurr (2009) defines workplace culture in terms of a dynamic setting that is considered “*as a system of shared meaning and values as reflected in the discursive and behavioral norms typically displayed by members that distinguishes their workplace or organization from others*” (p. 80). Workplace contains varieties of cultures; “mini cultures” or “multiple sub-cultures” that co-exist in terms of difference (conflicting) and sameness (harmony or competing) contexts that are based on multiple discourse practices enacted by the members of the workplace culture who bring to the forefront their values and expectations. In this respect, the workplace is a “culture-specific based”; it is dynamic, performative, and constructed through organizational member's interactional practices (Schnurr, 2009).

The culture of the workplace serves to produce, reproduce, and transmit social and gender norms in workers' practices within organizations. Schnurr (2009, p. 81) sets up “*the culture of a workplace also sets expectations about standards of work normative organizational behaviors which may be reflected in members' activities, and in particular, in their communication patterns*”. Each workplace culture has its specific and distinct values and norms that are unique. It brings the workers under the same values, share the same activities, and gather around the same objective and interests within the community of practice. Hofstede (2001, p. 391) conceptualizes the workplace as a “*collective programming of the mind that distinguishes the members of one organization from another*”. In the same vein,

workplace culture is an important site to analyze gender reflection and construction that is considered as a crucial aspect in the functioning of the organization's culture.

2.2.1. Gender-Based Division of Labour

Throughout history, men and women worked in separate fields which are deeply influenced by society's culture and stereotypical perceptions, determined by the gender and the status of its members. Therefore, education and employment are among the indicators that reflect and perpetuate the division of occupations and career choice for men and women. (Moghadam, 1990)

Every society has quite specific stereotypes about male and female characteristics. Gender stereotypes about masculinity and femininity at social and workplace levels trace the history of the discriminatory thoughts used against women to justify men's dominance and supremacy in a patriarchal society where the interdependence between work and family is a prerequisite for the working women i.e. the nature of women's work is restricted to the home. Hence, gender division of labour refers to different kinds of work associated with men and women based on appropriate gender roles, since the social life is organized in the process of doing gender based on sex categorization. Gender differences are categorized and normalized in terms of social conventions into the hierarchy of domination and subordination. Particularly, the coupling between sex category and gender construction within the legitimized institutional practices reinforce the social structure where social change is needed to eradicate the distinctions between men and women that are based on sex categorization, West and Zimmerman (1987) state:

The sex category/gender relationship links the institutional and interactional levels, a coupling that legitimates social arrangements based on sex category and reproduces their asymmetry in face-to-face interaction. Doing gender furnishes the interactional scaffolding of social structure, along with a built-in mechanism of social control. In appreciating the institutional forces that maintain distinctions between women and men, we must not lose sight of the interactional validation of those distinctions that confers upon them their sense of "naturalness" and "rightness." Social change, then, must be pursued both at the institutional and cultural level of sex category and at the interactional level of gender (1987, p. 147).

Beyond, the gender division of labour is based on the attitudes related to sex characteristics such as women's ability to bear children and motherhood. Children bearing is claimed to

interrupt women to do their work perfectly; as a result, women are restricted to feminine domestic work which is tied to their feminine role and feminized social practices, while men's ability in terms of strong muscles stand as a predominant cause behind the division of labour based on power relations that reinforce gender relations, cultural conventions, and gender stereotypes of placing men and women in society. More important, paid work is regarded as a gendered institution; men and women are associated to work in different and opposite domains concerning time, the type of work, the salary gained, and efforts needed to fulfill the job. Gendered division of labour is determined by society's conventions that reinforce the gender differences and unequal distribution of work influenced by many social factors (Pilcher & Whelehan, 2004).

Education is one social factor that plays a fundamental role in children's socialization. Pilcher & Whelehan (2004) claim that girls are encouraged to be domestic (mothers and caretakers) as a characteristic of femininity. Education plans for excluding girls from paid work and professional occupations; it contributes to the conception that boys are the norm and girls are 'the others' i.e. it excludes them from being involved in higher forms of knowledge such as science fields, claiming that they are very difficult for them through their "underperformance" in these fields. Such fields are historically gendered and controlled by the masculine androcentric where the settings position girls always as sexually visible and subject to male's gaze (Pilcher & Whelehan, 2004, p. 91). Moreover, girls are taught to be subordinate while boys are perceived as superior and privileged in a patriarchal society. Pilcher and &Whelehan (2004) explain the notion of patriarchy in education use Simon de Beauvoir (1953) elaborated notion of "the other" - refers initially for analyzing and critiquing women's subordinate and subjective status that is taken for granted in patriarchal societies, depending on their cultures that are assigned to men- to highlight women's exclusion from some educational fields through their experiences in androcentric societies that become universal; a fact that help them to recognize the subtle ways masculinities create particular ways to position women as secondary to men and oppressing them which reinforce the supremacy of masculine representations in different domains in the social spheres (Pilcher & Whelehan, 2004, p. 91-93)

Feminist thoughts have analyzed patriarchy as a central factor in maintaining the masculine norms over the feminine subordinate position at professional and social spheres. From a critical standpoint of patriarchy, men are at the center of the mechanism of patriarchy while women are at the borders; they are invisible. Women's invisibility contribute to the

reinforcement gender relations which are mainly patriarchal i.e. women undergo oppressive practices such as unequal share of professional work and social status.

the workplace mirrors gendered activities in the workplace imposed by the “gendered discourses” appropriate to each culture and associated with the social conventions and ideologies, serving the dominant group of men in “musculinist ways” that are naturalized and accepted as the norm. The workplace context explains people’s behaviour at the work setting or even outside as social individuals influenced by gender differences and roles through the process of “gendering”. Mullany (2007) confirms:

this ‘symbolic’ gendering can be perceived within the dominant overarching perspective of gendered discourses, with social and cultural norms and expectations dictating whether women or men are thought to be best suited to particular social roles, activities and overall practices (2007, p. 42).

Patriarchy and power dynamics reinforce the distribution of professional labour into historically male-dominated and female-dominated fields (Kendall and Tannen, 1997). In the same vein, Fitzsimons (2002) draws on Gramsci’s hegemony (1971) to formulate “hegemonic discourse of femininity” and “hegemonic discourse of masculinity”. The former category defines women’s occupations in the domestic sphere such as caring and nursing. The latter category associates men with public occupations such as management that best suit their independence and competitive roles (Mullany, 2007, p. 43).

To illustrate, gender role stereotypes and leadership have been conceptualized by many scholars in social sciences, linguistics, and sociolinguistics that provide valuable insights on women’s experiences in their work. Kanter (1977) studies managerial workplace where female managers are identified within four restricted types of identity roles to do their professional roles i.e. women are forced into four gender position subjects. First, the role of “mother” is described as being emotional rather than professional, enacting authority with care giving to comfort her colleagues and peers. This role risks lacking respect which falls into providing service to peers rather than being respected for her independent and professional ability. The mother role is devalued through being too emotional. Second, the “pet woman” role is described as cute, girlish, funny, and mostly teased on by her male colleagues; she is seen as self-effacing and incapable of acting on her own. Third, “seductress woman” role is a restricted role to the use of sexual appeal to ally with male colleagues to gain influence through her sexuality. This type of woman risks her professional status, being

excludes from participation. Forth, the “iron maiden” role is seen as the most powerful of all that is dangerous, masculinized, displaying aggressive behavior, tough, and bitchy. This role is criticized for being unnatural and lacking femininity by displaying scariness and masculinity which can cause the female manager, in Lakoff’s words, the double bind. Through Kanter’s theory of “role trap” (1977), women are perceived as tokens and as a numerical rarity enacting gender-stereotyped roles in male-dominated organization. Females’ presence at male-dominated professions are categorized within the role traps and perceived as different from men who are the norm, leading the dominant discourse of masculinity (Mullany, 2007).

Correspondingly, Judith Baxter’s paper follows Kanter’s theorization of role trap about gender and leadership (1993 [1977]). She reinterprets Kanter’s theory of “Role Trap” into “discursive resources” that senior managers and leaders use to interact with their male co-workers within communities of practice. She has studies seven UK leading private companies in meeting contexts. She found much evidence of subject positions of mother and iron maiden roles and far less evidence of pet and seductress which were perceived as inappropriate in public spheres as meetings. She found that the role of mother is concerned with care giving authority, using expressions such as “I’d like to share with you”, using complements such as “very good, congratulate, enjoy”. This role helps women enact leadership effectively by doing power but only with care giving authority that is not likely to empower women in the long term. “The iron maiden” role acts in ways perceived as assertiveness and scariness to get others organized. This role offers women voice, and power. But, it can produce non-cooperation from colleagues, and negative respect, and stereotypes. The role of “seductress” appeared only with one women who made seductive offers and words like “naughty boy”. This role leads this woman to foreground a voice to achieve good working relations. It is avoided by the majority of female workers. The last role is the “pet woman” who is not fully competent, using humour, losing personal power through being teased on, whereas asking support from male colleagues who are proud of encouraging her capacities. This role provides power, voice, and attention, but subject to special treatment such as teasing.

To this end, Kanter’s (1977) “role traps” favours women who remain a small minority in boardrooms and highly sensitive to their minority status. Even though they are leaders, they are trapped; they undergo stereotypical subject positions through their linguistic behaviour. “Role traps” continue to be defined and constrained by gender category i.e. women must work in a masculinist way. These discursive practices/ role traps help senior women to accomplish

business, enact power, authority, and agency. Yet, “Role traps” constrain the range of subject positions available to senior women, limiting their speech and behaviour as they stand as a barrier to women’s progress to the top.

Marra et al (2006) studied “leadership” work. They found that women use a “wide-verbal repertoire” of stereotypically feminine and masculine speech styles. They concluded that even though leadership is categorized as purely masculine, an effective combination of speech styles are found in leadership workplace, merging between normative feminine and normative masculine speech styles as a continuum. Leadership workplace highlights the importance of belonging to the community of practice through the shared practices and legitimizing the conceptualization of feminine and masculine practices as one continuum.

Correspondingly, the social interactions are contexts for the operations of gender dynamics, social conventions, stereotypes, and norms. Holmes states that gender dynamics are normalized in peoples’ behaviours and speech at workplace. She (2006) states:

At some level we are always aware of whether we are talking to a woman or a man, and we bring to every interaction our familiarity with societal gender stereotypes and the gendered norms to which women and men are expected to conform. We orient to norms ‘as a kind of organizing device in society, an ideological map, setting out the range of the possible within which we place ourselves and assess others’. In other words, gender is an ever-present consideration, though participants may not always be conscious of its influence on their behaviour (2006, p. 02).

Dominant values and social norms govern workplace culture to impose “masculine” and “feminine” workplaces that are reflected in the discursive strategies and in interactional settings. Holmes (2006) compares “feminine” to “masculine” workplaces; the feminine workplaces are mainly supportive, collaborative, facilitative, and care giving that are characterized with “*openness of feelings, supportive social relationships, and the integration of private and work life*’ (as cited in Alvesson & Billig, 1997, p. 116). Feminine workplace is more democratic and non-hierarchical structures, it is characterized “*by a marked orientation towards collaborative styles and process of interaction, together with the high level of attention to the interpersonal dimension*” (Holmes, 2006, p. 10). Whereas, masculine workplace is perceived to have more masculine interactional styles, claiming that men are the majority group who tend to be more authoritarian based on the taken for granted social norms. Yet, Holmes (2006, p. 11) states that some workplaces are perceived as more or less feminine

or masculine according to the perceived nature of the workplace where individuals conform to masculine or feminine workplaces at “different points within the same interaction”. Some workplaces contribute to be more or less hospitable to female and male, carrying a culture that tend to have “*different values, attitudes and preferred ways of interaction*” through “doing gender”; thus, gender performance is central in the construction of professional identity, conveyed through talks and actions, since gender is produced and reproduced through the participation and the interaction in particular communities of practice.

Accordingly, Fletcher (1999) claims that women use “people’s skills” referred to as “communicative skills” or “relational practice” in dealing with workplace communication as a feminine strategy to achieve effective work, foster participants’ relationships and behaviour, achieve their goals, and create teamwork that is gendered in the workplace interaction. Relational practice is characterized through being supportive and caring about conversation that lead women to be “unrecognized” and “unnoticed” (Holmes, 2006). Women’s disappearance and devaluation are reinforced by the stereotypical notion that women are supposed to be traditionally carriers of relational strategies which make their contribution in verbal interaction invisible, highlighting their marginal status and contributes to “*serve as gendered discourse resources for constructing a relatively feminine identity at work*” (Holmes, 2006, p. 93).

Certainly, the workplace is a pervasive context where various interpersonal interactions take place. It is a platform for feminine and masculine exchanges, styles, norms, identities, and conventions. Holmes (2006, p. 15) emphasizes that “*workplace culture is a multi-dimensional, complex concept, and one of those dimensions is often the masculine–feminine dimension. As they talk to others throughout the working day, people enact their ethnicity, their professional status, and their gender identity*”. In the same vein, people bring to their ongoing talk and action their social background and norms that is interpreted according to the social context which is crucial for the definition of one’s social identity being masculine or feminine. Again, Holmes (2006, p. 18) posits:

Through their behavior, and especially their discourse, participants in an interaction are continuously engaged in the process of constructing relatively masculine or feminine social identities. So, doing gender identity work involves constantly performing masculinity and femininity (p. 18).

Mainly, occupational-gender segregation or gender-based division of labour is marked with unequal segregation (Holmes, 2006). Women are more likely to face this kind of discrimination and under-representation at their workplace by the dominant group based on the social taken for granted stereotypes as women are expected to be inside the house, doing the household activities, fulfilling their domestic work, while men are expected to be the breadwinners, since they claim themselves to be the primary responsible of the family to supply all what is needed to their family members through working outside the home as paid work (Wells,2010; Holmes,2006). Based on the above view, Feminist Movement criticized the unequal share of work divided between men and women. They claim that women's responsibility at home; even though not paid, is considered as a kind of work that consumes time and effort. Feminists claim that women have the right to the share of paid work. Moreover, they justify that men are historically advantaged in the professional occupations that contributed in the maintenance and segregation of female workers who are dependent on the household work (domestic labour). This issue weakens women's position and representations at the professional occupations and labour market (Hartmann, 1981). Women's work inside the home acts as an obstacle to perform and fulfill their full potential at work which advantages men's dominance over women (Hartmann, 1981; Pilcher & Whelehan, 2004). Hence, men insert rules and construct the culture of workplace that transcends to hold power over women.

The historical and the traditional dimensions of labour are intrinsically present in societies despite the development and the increased number of women employees in the paid work. Women are still tied to the domestic division of labour related to the socially imposed gender roles of placing women inside the home. Women have to work hard to receive the same respect and recognition as men in the occupational settings. Accordingly, gender blind has received much interest in the workplace culture; it was the core debate of critical and feminist researchers in gender studies to highlight the subtle way that renders women subjective, subordinated, and invisible, and to give them recognition for their efforts in organizational practices. Women's invisibility and segregation in the professional occupations refer to men's historical dominance over social norms, paid work, and institutions in assigning traditional gender roles for men and women, marked by power relations because gender gets noticed and marked when it becomes a source of harm for the norm of course (Holmes, 2006). To illustrate, women engaged in non-traditional professions i.e. masculine domain, encounter constraints and in/visibility which is a highly complex process marked by exclusion and disadvantaged practices that women challenge to be recognized in male-dominated

organizations such as engineering (Faulkner, 2007). Women working in the masculine domain face the double bind; they have to supply a work hard as workers to gain recognition as women, and receive equal treatment as men. In masculine-dominated occupations, women are also subject to the men's "gaze" to their bodies (Foucault, 1977) that is a hard task for women to perform to challenge the institutional gender relations and to be accepted as workers in such domain.

2.2.2. Power Dynamics at Workplace

Researchers in discourse analysis studies paid attention to particular ways that discourse contributes to reflect gender and professional identities at workplace. In this regard, workplace culture is a context of existing realities about power relations and gender norms tied to the normative position of the social groups i.e. men and women. Power relations strongly operate in the workplace through overt or covert ways by the dominant members to govern people's behaviours, interactions, styles, actions, and relationships. Holmes (2006) claims:

Both power and gender relations may be constructed unobtrusively, through taken-for-granted, 'naturalized' conversational strategies, and reinforced in everyday, unremarkable, workplace interactions. It is those who are in positions of power deciding what is correct or appropriate in an interaction: who may talk, for instance, and for how long; what counts as a relevant contribution, and what is considered a digression (2006, p. 19-20).

In 1995, Lisa Adkins examined the practices that constitute gendered workplace through the "gendering of contemporary labour market" which highlighted the role of power relations between men and women in employment. She (1995, p. 01, as cited in Acker 1990, p. 146; Pilcher & Whelehan, 2004, p. 60) argued that "*advantage and disadvantage, exploitation and control, action and emotion, and meaning and identity are patterned through and in terms of a distinction between male and female*". According to Adkins' study (1995), men and women working in leisure parks perform their work differently. Women's work is doubled in order to fit the norms of this kind of workplace; a woman had to be a worker like man and a "sex worker"; she is a sexual object more than being a worker like man in terms of being attractive to her co-workers and bosses. Adkins (1995, p. 147) stated "*to be workers, women had to be "attractive" workers and carry out forms of sexualized work, whereas men did not have to do this*" (as cited in Pilcher & Whelehan, 2004, p. 60). Adkins argued that men's and women's works are gendered regardless of their performative roles and their status as workers in their

occupations. Hence, femininity and masculinity are produced through the gendered practices which are deeply influenced by the social expectations.

2.3. Women and Male-Dominated Workplace

Paid work continues to be part of an individual's identity and a source of satisfaction for many individuals. Dohery (2009, p. 84) suggests that "*work remains an important source of identity, meaning and social affiliation*". Yet, the workplace is loaded with discourses of gender and power relations based on social norms about the notions of belonging to the workplace setting. Gender stereotypes affect the distribution of masculine and feminine workplaces. Perceptions related to the nature of these jobs continue to be a result of gender stereotypes. According to the World's Development Report (2012), the roles that are given to women in society as wives, mothers, and caretakers influence their decision to allocate time to market work i.e. their social status has significant and negative effects on the time allocated to paid work that makes the degree of disagreement with the following statement "*a working mother can establish just as warm and secure a relationship with her children as a mother who does not work*" (World's Development Report, 2012, p. 224). Moreover, Frome, P.M. et al. (2006) confirm the above-mentioned view, suggesting that women prefer traditionally "female" professions because these occupations allow them to combine between work and family more easily than "male" professions, since the social expectation of women is to be the primary caretakers of the home. They argue that "*...unlike male-dominated occupations, female-dominated (such as nursing or teaching elementary school) or mental occupations (such as teaching high school) may appear more flexible*" (2006, p. 361).

The predominant factor behind occupational segregation is gender dichotomous society which assumes the difference of women's professional and social experiences. In the same vein, Obasanjo (1989, p. 26) asserts women's physiology as "givers and nurtures of life" and social responsibilities contribute to the national development of the country. However, gender discrimination forces women to bear more responsibilities, a factor for the categorization of certain social occupations as masculine or feminine jobs. Beyond, sex segregation of occupations contributes to influencing career aspirations, choices, and perceptions. Correspondingly, many researchers tried to understand how stereotypical notions affect men's and women's choices and perceptions of work. Astin's psychological model (1984) explains that work motivation for men and women remains the same, but their early socialization processes affect their work choices, resulting in different jobs (as cited in Patton, 2013). Gottfredson's circumscription, compromise, and self-concept model (2002) emphasizes the

integration between psychological and environmental variables where self-concept acts as a merger. These two variables circumscribe career choices for men and women based on their gender, social class, intelligence, interests, and values. This model highlights the importance of sex-role socialization in individuals' decision-making of occupations (Gottfredson, 2002). Moreover, Correll (2006) conducted a study about the effect of gender stereotypes about technical capabilities on the decisions of men and women to enter into the computer science domain. Correll proposes that stereotypical beliefs about men and women influence individuals' assessments of competencies, aspirations, and career-relevant decisions.

In addition to gender stereotypes that prevent women to engage in non-traditional jobs, other researchers focused on women's ability as an obstacle. Nevil & Schlecker (1988) propose that fear and success stand behind women's unwillingness to engage in these careers (as cited in Patton, 2013). Scullen (2008) explains the poor participation of women in a male-dominated trade. She challenges the notion that the physical strength requirement for male-dominated trade jobs is sometimes exaggerated. The nature of these jobs may demand less physical strength than housework and many traditional women's jobs. Particularly, nursing and waitressing are as physically demanding as some non-traditional jobs. Scullen (2008, p. 21) assumes that getting hired is the first obstacle, whereas women do not feel free and comfortable is considered to be the second one.

The need to cope with the current development and as women gain power through education as central to their public role, women's advantages to work in male-dominated occupations have increased. Ellis & Eng (1991) believed that women choose male-dominated fields because they are good (as cited Catron, 1997). This trend of women empowerment brought up the tendency to work in the masculinized occupation. Rebah (2007, p. 09-10) argues that women who own businesses and act as directors "*put the catalog of permitted gender roles into question. The woman who inserts herself into the masculine domain defies existing structure*". Women's work is no longer based on pure financial or marital need, but it defies acceptable social norms, and voices women out into the public contexts, relying on their identities as a dynamic variable to break down the binary opposition between male and female and the categorization between masculine and feminine identities.

2.3.1. Females' Professional Identities Construction and Power

2.3.1.1. The Construction of Engineering Identities

Researchers in discourse analysis studies and social constructionist approach paid attention to the particular ways the multiple and dynamic ways discourse contributes to construct professional identities at workplace, referring to gender as a crucial element in identity

construction. Particularly, the social constructionist approach considers identity as a dynamic concept that emerges depending on the social context through different discourses and practices i.e. identity is a multiple construct that varies according to the situation speakers position themselves through the discursive practice. Hence, identity is a complex category that depends on its construction, interpretation, and analysis (De Fina, 2003, p. 15). Van de Mierop (2008) draws on De Fina (2003) in analyzing the elements of identity construction through different levels of analysis which are the textual, lexical, and interaction levels. De Fina (2003) explains:

The lexical level refers to the use of specific words or expressions. The textual pragmatic level refers to textual logical and argumentative relationships both explicit and implicit. The interactional level refers to the devices and strategies used by narrators to index their stances and attitudes both towards their own texts and other interlocutors (p. 23).

The identity of the speakers is negotiated in the interactional practices, reflecting their belonging to their organizations. Van de Mierop (2008) states that speakers “*typically act as the mouthpiece of their organizations and they construct a specific image, which is usually positive, of their companies by using a range of discursive resources*” (p. 495). His analysis of institutional identity construction includes three main techniques of identity construction: identification, company presentation, and the suggestion of excellence (Van de Mierop, 2005). First, identification refers to the speaker's identification with his company, frequently using the institutional referent “we”. Second, company presentation refers to the speaker's explicit presentation within his professional company. Third, the suggestion of excellence is tied to the speaker's categorization of his company as the best, competent, and oldest through the implicit expression of the company's experience as a traditional player in the market. Moreover, James Gee explains that discourse both shapes and reflects our realities in terms of its relationship with context i.e. people use language to identify membership and construct particular identities in different social and cultural groups in society. He argues that identities are fluid and multiple through people's performance of discourse through different contexts (Gee, 2014).

Consistent with engineering discourses, Paretto and McNair (2012) explore the construction of multiple dimensions of engineering identities of students and professional engineers, intersecting with “discourse identity” and “institutional identity” in specific and local contexts as engineering; a context of the discursive enactment of engineering identity,

including analysis of texts, and discourse-based interviews at engineering workplace. First, Paretto and McNair (2012) suggest that “discourse identity” is created through language being verbal or written dialogues; it reflects people’s construction of their identities in their interactions. Second, “institutional identity” is related to larger structural authorities from which one can derive status and power such as institutional texts of laws and traditions as the case of engineering where “*institutional identity as they consider how national discourses of progress, technology, power shape engineering work*” (2012, p. 59). Their study demonstrates that “*engineering identity is inseparable from national, social and cultural contexts in which engineers work*” (2012, p. 57).

2.3.1.2. Women’s Identities and Power

Power has received much interest in Feminist debate about gender and power dynamics in society. It has given a central concern in feminist theory to criticize women’s inferiority to male’s dominance through a body of theoretical debate in revealing the different forms of women’s oppression. The feminist understanding of power provides similar thoughts but different approaches to power research. Allen Amy (2016) summarized the feminist theoretical debate of power in three main forms: power as a resource, power as domination, and power as empowerment approaches.

2.3.1.2.1. Power as a Resource

Feminists’ central concern is to struggle for social equality and achieve more egalitarian opportunities in all life aspects. Thus, power is perceived as unjust; it does not operate by force or coercion only, also through influence. It was considered a social good and understood as mental and individualized property. Feminists claim power to be a resource and a positive social variable that is unequally shared by social members who struggle to establish social equality between men and women. To illustrate, Susan Moller Okin’s book *Justice, Gender and Family* (1989) provided a valuable critique of the unjust society where women live, work, and bear the burden of the family. Particularly, she highlights American women's lack of gender division of labour. Okin calls for the abolition of the unequal gender roles assigned to men and women and a fair distribution of power as a positive social resource. Young (1990) criticized Okin’s understanding of power. Young conceptualizes power in terms of relationships, not as social stuff that can be possessed and distributed. By sharing Foucault's view on power, Young understands power as a dynamic concept which figures out through actions and social interactions that are categorized by relations of dominance (Amy, 2016).

2.3.1.2.2. Power as Domination

Allen Amy (2016) highlights many trends of the feminist critique about conceptualizing power as a domination model where women are subjected to oppression, whereas men are privileged and dominant in patriarchal societies. Many feminist writers criticize the influence of power on women's subordinated position because it was associated with men more than women. Lakoff (1975) argued that power as a domination model is associated with masculine traits such as aggression and competition receiving positive rewards, since masculinity is naturalized and indoctrinated in the social structure. While women who adopt masculine qualities receive negative rewards because these qualities are socially defined as inappropriate traits. Miller (1976) defined power as:

Certain modes of behaviour were typical of men than women. But it may be that these modes are not necessary or important to [its] meaning. Like all concepts and actions of a dominant group, "power" may have been distorted and skewed. It has rested almost solely in the hands of people who have lived with a constant need to maintain an irrational dominance; and their hands it has acquired overtones of tyranny (1976, p.117).

Miller (1982) advocated a redefinition of the concept of power that highlights women's valuable endeavours and struggles that enhance their empowerment to reach social change and equality. Miller concluded that redefining power is motivated by producing social change. She states that "*to be powerful in ways that simultaneously enhance, rather than diminish, the power of others*" (1982, p. 05).

Moreover, feminist consciousness has developed with writers who tried to broaden the theoretical analysis of power, claiming that power and domination are deeply understood and conceptualized by men, serving their supreme position as the dominant group in society. *The book of Nancy Hartsock: Sex and Power: Towards a Feminist Historical Materialism* (1983) articulated "The Feminist Theory of Power" by criticizing mainstream theories of power which are constructed in light of men's thoughts that exclude women from the process of construction. Just like the system of the economy such as a market that is controlled by the ruling class who understand it as a matter of exchange rather than a matter of production. Power and domination operate in the same way, since it is associated with the dominant group i.e. masculinity. Power is rooted in society and marked with men's domination over women. As a result, the feminist chief duty lies in redefining the concept of power from a purely feminist viewpoint. By doing so women will offer to it their lived experiences and struggles

which bring to light their pursuit of endeavour and work in social and economic reproduction. Hartsock claimed that calling for the redefinition of power from a feminist standpoint will move “*beyond understanding power as power over*” (1983, p. 12). She concluded that women’s definition of power moves into conceptualizing power as capacity. She declared:

women’s stress on power not as domination but as capacity, on power as a capacity of the community as a whole, suggests that women’s experience of connection and relation have consequences for understanding of power and may hold resources for a more liberatory understanding (1983, p. 253).

Nancy Hartsock (1983, p. 210-53) advocated a redefinition of power from a feminist standpoint that highlights women’s experiences in the social (re) production (Karlberg, 2005, p. 07). She (1983) declared:

Theories of power put forward by women rather than men differ systematically from the understanding of power as domination. While few women have theorized about power, their theories bear a striking similarity...The common thread...is the writer’s concern to argue against the understanding of power as dominance or domination; to attempt to point to other meanings of the term more associated with ability, capacity, and competence; to urge consideration of assumptions about power. Theorizations of power such as these have become widespread in the literature of the contemporary women’s movement... (1983, p. 210-24).

Young (1992) published a very critical essay on the distribution of justice where she called for comprehensive socialist feminism. She explained five figures of oppression, leading to social injustice: exploitation, marginalization, cultural imperialism, powerlessness, and violence. The five faces spring from the social structure. Cultural imperialism is associated with individuals' identification within specific groups; therefore, taking their culture as a norm where the dominant groups shape their interests. Whereas Exploitation is concerned with the powerful group who control the powerless groups to obey the rules, following their interests at the expense of their interests. Powerlessness is the reason for individuals to be identified within groups. Young draws on the Marxist theory of socialism where the powerless is dominated by the powerful or ruling class resulting in the exclusion from having access to decision making, receiving disrespect, and bad treatment. Yet, marginalization is worse than

exploitation because it excludes some social members from participation in society (as cited in Amy, 2005).

To add, Iris Marion Young (2005) reacted against structural inequalities of gender by defining the objectives of social movements; particularly the feminist movement, she (2005) claims:

In this dominant paradigm, the promotion of justice and equality requires non-discrimination: the application of the same principles of evaluation and distribution to all persons regardless of their particular social positions or backgrounds. In this ideal, which many understood as the liberal paradigm, social justice means ignoring gender, racial or sexual differences among people. Social movements asserting a politics of difference, and the theorists following them argued that this difference-blind ideal was part of the problem. Identifying equality with equal treatment ignores deep material differences in social position, division of labour, socialized capacities, normalized standards and ways of living that continue to disadvantage members of historically excluded groups (2005, p. 01).

2.3.1.2.3. Power as Empowerment

Allen Amy (2016) highlights influential theoretical overviews about the stand of power as empowerment. Her work has been valued in the theory of power. Feminists began to stress women's role in society. They articulated an alternative standpoint for the understanding of the power system in society i.e. a deep understanding of power does not lie in prevailing dominant thoughts, it rather carries in its essence empowering thoughts that are beneficial for women. Power as empowering approach springs up with the works of Mary Parker Follet and Hannah Arendt, although they did not claim themselves as Feminists. Their works succeeded to influence many feminist writers because they provide a positive figure of power that recognizes women's efforts instead of devaluing their status in the social order through linking power to concepts such as *"to be able to do, capable of doing something, power is a capacity, potential, ability, or wherewithal"* (Pitkin,1972, as cited in Amy, 2016). Arendt (1970) defined power as *"the human ability not just to act but to act in concert"* (p. 44). Her work is one of the most influential critiques to mainstream traditions of understanding power as oppressive that tends to have a masculine tendency. Power is understood as domination that will always lead to women's blindness to the social reality. Arendt's claim served as empowering women and raising awareness about the exercise of power over women.

Another aspect of empowerment is focused in the work of Mary Parker Follet (1942) who developed theoretical literature of power, distinguishing between two different types of power; power as coercive –power over- and power as coactive –power with-. According to Follet, power is always understood as coercive that the dominant holds over others. Power as coactive is associated with sharing other responsibilities, tasks, and rewards within a structure of power; particularly, in defending her theory of leadership. She claims that the leaders “*create group power rather than express personal power.*”. Power in this sense, enhance social and political relations (www.business.com/management-theory-of-mary--parker-follet--key-terms).

Jean Baker Miller’s view (1982) on power opposed power as a domination paradigm. She defines power as a “*capacity to produce change*” (1982, p. 241). She called for reconceptualizing power from a feminist standpoint, focusing on empowerment:

There is enormous validity in women’s not wanting to use power as it is presented, conceived, and used. Rather, women may want to be powerful in ways that simultaneously enhance, rather than diminish, the power of others (1982, p. 05).

Nancy Hartsock advocated power as empowerment. She defined power as an “*energy and competence rather than dominance*” (1983, p. 224). The theorization of power as a capacity or empowerment explains men’s construction of power to serve their domination (Amy, 2016). In the same context, the French Feminist Luce Irigaray (1985, p. 81) declared an alternative approach to power as domination; power as transformative. He urged to reject the definition of “*power of the masculine type*”, subverting to the masculine traditions of defining power to reach a change in the social order, and equality in the distribution of power among individuals (Amy, 2016). Moreover, Virginia Held (1993) perceived power as empowerment. She demonstrated that women have unique capacities as mothers and caretakers that advantage them to hold power. She claimed that “*the capacity to give birth and nurture and empower could be the basis for new and more humanly promising conceptions than the ones that now prevail of power, empowerment, and growth*” (1993, p. 137). Her insights are considered as new avenues of valuing women’s activities and receiving positive rewards in society instead of devaluing and obscuring their innate and unique qualities. This trend calls for the recognition of the important role of women in society in order to reach social equality.

Accordingly, Karlberg (2005) summarizes the stands of “power against” and “power with”, analyzing social relations and circulations of power. He observes that “power with” is

exercised in a mutual exchange between individuals, while “power over” operates in adversarial relations. Both axes of power can have two sub-categories where both share the category of power over. First, Karlberg (2005) states that “adversarial power relations” are divided into “power over” or “power inequality” (in this category power over is distributed unequally i.e. one group dominates the other), and “balance of power” or “power equality” (power is equally distributed; hence, no adversary dominates the other). This category is identified with oppression and hierarchical relations. Second, “mutualistic power relations” are divided into equal and unequal distributive relations of power. “Power equality” will end with “mutual empowerment” of all social agents e.g. a group of agents who create a market as an economic resource, share equal power. “Power inequality” leads to an “assisted empowerment” of the less powerful agent by the more powerful agents, for instance, the nurturing relation between a parent and his child, or a teacher and his student. This category is characterized by inequality which leads to empowerment. Karlberg (2005, p. 10) proposes the following chart that summarizes the two axes of power as an entire field of thinking and talking about power relations. It provides the vocabulary and the discourse that has an important role in prevailing social reality shared by the social members, and governs both patterns which are not “equivalent categories”.

Table (2.1). *Power: Karlberg’s Unified Schema (2005, p. 10)*

Power as capacity			
ADVERSARIAL RELATION		MUTUALISTIC RELATIONS	
“Power against”		“power with”	
Competition		Cooperation	
INEQUALITY	EQUALITY	INEQUALITY	EQUALITY
“power over”	“balance of power”	“assisted empowerment”	“mutual empowerment”
coercion	stalemate	education	synergy
domination	compromise	nurturance	collaboration
oppression	frustration	assistance	coordination
win/lose	lose/lose	(win)/win	win/win

2.3.2. Voice and Visibility at Workplace

Gender issues in organizations have been the core interest of many feminist theorists, exploring gender relevance in organizations from a feminist perspective through the theorization of voice and (in)visibility (Lewis & Simpson, 2005, 2007).

2.3.2.1. Surface and Deep Conceptualizations of the Voice

The surface conceptualization of women's voice literature traces back to the liberal feminist movement that claims the similarity between men and women in organizations. The surface structure of the voice refers to women's suppression and the "silencing of women's voice" that occur in the organizations. According to many organization studies, women are perceived to be different from men in organizations, while men establish a set of standards related to organizational practices; they are perceived to be the norm. To illustrate, Lewis (2017) highlighted the work of Gilligan (1982) who justified women's exclusion from the development theory, listening to men's voices and relying on their practices and experiences at work as the "standards"; while, obscuring women's experiences without valuing their voices. Women's silencing draws on "the weak presence" of women in literature and theorization. Patricia Lewis (2017) highlights gender blindness within organizations and refers to women's suppression at work. She (2017) states:

What is highlighted through research such as the women's voice literature is how women's silence in academic disciplines such as management and organization studies signals a state of absence and neglect that should be rectified by bringing women's voice and viewpoint into the theoretical conversation (2017, p. 08).

However, Poststructuralist feminism conceptualizes the deep structure of the voice with its relationship to gender. It defines gender as a cultural product that varies through historical contexts. Accordingly, gender is intrinsically related to voice as a particular category of social individuals. It is perpetuated through power dynamics which contribute to hearing some voices over others through discourse practices. Hence, power is central to the theorization of the deep structure of the voice. Lewis (2017) claims that the surface conceptualization of the voice explains women's exclusion in terms of gender differences, she states that "*what this surface focus doesn't take into account is the flawed and gendered nature of organizations and how women are judged against an invisible masculine norm*" (p.12). By contrast, the deep conceptualization of the voice analyses the gender differences focusing on the role discourse plays in the construction of gender differences and the suppression of women's position in society and at the workplace (Simpson & Lewis, 2007).

The deep conceptualization of the voice highlights that women's silence is dictated by masculine domination. It focuses on the gendered nature of the workplace, unveiling the masculine norms that are privileged and unnoticed in society. Women experience visibility,

while men experience invisibility, maintaining power dynamics as central to the norm and invisibility structures that are beneficial to their position in the centre. The deep structure examines power dynamics in maintaining and keeping the normative position as well as challenging the norm within and outside the dominant centre. Lewis (2017) states that “*while men benefit from deep invisibility by being associated with disembodied normativity, the invisible norm of masculine is regularly subject to contestation and ongoing struggles as marginalized groups challenge the dominant position*” (p. 12). *Beyond*, as women print their feminine traces into masculine domains like management; they gain visibility as workers in male-dominated organizations. Lewis (2017, p. 13) adds:

Within the field of management and organization studies, one significant challenge has come from the process of feminization but challenges to the norm of management around race and ethnicity are now also evident. “As Robinson suggests, while white men have resisted the process of ‘marking’, they have been partly decentred (removed from their occupancy of the norm) and this has helped to increase the visibility of both gender and race”(as cited in Simpson & Lewis, 2005, p. 1264).

Kanter’s work (1993) *Men and Women of the Corporation* highlights the cultural issues of visibility and invisibility that surround the organizations. She uses a feminist theoretical framework to analyze in-depth interviews with women working in organizations. Her work explains the problems that minority groups experience in their workplace. They are considered as the other; different from the norm, and subject to visibility status. Minority groups receive a positive and negative evaluation, depending on the minorities’ performance and achievement at work from colleagues and peers. However, the majority groups (the dominant groups) reinforce their dominant norms through the characteristics of the discourse and culture of the workplace to make the minority group different and outsiders such as female workers in male-dominated jobs. They are represented as physically weak and highly visible in terms of their sexuality, affecting their achievement and professional performance in organizations. Kanter draws on her work on women’s tokenism (1977) sheds light on the restrictions women face through stereotypical gender roles. She elaborates the four types of women in organizations; the mother role, the seductress, the iron maiden, and the pet role that are associated with negative evaluation i.e. through their different experiences and roles women workers face the double bind. The issue of women’s tokenism is tackled from the surface of in(visibility), associated it the pressure, the challenges, and the difficulties that

minorities experience in the workplace setting. Women are subject to invisibility; they are not recognized as citizens and social individuals, having equal rights with men. Their invisibility contributes to the reinforcement of gender stereotypes, and restricts their roles and choices of career jobs. As a result, women face an unequal share of work (occupational gender segregation). Accordingly, women as a minority group entail the gender segregation at work that disadvantages women as tokens from a surface structure analysis. Hence, the surface structure is related to the social differences between men and women based on gender segregation at work. Sagebiel (2008) claims:

Living in a two gendered society with gender segregation in professional sphere following a gender-segregated educational situation women engineers as professionals are embedded in a male domain. Working in a minority situation can lead to marginalization and exclusion or integration through adaptation of male working culture, which is characterized by strong competition, less cooperation, and teamwork besides overtimes and all availability (p. 423).

2.4. The Nature of Engineering Workplace

Many studies have proved that engineering workplace culture is perceived as men's Space, while women experiences of in(visibility) issues that influence their perception, participation, and success at workplace. Faulkner (2006) states that engineering workplace is marked by gender inclusive dynamics through the process of "doing the job". The workplace practices serve men who perceive that their presence is natural, affecting their sense of belonging to such culture. Beyond, Faulkner (2006) claims that these practices involve the "in/visibility paradox" that women experience routinely in their engineering workplace culture. Engineering as men's space is experienced through routine practices which show men's fraternity with each other and reinforce women's absence through dominant linguistic items such as the generic "he" and the term "men", referring to men and women. These workplace practices dictate the masculine culture of engineering and render women's status invisible. Women work hard to achieve "the same level of easy acceptance with new associates that men achieve" (2006, p. 11). The masculine culture of engineering is reflected through offensive specific "non-work topics of conversations", tolerated offensive humor, sex talk, and "dirty talk" which put women even other men uncomfortable. While any challenges or oppositions to face these practices put them into risk to lose "membership of the community".

Moreover, the in/visibility paradox highlights that workplace culture is a context for interactions that are characterized by more range of masculinities than femininities. Women experience pressure to show or to hide their femininity i.e. women are visible as women/feminine, but invisible as engineers who work hard to achieve membership. Precisely, women are visible (feminine) and invisible (professional status) at the same time. Women work hard to be visible through adapting characteristics to fit in the majority culture which is the masculine culture, while facing pressure not to behave in ways perceived masculine in order “not to lose their femininity”. Accordingly, Faulkner’s findings and observations suggest that men engineers describe women colleagues in terms of their physical appearance which reflect their perception of the female engineer as only visible in terms of appearance rather than professionalism.

Faulkner’s work (2007) uncovers complex gender and professional tensions in relation to the available masculinities of engineering; the technical/social dualism and gender in/authenticity about the “real engineer”. Women’s position is questioned in light with the conventional gendering of engineering which continues to reproduce women’s identities in terms of social skills, while the technical and technological abilities are associated with men’s identities that profoundly operate in the dynamics of engineering, including the normative pressure that constitutes engineers’ troubled identities at engineering as a community of practice. The normative pressure persists around men as the norm and renders women’s position as unusual and fragile. Women experience gender inauthenticity and (in)visibility in contrast to men who are safe because they hold the normative position which is taken-for-granted as normal. Faulkner sheds light on the gendering of engineering as a trivial “gender work”, she claims that *“since gender is intricately interwoven with engineering, as it is with any other social institution, gender and engineering are co-produced or co-constructed”* (Faulkner, 2007:334).

Gender is inauthentic for women, following the symbolic gendered norm about the technical/social dualism that stands as mutually exclusive i.e. to be technical means not to be social. Engineering is a normative technicist focus. Faulkner (2007) claims that engineers have “troubled identities” because they experience normative pressure as engineers who are significantly gendering; men celebrate “blue color” or “nuts and bolts” culture of engineering which fits the traditional association of engineering with masculinity. There is a strong focus on “mutuality” between the “nuts and bolts” and the “laws of physics” that correspond to science and technology, constructing and reflecting a technicist engineering identity

associated with the masculine code. Faulkner suggests that engineering will be more gender authentic for women if they adopt more technical skills as “real engineers”.

More precisely, Faulkner (2011) uses the term gender in/authenticity to unpack the non-congruence of gender in females’ engineering identities and to capture the gender congruence of males’ engineering identities i.e. engineering is perceived to be gender authentic option for men, while it is gender inauthentic for women based on gender stereotypes and the social conventional norms that reveal the in/exclusion within the technical/social dualism of engineering. Faulkner (2011) claims:

Certainly, the man engineer is the norm, in both senses of the term ‘norm’—statistical norm and sociologically normative. A crucial reason why engineering feels like a gender authentic option for men not women is because, in most countries and disciplines, the vast majority of engineers are men; woman engineers tend to be invisible (surprising) as engineers for the same reason. Numbers matter; they send a signal and shape our expectations—when people think ‘engineer’, they envisage a man(2011, p. 280).

Besides, Faulkner (2011) declares that all engineers face pressure and have to demonstrate their abilities to do the job in their early career to be taken seriously. Yet, women have to work hard to re-establish their professional identities and to prove their ability routinely to gain membership in their “occupational community of practice”, since their abilities and professional credentials are doubted. They need to be taken seriously which is “*an extra layer of practitioner identity work which women, and not men, have to be taken seriously as engineers*” (Faulkner, 2011, p. 281). Hence, Faulkner (2011) states that engineering is not gender-neutral (men and women are not evaluated equally) and loaded with “*several rather subtle and ongoing mechanisms serve to undermine women’s visibility as engineers*”(p. 281). The engineering professional identity is congruent with the masculinities (masculine characteristics), valuing the technician that fits with the nature of engineering. It justifies women’s fragile position expressed with labels like gendering categories used to reinforce the difference between men and women in engineering that associate men / masculinities with technicality and “masculine instrumentation”, while women/femininities are associated with people and expressiveness. This dualism transforms messages about engineering and gender marked about men’s normative position and women’s fragile membership as engineers such as “hard/soft, concrete/abstract, practice/theory, technical/social” (2011, p. 282). These categories contribute to affect women’s loss of professional self-esteem, confidence, and

doubt their engineering abilities. These categories reinforce women's discrimination and invisibility. Women's lack of their authenticity as engineers stand against their progress in engineering, Faulkner (2011) argues that *"like Tonso, I believe many women engineers internalize a sense of their fragile status as engineers; it is felt as well as perceived"* (p. 282). Through their invisibility, women receive certain traits and perceptions based on stereotypical "feminine identities" related to their physical nature which threatens their engineering identities and position as "real engineers" i.e. to be real women is not to be real engineer, real women in this sense puts them in a visibility position where they experience *"unwanted flirting and/or sexual harassment at some point"* (2011, p. 284). In a similar vein, woman's ability to bear children / as a mother stands as an obstacle against women's pursuit at engineering because many organizations claim that their motherhood acts against their achievements and their professional credentials as real engineers. Consequently, they cannot be fully-fledged as a full member of the community of practice which "reduces their visibility as engineers" (2011, p. 285). The fact of being mothers as a feminine characteristic makes them uncomfortable and do not conform to the norm of the organization. Accordingly, to be a real engineer is to be a man who is congruent with available masculinities in engineering. Faulkner (2001) suggests that women are obliged to choose either sameness or difference strategies; they either opt for sameness by adopting masculine norms in order not to be recognized as real women or opting for different strategy through which they identify themselves as real women/ mothers that is a gender marked category which means that the available femininities at engineering are polarized of "sameness and difference" choices. She clarifies that *"contrast to the fairly wide range of masculinities, even somewhat marginal ones, accommodated within the engineering workplaces"* (2011, p. 285). Faulkner (2011) states that gaining membership is mainly based on gender norms:

If to be a 'real engineer' is to be a man, and if 'men' and 'women' are necessarily different, then women engineers have to play down their identity as 'real women' if they are to belong in engineering. They must, in some sense, become invisible as women—what Jorgenson calls 'disqualifying their femininity' (2011, p. 285).

Faulkner (2011, p. 286) confirms the view that women have to be invisible through *"sitting on the margins of conversations about football and families, ongoing along with sexual humor or swearing, and so forth"* to 'fit in' the culture of engineering, negotiate the professional masculine identity, and cope with the workplace. Women experience involves

pressure to be real women (not to lose their femininity) and real engineers. Faulkner (2011) concludes:

gender (in)authenticity and the (in)visibility paradox create issues for women engineers which men engineers by virtue of being men rarely have to experience. Through numerous subtle and not so subtle dynamics, women engineers are perceived, and can feel themselves, to be not quite ‘real engineers’ or ‘real women’. Men engineers belong more ‘naturally’ on both fronts, whilst women have to do additional identity work on both fronts if they are to secure their membership in the community of practice (p. 287).

To conclude, gender in/authenticity and (in)visibility paradox of women’s representation at engineering are related to the fact that the majority of engineering workplaces are outnumbered by men. The culture of engineering is loaded by gender norms and expectations to serve the majority groups who practice ongoing strategies of exclusion and normative pressure to those who are at the margins; not to perform better. It is one reason that makes engineering resistant to change which is reinforced by historically gender relations and subtle mechanisms to ensure men’s stability and women’s fragile position at engineering. Engineering workplace needs to be changed through improving and normalizing women’s presence as real engineers. Faulkner (2011) declares:

we need to normalize the woman engineer—both in the statistical sense, that the numbers of women become closer to those of men, and in the normative sense, that engineering becomes as ‘gender authentic’ an option for women as for it is men. Only then will the (in)visibility paradox facing women engineers and the gender hurdles to belonging in engineering disappear (p.289).

2.4.1. Discursive Practice at Engineering

Joanna Wolfe’s (2012) interesting article *Communication Styles in Engineering and Other Male-Dominated Fields* shows that communicative and interactional styles convey gender-related differences and norms between men and women. Her work demonstrates that “stereotypically masculine styles” are exhibited in communicative styles, reflecting and constructing masculine identities in male-dominated engineering and exclude women from participation. She (2012) states that interactional styles at engineering “*create a double bind for female engineers who are perceived as unlikeable and difficult to work with if they engage*

in competitive communication and as insecure or incompetent if they do not" (p. 01). Female engineers face conflicts from their male co-workers in focus teams because they seem to be refused to speak or to voice their ideas. They are excluded to be recognized as member expertise; as a result, women quit participating in teams and even drop out their professions. Wolfe (2012) finds that two main factors are behind female exits in engineering that is monitored by men's dominance. First, it is evident through their communicative styles that "self-promotional communication" discourages female engineers and favours men who display aggressive behaviour and confidence, asserting their superiority over females in engineering teamwork, while women who confront men are excluded and receive social sanctions. Men use "self-promotional communication", while women use "self-deprecate speech" and prefer not to talk about their conflicts or shortcomings and technical skills as an "evidence for their insecurity and incompetence" as claimed by men. However, "self-promotional communication styles" negatively affect men and women that *"inhibit individuals from accessing their shortcomings, learning from their mistakes, and asking others for help"* (p.12). Second, "interruption" as a competitive communication style, acts as an advantage which is related to "status in a group" and characterized as an act of superiority that stands for men who use intrusive interruptions while females being interrupted are positioned in lower status and made silent (2012, p. 12).

Ella Roininen (2008) studies the physical representations of female and male engineers in engineering discourses. She positions their bodies in terms of "Mars/Venus repertoire", "Body/ Work repertoire", and "Chaos/ Order Repertoire". She (2008) claims that the above-mentioned repertoires:

reproduce discourses that ground the gendered distribution of labour directly through sexed bodies. The repertoire connects the productive and reproductive capabilities of male and female bodies to the ways female and male professionals are positioned with regards to the careers" (p. 145).

Her view signifies that female bodies are put at focus. However, their bodies are not congruent with technology; a characteristic of masculinity sets as the standard that and excludes women from participation in engineering field and reproduce the precept that *"women do not initially belong to the field of engineering"* (2008, p. 148). In this sense, male bodies go unnoticed. Roininen (2008) explains that *"the body/work repertoire presents engineering as a masculine activity, where women's bodies are an abnormality....women's*

bodies in the field of engineering constitute a problem primarily for themselves” (p. 149). She (2008) emphasizes that engineering is still a masculine signed and a male job where women constitute minority professionals that is reflected in the discursive construction of gender and professionalism related to the engineering context. She explains the three linguistic repertoires in relation the Finnish engineering workplace:

■ Mars/Venus Repertoire

Roininen explains the Mars/Venus repertoire by drawing on Gray’s conceptualization of gender differences (1992) *“Men are from Mars, Women are from Venus”*. This repertoire highlights the essential gendered differences between men and women at engineering that presents male engineers as “meticulous and task focus” and female engineers as “having a broad vision and good social skills”. Mars/ Venus repertoire reproduces the discourse of masculinity; men are placed within the sphere of technology; while reproducing the discourse of femininity through placing women within people/ social skills that are constructed as “essentially gender characteristics and essentializing the gendered distribution of work” (Roininen, 2008). These essential gendered differences and skills are based on the physical characteristics; they stand as complementary to each other that work later to generalize males’ and females’ professional identities.

■ Body/work repertoire

This repertoire is another gendered discourse that reinforces the gendered distribution at workplace setting. She (2008) states that this repertoire justifies “why there are so few women in the field of engineering” which is mainly due to “women’s lack of connection with technology” (p. 136). It is driven by gender bias prevailed in engineering that transforms the imagery female and male engineers. This repertoire presents male bodies as the norm who fit in technology; they thought to be “the standard”. Yet, female bodies are unsuitable with work and technology that reinforce the gender binarism at the workplace and serve “*normalizing the masculine culture and scrutiny of female bodies*”. Masculinity is reinforced through talks about men as the norm whose presence is normal. While the construction of femininity draws on female’s body “surveillance”, since they are perceived as “outsiders” and “subject to observation” in a field that is historically normalized by masculinity as the primary focus which is stated by men and women at engineering where “women’s attendance is questioned and scrutinized” (2008, p. 140).

■ Chaos/ Order Repertoire

This repertoire demonstrates that gender imbalances still exist at engineering, this interpretive repertoire is used as a “discursive strategy” manifested *through* “two rhetorical

constructions to achieve its effect of making gender uncontroversial” which are avoidance and confusion. The former refers to avoid speaking about “gender-related problems” by highlighting that there are only few women in the field of engineering, dismissing the idea that there is no existence of gender imbalances and discrimination. The latter is related to “different discursive tactic” to assure no existence of gender imbalances in engineering through creating chaos in a speech to restore gender harmony by “evading discussion of gender problematic” (2008, p. 161). This interpretive repertoire is not meant to polarize gender differences and inequalities but to restore “gender harmony in the discussion about imbalance” to avoid and ignore the presence of gender bias at engineering.

2.4.2. Representation of Professionalism at Engineering

Ella Roininen (2008) assumes that professionalism in engineering is conveyed through three main interpretive repertoires that engineering use to identify good engineer in ICTs professions through talks in doing engineering:

► Achiever

This repertoire is the most available when talking about engineering professionalism within the organizational context i.e. the role of a good engineer is tied with “successful completion” in this work. Engineers identify themselves with problem-solving as a central idea to reflect on the achiever repertoire that is aligned with “rationalistic observable and measurable objective” that fits the objectives of the company (2008, p. 202).

► Navigator

This repertoire is used to represent the “*well-founded professional capabilities and aims to achieve objectives defined by professional context*” (Roininen, 2008, p. 202), and highlights “good engineering practice”, entailing good skills and capabilities.

► Team player

This repertoire draws on engineers’ interactions within team work in the professional setting and cooperating to achieve good engineering professionalism. It focuses on action-oriented tasks towards and with other people. Roininen (2008) assumes that “*the achiever achieves professionalism by achieving these goals*” (2008, p. 203).

2.4.3. The Gendered/ing of Engineering Workplace

Research about the experiences of women at engineering professions and education highlights the tension and challenges that surround the field of engineering. A context that is loaded with gendered practices and the underrepresentation of female engineers, since the

culture of engineering workplace and education is perceived as man's domain and a male's oriented occupation.

Women's enrolment at engineering is decreased due to "the subtle taken-for-granted gender dynamics" to get membership. Faulkner (2006) raises a central question "*how are the practices, cultures and identities of engineering more appealing, comfortable for and supportive of (more) men engineers than women?*". Her findings demonstrate that engineering practices are gendered through creating particular masculinities and femininities at engineering. In order to re-establish a sense of belonging into engineering, engineers have to learn to behave according to the company's context and engineering culture. Hence, engineering is a context for complex gender dynamics that provide certain mechanisms of masculinities and femininities.

2.4.2.1. Engineering workplace and masculinity

Engineering as a masculine domain appears after World War I. The term "engineers" was a name given to the military troops who produced engines of the war (Skaggs, 2013). As a result, hegemonic masculinity appeared to be the dominant culture that sustains engineering as a profession and construct a historically dominant, powerful, and masculine image (Ruth Oldenziel, as cited in Skaggs, 2013). Skaggs (2013) draws on Wajcman (2000), arguing:

Research on stereotypes has found, "a general tendency, across every country investigated, that people on average have an easier time associating science concepts with male, rather than female". This suggestion that what it means to be an engineer is mutually exclusive. When people speak of engineers, there is an instant and conscious mental image of the type engineer, namely male, unless it has been otherwise noted as a "female engineer" therefore exhibiting the "archetypically masculine culture" of engineering (p.23).

The cultural environment of engineering is perceived as masculine; it privileges men and forces women to "fit in" the male-dominated norms of engineering that strongly dictate how workers create the culture of their environment and how they are affected by its culture. Engineering reinforces the gendered practices which are naturalized and assumed as the taken for granted norms. Skaggs (2013) adds:

with the culture dominating to be predominately male, it stands that males have easier access into this culture than females; thus allowing the engineering environment to

continually reproduce itself as predominantly male since being an engineer is more “gender authentic” for a man than for a woman in our culture. Passing for a “gender-neutral engineer” does not work because the job of engineer is never gender-neutral even with perceptions of engineering changing all the time (p.23).

Victoria Bergvall’s (1996) work *Constructing and Enacting Gender through Discourse/ Negotiating Multiple Roles as Female Engineering Students* aims at exploring gender roles that are “enacted through discourse”. Bergvall (1996) focuses her research on female engineering students in mixed small groups while analyzing doing gender through interactions in the engineering setting in US Technical College. Her study demonstrates the pressure females’ students face; when female students resist the stereotypical and androcentric gender roles through displaying stereotypically “masculine speech” being “assertive” and engage in active roles, they receive a negative evaluation from their peers. She (1996) clearly states when female students “fail to enact the traditional supportive feminine role, she is negatively sanctioned and silenced by the gender-normative activities of the class” (p. 186). However, female students who display feminine speech styles are disadvantaged and underrepresented. Bergvall (1996) concludes that engineering remains highly masculine and “the cultural context where students learn to become engineers is... both androcentric and gender polarized” (p. 177).

Jacqueline Watts’ (2010) chapter, entitled *Now You See Me, Now You Don’t: The Invisibility Paradox for Women in a Male-Dominated Profession*, investigates the different ways and strategies female engineers use to cope with male engineers as a masculine work. Women engineers as a minority group become “highly visible” resulting in both negative and positive effects. They are, on one hand, “highly conspicuous” and “invisible”, and on the other hand, women’s high visibility forces them to provide hard work to be accepted. However, women’s visibility is paradoxically conceived. It sheds light on their femininity that is negatively valued because they are claimed to use their femininity over their professional and technical skills as requirements. It also favours the work of the organization that leads them to lack their authority at engineering workplace culture.

Jennifer Skaggs (2013) studies female engineering students’ negotiation of their professional identities, using the social constructionist approach to gender and language and focusing on what females “do” in their interactions with males. Her findings indicate that engineering is “an inclusively male domain” and confirm that all the female students of her study explained that they have chosen to be engineers because they were good at math and

science. Their ability to achieve in these subjects allowed them to choose engineering to be connected with what they choose as a career. While the male students explained that they have chosen engineering because it is “normal” i.e. they belong to a masculine domain. Thus, females’ explanation of their personal choice of engineering as an appropriate professional domain was justified by their resilience and their ability to fulfill their potential and their success at engineering. Although they were not fully accepted as engineers, they were forced to make great efforts and supply more energy to change the workplace culture to have a sense of belonging simply because they liked it. She (2013) states:

While the women do feel a sense of belonging in their academic program, they seem to expend great effort and energy and yet do not feel fully included and personally authentic when contemplating entering into engineering professionally. By striving to have engineering more inclusive and not so focused on the technical aspect, more women will feel (p. 111-12).

Her study proves that female engineering students make their personal choice to the career job of engineering, counting on their abilities and their difference that serves them to succeed at engineering. As a result, their efforts at engineering may change the culture to establish a sense of belonging in a masculinized profession which may be based on believing in one’s skills through challenging the institutional norms and recognizing the complexities of engineering. Skaggs (2013:12) declares:

Yet, these women are making personal choices in their education and work to negotiate the “complex interconnection discourses concerning the relationship between gender, sexuality, and work”. This demonstrates how the females in this study are moving into self-authorship of their lives as evidence by their abilities to contend with the opposing voices they have experienced all through their time at the college engineering (p12).

Moreover, Sagebiel (2008) claims women’s big challenge is to work in a masculine domain as a minority group. They have to work hard which is not an easy task “*to prove that they are competent, working hard, know what they are doing and what to be taken seriously*” (2008, p. 423). Women work hard to prove to the company that they are fully-fledged to gain acceptance in comparison to male engineers who feel that they are in their own space. She justifies that women’s difficulties are tied to their social and family status and different

positions being secondary to men. Sagebiel (2008) explores women's coping strategies to survive and assert themselves in men's culture to demonstrate difference and equality. Being a minority group, women have to use "great self-assurance" to cope with a traditionally masculine culture that is mainly "the culture of sexist jokes" (2008, p. 424). Yet, they find obstacles with men who constantly show "much more self-assurance" than women. Women have to adopt a coping strategy to deal with "sexist or stupid jokes" by "finding a joking way to react to sexist jokes" that needs "a lot of sensitiveness and delicacy" which is not the case for men. In the same vein, Sagebiel (2008) draws on the career progression barriers that face women at engineering. Among the barriers that women engineering managers identify are those related to societal and company internal reasons tied to:

- Gender stereotypes
- Traditional ideas about gender division of labor
- Traditional role concepts
- Men's networks and the restricted entrance of women on the other hand

The masculinity of engineering favours men's network that stands as a barrier against women's progression in engineering that is oriented by hegemonic masculinity which excludes women. Men share their network even after working hours (informal network), while women do not participate because they prioritize their family duties.

2.4.2.1.1. Male strategies for female exclusion from engineering

The study of Tonso (1996) highlights the cultural and professional processes that systematically exclude female engineers from engineering. Female's exclusion is reinforced by gender stereotypes about femininity "as different" from the norms of this profession dictated by man as a dominant group. Tonso (1996) investigates the different ways students develop "*an engineering culture better suited to modern exigencies, might do to promote changes in the "traditional" culture of engineering*" (94). She (1996) compares males to females at engineering. Being a male student means being comfortable in a culture they belong to, associated by people like them. Thus, their image is reinforced and their presentation is privileged with better opportunities which make their life easy at such culture. Unlike men, female students spend more time, make great efforts, and supply a hard work to "fit in" engineering, learn about all the ways to "deal with" male students i.e. learn strategies to cope with the masculine culture, receive negative treatment such as "women are kidded about getting extra points", and behave according to the "standard-issue stereotypes" in order to receive the same respect and recognition as males. Tonso (1996) states that among the coping strategies women use to survive in this masculine dominated culture to face their fear

from exclusion is to “*learn a new language [to become engineer], a language developed by men*”. Women adopt these coping strategies “*in a fashion similar to the responses about men’s privilege on this campus, learning to ignore the realities may be one of the women’s survival techniques*” (p. 96). Tonso concludes that engineering is still a domain where women are underrepresented, facing pressure to cope within the masculine culture, ignoring the stereotypical notions which exclude their participation. She recognizes that engineering culture should be changed to be “gender neutral” to encourage women to participate and favour their presence in engineering education and profession as well. Tonso (1996) states:

But the fact remains that this sort of culture discourages women from participating ... the time has come to turn our conversation away from how to change women and to undertake conversations about what is wrong with engineering and engineering education and how to change the culture (97).

2.4.2.2. Engineering Workplace and Femininity

Studies concerned with females’ experiences at engineering advocate women’s participation in educational and professional engineering settings. They support women’s role and achievements that favour their challenges to legitimize their presence. Many researchers investigate the reasons behind the issue of women’s shortage in engineering; a leading example of a male-dominated field. Engineering is perceived as “inhospitable” context. Lambert’s study (2008) examines the influence of the engineering learning context on students. His study indicates that engineering context contributes to affect their learning with “the program practices and policies, faculty members’ activities”. Female students are treated and influenced by the learning context, since it does not favour them and discourage them from achieving their full potentials at engineering (as cited in Harris et al, 2004). According to Lambert (2008, p. 17), the engineering climate is affected by gender norms and perceived as “*male normed classroom, often dubbed “chilly” climates for women have generally been described in the literature as a competitive, weed out system that is hierarchically structured with impersonal professors*”(as cited in Vogt, Hocesvar & Hagedorn, 2007, p. 339). Lambert (2008) suggests that women’s minority status in engineering is due to the fact that they are surrounded by males; the competitive nature of engineering “fit in” males more than females. Lambert (2008) declares that the reason behind women’s poor participation in engineering profession is the “chilly climate” that discourages women and affects their decision to leave

engineering. Lambert (2008, p. 54) suggests that *“if women feel supported and encouraged by others in the department, they may be more likely to persist”*.

Women’s status at engineering is still an issue to be questioned whether they fit in the chilly climate of engineering or not. Harris et al. (2004) examined the learning atmosphere of engineering. They found that women were perceived as a minority and evaluated negatively even though they share equal number with male students who perpetuate the conventional stereotypes of their differences. Harris et al. (2004) claim that the nature of engineering is competitive whereas women rely on collaboration, as a result; they face discrimination by their peers and faculty members that influence their decision to leave engineering. In the same vein, Astin (1993a) states that students’ experiences reinforce the “stereotypical differences between males and females”. Female students prefer collaborative learning (Knight, 2002; Cross, 1998, as cited in Lambert, 2008). Women’s minority at engineering learning context contributes to their isolation and negative evaluation when it comes to mixed-sex groups (Hartman& Hartman, 2006).

Stonyer (2002) articulates that engineering education is still a context for the prevalence and functioning of the asymmetrical relationship between men and women. It is still uncomfortable to women because they experience the traditional culture of “not belonging” into engineering despite their coping strategies of negotiating their identities to “fit in” the engineering education. Stonyer (2002, p. 397) posits that *“the partnership, as lived in the experiences of many women engineering students, continues to be asymmetrical and hierarchical”*. Engineering education has complex discursive identities; women seek membership in engineering education through multiple identities that are centered to engineering as scientist, managerial and liberal education discourse (citizen), and other marginal identities such as guys, helpmate and power-puff girls. Stonyer (2002) claims *“there are specific dominant socio-cultural engineering identities within engineering which, given the traditions of engineering, are gendered as masculine”*(p. 397).

2.4.2.2.1. Engineering Workplace and Women’s In/Visibility

2.4.2.2.1.1. The Conceptualization of In/ Visibility Paradigm

Despite the complexities of the term, many researchers have sought to explain and give a clear understanding of the perspective of visibility/ invisibility of women workers in the male-dominated domain. They have sought to provide critical reflection and evaluation concerned

with such concepts in male-dominated domain where men remain the dominant group whose status is reinforced by power relations and institutional norms.

The work Lewis & Simpson (2010), entitled *Revealing and Concealing Gender: Issues of Visibility in Organizations*, unveiled the hidden gendered and ideological practices and traits in organizations. Inspired by Kanter (1977), Lewis & Simpson (2010) developed the “(In)Visibility Vortex” framework that explains women’s (in) visibility based on power dynamics that control the mechanism of movement around the (in)visibility, concerning the norm and the margins in organizational practices. Lewis & Simpson (2010) conceptualize the (in)visibility vortex as:

A flow, usually in a spiral motion around the centre. The speed of rotation and the level of turbulence are greatest at the centre and decrease progressively with distance towards the margins, (the) closer the individuals or groups lie in relation to the norm, the more likely they are to secure access to its privileges...the concept of the vortex therefore captures the turbulence and insecurity that occur both within and immediately outside the centre (p. 09-10).

The movement around the norm highlights the practices of invisibility which tend to conceal “*privilege and advantage and preserving the status quo*” (Lewis, 2017, p. 15). At this stage, the norm tends to be invisible, unproblematized, and unnoticed. The social groups who occupy the central normative position are men. Their practices are unmarked unlike women who are always marked by gender and race. In this sense, men carry the universal norms of manhood and masculinity; they tend to be physically unmarked, invisible, and privileged by the gender norms. The dominant centre conceals men’s behaviour and advantages masculinity, while femininity is disadvantaged, visible as stranger, and marked by the gender categories. The relation between power and (in)visibility of concealing the norm and revealing the ones at the margin marks them as the “others”. It is reinforced by the normative discourses of masculinity that exclude women from entering the centre. In this sense, (in)visibility is strongly linked with the norm which is entailed within the practices that are dictated upon the ones at the centre and those on the periphery who are gender marked.

Simpson & Lewis (2005, 2007, 2015) draw on Kanter (1977) and use the vortex to justify the tokenism processes, practices, and experiences at workplace. These practices are characterized by the dominant masculine norms. Women were considered as tokens and as minority group in contrast to men as majority group because of the numerical imbalances that

exist in organizations. Kanter characterizes men as “the invisible dominant centre”. However, to challenge the dominant centre and change the culture of a given work as management, women managers and secretaries who enter from the margins should face revelation, focusing on female differences from the male norm which results in a negative evaluation of women managers as they display non-traditional gender roles in society. Also, in reading Kanter’s work (1977) from the vortex perspective, women who are “*under pressure from relentless scrutiny also sought social invisibility through conservative dress, working from home or keeping silent in meetings thereby seeking to disappear within the margins- with other women pursuing strategic invisibility by distancing themselves from damaging femininity*” (Lewis,2017, p. 18).

Lewis & Simpson (2012) provide a critical lens on the complexity of visibility and invisibility which govern everyday work experiences and practices. Their work uncovers gender inequality and analyzes women’s in/visibility from the surface and deep conceptualization at the workplace as distinct theoretical insights into the practices of revealing and concealing gender in organizations. Lewis & Simpson (2005, 2007, 2010) analyze the surface conceptualization to explain women’s exclusion in terms of gender differences. Women’s visibility at the surface level is largely associated with negative state of exclusion and difference. Whereas, deep conceptualization analyzes the role that discourse plays in the construction of gender differences and the suppression of women’s position in society and at the workplace (Simpson & Lewis, 2007). The deep conceptualization highlights women’s silence that is dictated by the masculine domination; it is tied to power dynamics to maintain the normative position in terms of “*processes of maintaining power through invisibility and the struggles around the norm*” (Lewis & Simpson 2010, p. 03). The surface conceptualization is concerned with shedding light on women as a minority group in male-dominated setting face high visibility pressures which lead them to fear from making mistakes that exclude and marginalize them from the norm. Compared to women, men as a minority group in female-dominated professions receive distinct forms of treatment i.e. being visible means positively valued. Lewis & Simpson (2010) posit:

Seeking authority and hold special expertise feed into career success. Drawing on Kanter (1977); Simpson (1977,2000), Lewis & Simpson (2010) claim visibility as a disadvantaged obstacle for women in career jobs stating “visibility can have negative consequences for women through performance pressures, heightened career barriers and the creation of a

hostile working environment as well as through strong social constraints on behaviours in social interactions (*p. 03*).

Lewis & Simpson (2010) suggest that token women can benefit from the disadvantages of the visibility perspective through increasing their professional occupations to reach gender equality and recognition in their jobs and society as a whole. A focus is given to the deep structure; Lewis & Simpson (2010) explain such dimension drawing on Robinson (2000) in his explanation of the perpetuation of power relations where men are positioned at the “centre” i.e. invisible, hence; their experience, behaviour, and practices reinforce their powerful and dominant unnoticed position. However, women who experience marginalization can seek recognition by threatening invisible centre; a position given to men. as a result, men’s normative position is highly visible by failing in education and employment (Robinson, 2000). Also, through the process of visibility, men claim their position as invisible as they de-centre from normative position- centre- claiming “victim status” or performing “victim identity”. This position contributes to privilege them and conceal them while advantage them as dominant group over women (Lewis & Simpson, 2010). To illustrate, Jacqueline Watts’ (2007) work of women’s experience in male-dominated engineering highlights women as tokenism as minority group who are highly visible in terms of “physical spectacle” while invisible as being authoritative in their job. Female engineers face attempts of exclusion from male engineers who are claimed to be the experts and the professional pillars of the engineering domain, using specific mechanisms such as pointing at women’s sexuality, since women engineers subvert men’s authority.

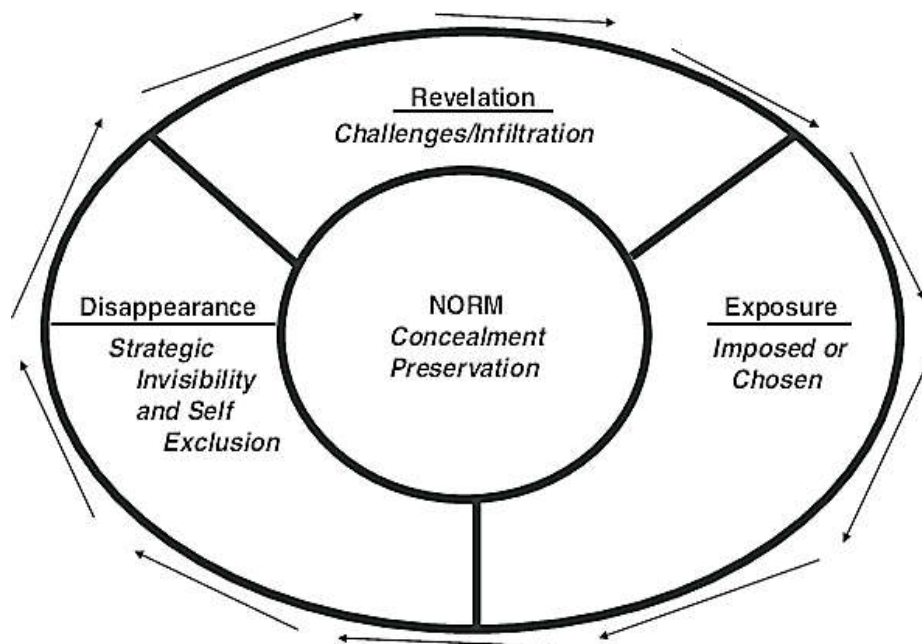
The conceptualization of (in)visibility within the vortex framework provides a clear understanding and a deep analysis of the complexities of the workplace, concerning the practices flowing around the centre. The vortex framework offers a supporting analysis to women’s presence at the workplace and to gender issues in organizations. In this sense, the (in)visibility vortex highlights the ongoing battles to gain privilege within the centre through discursive practices. It also offers unveils power relations and gender inequality that individuals both undergo and subvert in organizations that aims to reach gender equality and brings out social change. Lewis (2017) posits that the vortex explains:

how the focus on increasing the number of women on boards of directors is only a partial “solution” to gender disadvantage; uncovering hidden forms of gendered power; exposing the mechanics of segregation in terms of the robustness, uncertainty, and invisibility of the

norm and how normalizing discursive practices, such as ‘natural sex differences’...; and bringing out the way in which multiple forms of visibility and invisibility are embedded in the day-to-day interactions, experiences and strategies of those on the margin (p. 19).

Lewis and Simpson (2010) explain the hidden ideologies within organizations through the “vortex” to explore and examine how “revealing” and “concealing” practices within (in)visibility processes, including the following features:

Figure (2.1). *The (In)visibility Vortex*(Lewis & Simpson ,2010)



► The invisible norm

It is called the “dominant center” (Hearn, 1996). At this stage, the norm tends to be “invisible, unproblematized, enduring scrutiny” and “unnoticed” in terms of the physical appearance. The dominant groups occupy the central normative position, belonging to “middle-class white men”. Men’s practices are unmarked. They hold the universal norms of manhood and masculinity and tend to be physically unmarked with gender, invisible, and privileged by the gender norms and cultural categories. The dominant centre conceals men’s behaviour and advantages masculinity unlike women who are always marked by gender and race. In this sense, femininity is disadvantaged, visible as stranger, and marked by the gender categories. Lewis and Simpson (2010) state:

Gender only gets noticed when it is a source of harm. Gender as Advantage, therefore, escapes from view and remains concealed within what is seen as the ‘natural’ rewards of

masculinity. The center is accordingly a site of power in what material and cultural advantages that come from privilege from positioning as One are hidden, protected and hence perpetuated (p. 05).

People at the center hold power. As a result; the centre becomes a site of challenge from other individuals at the margins, enduring to enter in the central position. The center tends to “insure and subject to challenge” (2010, p. 05). The relation between power and (in)visibility of concealing the norm and revealing the ones at the margin contribute to mark them as strangers and “others” that is reinforced by the normative discourses of masculinity to exclude women from entering the center. In this sense, (in)visibility is strongly linked with the norm which is entailed within the practices that are dictated upon the ones at the center as well those on the periphery. Particularly, women who try to improve themselves in male-dominated occupations are perceived as the “other” they “*are never fully accepted as leaders, as managers or as members of the board*” (2010, p. 06). Women seeking to enter the normative position are visibly marked as they belong to the margins; positioned at the periphery, and disadvantaged by the cultural norms imposed by masculinity, and not fully accepted as members of the community. Lewis and Simpson (2010) argue:

While the norm is strongly associated with invisibility and with dynamics(practices, processes behavior, rhetoric) that seek to conceal, both visibility and invisibility are implicated in different ways within the margins. Thus, as tokens in male-dominated occupations and roles, women stand out and are highly visible. They symbolize their category and experience material consequences of over-exposure and the making of their bodies as gendered (p. 08).

To illustrate, Jacqueline Watts’ work (2007) of women’s experience in male-dominated engineering highlights that women as token/ minority group are highly visible in terms of “physical spectacle” while invisible as being authoritative in their job. Female engineers face attempts of exclusion from male engineers who are claimed to be the experts and the professional pillars of the engineering domain through using specific mechanisms such as pointing at women’s sexuality, leading women to challenge men’s authority. Gatrell and Lyng (2007) state that women take advantage of invisibility position as a coping mechanism, being unnoticed and unmarked in terms of their capacity to bear children as a unique characteristic of motherhood (as female pregnant lawyers), their bodies are highly visible which is a sign of

powerlessness and a marginalization. Yet, as mentioned above invisibility within the norm can be insecure and challenged by the groups entering from the margin through their visibility and different status as a way of resistance to challenge the normative position (as cited in Lewis & Simpson, 2010). Moreover, Susan Harwood's (2006) study of women leaders in policing in Australia uncovers the unequal social position given to women as workers. Women in historical male-dominated leadership like policing challenge the social masculine culture of the workplace by subverting and giving distinct leadership pictures to improve their visibility through recognizing their capacities. These women are mainly inspired by Feminist awards drawing on the historical background of women's participation in such domains. Harwood defends that the barriers women face in leadership in male professions and organizations reflect pervasive masculine institutions involved in their experiences and practices.

To this end, the norm can be seen as a site of privilege and scrutiny to those who stand either within the norm. Yet, it can be exposed to challenges from those outside the center to seek recognition and invisibility which make it insecure. Lewis and Simpson (2010) conclude that the norm is marked with *"turbulence and insecurity that occurs both within and immediately outside the centre"* (p. 10).

■ **Concealment and Preservation within the Norm**

The norm is mainly characterized by concealment and preservation i.e. the privileges and advantages of holding and maintaining power as well as controlling its practices through the masculine norms and orders to the extent of excluding the groups, seeking to enter. The power to hold control over the practices of maintaining concealment and preservation is not an easy task to fulfill for those inside the center because "power for", in Robinson's term (2000), is both "fragile and insecure" (as cited in Lewis & Simpson 2010, p. 10). Thus, it requires specific strategies to maintain the mechanisms of concealment and preservation. Lewis and Simpson (2010, p. 10) clearly state that *"concealing political intent require strategic maneuvering, surveillance, speed, contrivance, tactics, machinations, in short, they involve a turbulence 'ebb and flow'"*.

■ **Revelation, Exposure, and Disappearance in the Margins**

The vortex describes the movement that revolves outside the centre in terms of revelation, exposure, and disappearance. First, revelation is associated with the marginalized group who tend to challenge the practices and the discourses imposed by the normative center through masculinity status to challenge the status quo such as women's participation in the masculine domain; women subvert the masculine norm by creating their own space and strategies to do

their work. Revelation in terms of challenging the norm is difficult and too demanding because when women subvert to the male norms, claiming recognition in a domain they don't belong to, they are gazed at as the other. Historically male-dominated domains exclude women from contribution in establishing its norms and principles. Revelation is intrinsically tied to the process of concealment. Second, Exposure strategy is linked to the challenges of the masculine norms or normative position to improve oneself as other who celebrates the differences to men such as women's ability to bear children i.e. their sense of motherhood is an advantage to make difference and succeed in their domain. The act of exposure requires being highly "*visible and negatively exposed*" through being different as the case for women; exposing means being visible and evaluated in terms of their sexed bodies as sexual objects. Lewis and Simpson (2010) state that women experience (in)visibility in male- career jobs to:

challenge and reveal is to render oneself *visible in a negative* sense and some resist being framed by struggling to conform to the demands of disembodied work practices; mothers become visible gendered in the legal career, symbolizing reduced work dedication and unavailability (p. 12).

Third, Disappearance as a "strategic invisibility and self-exclusion", is perceived as being exposed to visibility at the margins, and as keeping oneself in the state of invisibility that is a strategic mechanism to "*overcome objection and disappear*" to cope with the demands of the workplace culture, as the case of women workers in the non-traditional domain. Lewis and Simpson (2010) recognize that:

Women working in a university setting found physical spaces where they could effectively vanish from view – even though invisibility is also symbolic of lack of worth and negation and even though the emotion work of 'availability' and service to others is similarly disappeared. Equally, in Harwood's study, women made strategic use of invisibility and their other status to gather information for a change project and to 'eavesdrop' on conversations they would not normally hear. They strategically 'disappeared' keeping a low profile is thus a response to visible alterity" (p.13).

As stated above, women in this domain profit from their disappearance status as a strategy, remaining invisible to enter the domain by seeking disappearance into the norm / the

dominant centre. The choice of being invisible as the “other” and disappear aims to seek alterity as a response to the gendered norms at the workplace. Lewis and Simpson (2010, p. 13) explain that *“disappearance can thus be a strategic choice (to overcome otherhood; to exploit invisibility and alterity, to enter the invisible norm) or an act of self-exclusion in response to perceived disadvantage”*.

The complexities within the vortex reach their climax into and around the centre through concealing, preservation, revelation, exposure, and disappearance based on power dynamics. Lewis and Simpson conceptualize these complexities as a relational flow moving from revelation to exposure to disappearance as either a response or strategic act of self-exclusion to seek alterity and challenge the invisible norm. However, being visible is a strategy of resistance to the masculine norms and power dynamics. Hence, (in)visibility involves certain implications of contradictory processes in the preservation of power that underpins the struggles around the norm in the organizational setting.

The recent research of Patricia Lewis (2017) on management and entrepreneurship to the processes of inclusion and exclusion within the norm, using the conceptual framework of (in)visibility vortex to seek and highlight the relationship between organizational processes, discourses, and cultural norms. She focuses on the masculine norms prevailed into the organizational practices. Her study aims at explaining and unveiling the practices and the turbulence of (in)visibility that occurs in and out the norm within organizations. Drawing on Collinson and Hearn (1994,1995) who posit that men’s invisibility in organizations like management and entrepreneurship focusing on the strong connection between masculine norms and management, Lewis (2017) explains invisibility at work as *“being (i) physically out of sight, (ii) being ignored or overlooked, (iii) being socially marginalized, (iv) being economically and culturally devalued, (v) being legally unprotected and unregulated, or a combination of all five”*(Hatton, 2017, as cited in Lewis, 2017, p. 03). Lewis (2017) raises her interest in seeking the invisibility of the masculinity of management and entrepreneurship as sources of power and maintaining men’s advantages.

In the latter refined version of the vortex, Lewis and Simpson (2012) state that people from the margins seek to enter the norm through the process of revealing, challenging *“the practices and values of the norm. Alternatively, by simply being present within the center, the woman can offer an alternative that can subvert and confront dominant norms. Likewise, exposure can be experienced positively or negatively: it can be abject and dismal, brandished as pleasurable or be used strategically by bringing about change”* (as cited in Lewis, 2017, p. 18). While disappearing as a strategy to enter the center *“can take a number of forms*

including withdrawal as women take – up non-strategic roles, erasure of invisibility is imposed or incorporation if women themselves seek to enter the invisible norm” (Lewis & Simpson, 2012 as cited in Lewis, 2017, p. 19).

2.4.2.2.1.2. Women’s Discrimination at Engineering

Many researchers highlight the subtle organizational dynamics that undermine women’s achievement at male-dominated engineering. Faulkner (2006) claims that women’s enrolment at engineering is decreased due to “the subtle taken-for-granted gender dynamics” to get membership. She (2006) raises a central question: “*how are the practices, cultures and identities of engineering more appealing, comfortable for and supportive of (more) men engineers than women?*”. Her findings demonstrate that engineering practices are gendered through creating particular masculinities and femininities at engineering. In order to re-establish a sense of belonging into engineering, engineers have to learn to behave according to the company’s context and engineering culture. Faulkner (2006) provides the following analysis for the purpose of identifying the problems and causes that face the progress of women at engineering:

■ The Problem of Retention

The main reason behind this issue is the educational context of engineering, since many students find engineering difficult and governed by inclusive gender dynamics about gaining membership in the gendered/ing engineering community. These power dynamics serve the masculine culture. Faulkner (2006) claims:

The masculine coding of engineering work is evident in the assumption of hands-on skills, in stereotypes of the engineer, and in the celebration of technicist engineering identities. Through numerous gender dynamics, engineering workplace culture function, to varying degrees, as men’s spaces which women engineers (and some men) have to ‘fit in’ to or remain on the margins of (p. 14).

In this vein, Faulkner (2006) formed the term “gender in/authenticity” to highlight the “normative pressure” through which men are expected to be the norm and perceive engineering as a self-evident choice and more “gender authentic” for them. However, women’s presence is different from the norm i.e. men’s position is never questioned, unremarkable, and unnoticed while women’s presence tends to be “unusual” and a gender/sexually visible. Hence, Faulkner (2006) states that gender in/authenticity refers to

“the non-congruence of gender and engineering identities for women, and the congruence of these identities for men” (p.16).

■ The Image Problem of Engineering

The image of engineering is a central problem with engineering based on gender stereotypes. Faulkner (2006, p. 06) justifies that *“the classic stereotype of engineering is heavily gender marked”*. The image problem of engineering is based on the dichotomy between *“the conventional gendering of a dualism or dichotomy between ‘the technical’ realm and ‘the social’, by which men/ masculinities are readily associated (symbolically) with technology and women/femininities with people”* (2006, p.16). The “technical” and the “social” are mutually exclusive at engineering which inherently draws on the conventional gender differences between men and women using different styles in engineering; women use better social and communicative skills, while men use more tools and technology because simply they have pleasure in technology.

There is an evidence of a great mismatch between the actual image of engineering that demands both the technical and the social skills, which are provided by both men and women, and the image of engineering that reinforces the gender differences between men and women. Faulkner (2006) explains that both men and women are attracted by science and technology. Unlike the claim that men and women use different styles of working, women rely on social skills (the communicative skills) while men use more technological and latest tools. Yet, the vast majority of men and women engineers have better social skills i.e. they work on improving their social interactions like *“handling conflicts, difficult work relationships, collaborating with clients and contractors, team building and motivating staff, mentoring junior staff, working under pressure”* (Faulkner, 2006, p. 10).

The study of Faulkner (2006) uncovers a strong operation of gender stereotypical image that revolves around the practices of engineering i.e. more supportive of men who value technology than women who are socially skilled. This issue draws on the conventional dualism of the “technical/ social” as mutually exclusive in engineering culture. In order to challenge the conventional gendering of the technical/ social dualism i.e. associating men/ masculinities with technical and women/ femininities with social things, people have to draw on the mismatches between the image of engineering and the actual practices in engineering through recognizing the applicability of both technical and social skills -decreasing the

“technicist” image of engineering-as a way to promote and normalize the proportion of women.

■ Troubled engineering identities

Faulkner (2006) claims that engineering is a mixture between the technical and the social skills. Yet, engineering provides “troubled engineering identities” which are sustained with gender and professional dynamics. The mismatch between social / technical dualism and the actual image of engineering empower men with technical skills associated with masculinities as “strongly masculine coded” and indoctrinate the stereotypical images of the real engineer. Hence, engineer’s professional identity is based on the “available masculinities of real engineer” while women engineers’ status remains at risk and “fragile” compared to men’s status. Engineering identity is constrained with the gendered practices and the conventional stereotypes about the image of engineering. Faulkner (2006) calls for the urgent need to recognize the diversities that exist among individuals in order to attract talented people to get the best valuable culture of engineering without any requests for limited characteristics or demands of social and technical realms, polarizing the differences between men and women.

Weber (2018) examines the position of women in male-dominated engineering, exploring the reasons behind women's minority status –less proportion- in engineering. She draws on the Feminist Critical standpoint to explore the ways to change engineering to be better suited for women. Her findings confirm that gender inequalities still prevail i.e. women’s discrimination in the engineering workplace discourages their participation at engineering workplace that lacks rewards (2018, p. 14). Her study highlights the following reasons behind women’s less proportion in engineering workplace:

- **Female exits**

The main reason behind fewer women and women's exit in the field of engineering is due to the lack of women mentors and co-workers. Weber (2018) argues that *“as the numbers of females in the profession are lower, this perpetuates itself further, because fewer females in the professions mean a lower number of female mentors, which is a major factor in why females leave male-dominated fields”* (p. 15). Weber (2018) draws on Margarita Torre's (2014) findings that indicate females exit from male-dominated fields because of the “scarring effects” of female previous experiences that lead them to exit male-dominated professions.

- **Female Entries**

Fewer female entries are due to the fact that females seem to be uninterested in engineering. Also, they perceive the job as male-dominated. So, they quit the job before even

they experience it, Weber (2018, p. 16) states that *“not only are females exiting the field due to the reasons once they have acquired a job, but they are changing their paths before even getting into it”*.

- **Stereotypes and Bias**

The engineering field is full of bias about the pre-existing prejudices about men and women entering in the field. Male and female workers are differentiated through stereotypical gender roles even though *“men and women are equally capable of performing in engineering”* (Weber, 2018, p. 16). Women are less likely to be hired than men, referring the *“pre-existing biases, whether they are aware of them or not”* (Weber, 2018, p. 17). Also, the prevailing stereotypes about women’s invisibility to achieve in science and mathematics stand against women’s will to do the career job i.e. negative stereotypes about women’s ability acts as a barrier behind their entries in the field.

- **Sex Discrimination**

It is claimed that men are more favoured in engineering than women because they excel in technical fields, while women are discouraged and lacking rewards in the technical fields, since men outnumber women. Engineering workplace is governed by strict masculine codes and conducts (Weber, 2018, p. 18). Women’s minority status is driven by negative stereotypes, negative judgments, and devaluations that force them to leave engineering and major in other fields as a result of what is called in Fischer term (2002) *“stereotype threat”* that causes women’s discrimination in their professions, feeling inadequate and uncomfortable. Weber (2018) states *“this feeling of inadequacy could be a factor that drives women to leave the field. These psychological results of sex discrimination are highlighted by researchers as major reasons engineering is such a male-dominated field”* (p.18).

Moreover, Powell, Bagilhole, and Dainty (2009) find that engineering is loaded with a masculine culture that supports the masculine codes of conduct. Hence, women in engineering *“undo their gender”* (2009, p. 411) that is behaving in ways perceived as masculine to conform to their work and fit in the masculine culture, adopting masculine roles. While, women who display feminine roles are uncomfortable in unhostile culture, as a result; they leave the field earlier (Weber, 2018, 18). Yet, with the recent years, female engineers are increasing their presence in a slow process and raising the issue that engineering field should be made more comfortable and hostile to female engineers. Weber (2018) posits *“we cannot just leave this issue to fix itself; something needs to be done to make women in engineering more comfortable in both the university and the workplace”* (p. 19).

2.4.2.2.1.3. The Tension between the Categorization of “Difference” and “Sameness” at Engineering

The workplace mirrors how gender stereotypes and norms through the “gendered discourses”. Stereotypical gender roles dictate what is appropriate for men and women through the process of “gendering”. The work of Sophie Reissner (2012): *The Guys Would Like to Have a Lady: The Co-Construction of Gender and Professional Identity in Interviews Between Employers and Female Engineering Students*, draws on the ways female engineers negotiate their identities which intersect with gender and professional aspects, using the social constructionist approach to explore the discursive patterns of women engineers and how they re-construct their professional identities in interactional contexts at engineering which is historically perceived as an “androcentric professional context”. Hence, the struggles about the requirements of the institutional discourses between “difference” and “sameness” are tied to gender differences about the employees. The work of Reissner (2012) demonstrates that women must supply “*lot of work both to display that equality and to show the integration of technical and relational skills*” (p.19), to illuminate the stereotypical images about women in terms of being inadequate for the job, since they use social (communicative) skills instead of technical skills. By doing so, women may prove their technical abilities and their communicative skills which are concerned with “*competency discourses that is reflected in the requirement to “fit in a professional engineering box” to establish a sense of belonging*” (Reissner, 2012, p. 21). Hence, being perceived as the “same” subjects female engineers to high visibility in comparison to men who are invisible in a historically “male’s job”. She highlights the tension between the discourses of difference that refers to gender as a “feminine interactional style” and the discourse of sameness, referring to the use of masculine abilities to fulfill the job of engineering as an institutional taken for granted male-dominated job. Women face a challenge to negotiate and co-construct their professional identity in a domain which they do not belong to. Reissner (2012) concludes that “difference” and “sameness” are “defined by cultural members” that should not be polarized as an “axis”. They should be conceptualized as a continuum. Through being different from the norm, women still face gender stereotypes that consider them as a minority group whose chances to be recruited in engineering is difficult and restricted through gender differences. The requirements of engineering for employees are prerequisite to “fit in” engineering while the requirement for women to be different receive resistance as well as rejection from the male dominant group, resisting and asserting their masculine normative culture.

To this end, the presence of female workers in engineering has generated a large controversial literature, it has been studied from many different disciplines and each of them focuses on a specific part. Despite their differential perspective, most of these studies confirm their unnatural and unusual status as they enter the workplace. In short, women may be judged in terms of being different from men who represent the norm.

2.5. Conclusion

The present chapter reviews the experiences female engineers at engineering workplace. It defines workplace culture, reviewing gender-based division of labour based on power relations at workplace setting. This chapter sheds important light on the discursive co-construction of females' engineers' professional identities, drawing on power, voice and visibility issues. It looks at close relationship between engineering and gender, drawing on the complexities of engineering workplace, discursive and gendered/ing practices at male-dominated engineering. It extends the discussion to review specific scientific enquiries made about the difficulties that female engineers experience, living at the margins of the engineering world. However, the next chapter draws attention on the methodological framework that guide the present research study.

Chapter Three

Research Design and Methodology

3.1. Introduction

The present chapter describes the research methodology that guides this research work. It reviews the research process, providing detailed description of the parts of the research design. The first part deals with the contextual information about Algerian female workers and their participation in the labour force. The second part is concerned with the research design. It reviews the research setting, population, and the research participants. Then, it presents the methodological approaches adopted in this study, combining between quantitative, qualitative, and critical discourse analysis approach. Moreover, it highlights the need of triangulation of data that governs the research at hand, combining between three main data collection instruments which are mainly questionnaire, semi-structured interview, and participant observation.

3.2. Women's Economic Participation in Algeria

The present research aims to investigate the co-construction of Algerian female engineers' identities at engineering workplace in the Sonatrach Company in Algeria. It also aims to shed light on the experiences of females at male-dominated engineering. Accordingly, the reality of Algerian women has been subjected to constant changes intermingled with social, political, and religious contexts of each period. Therefore, approaching Algerian women's economic participation remains a highly complex issue especially when it is linked to power dynamics, gender relations, patriarchal systems, and stereotypes that intersect within the process of naturalization of different social conventions and norms which put women's status into question. Particularly, the public role of women is a central issue in Algeria.

The *International Journal of Economics and Financial Issues* (2020) highlights that Algerian women's economic participation is an issue that is not covered extensively. In this sense, gender gap in the economic participation is associated with economic and social factors. It is considered as a challenge to the Algerian government to achieve gender equality in all aspects of life. The following figure (3.1) shows the economic gender gap in Algeria:

Figure (3.1). *Economic participation general gender gap indicator in Algeria during the period (2006-2018)*

Years/Indicators	2006		2008		2010		2012		2014		2016		2018	
	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank
No. of countries	114		130		134		135		142		144		149	
Algeria	0.443	103	0.468	115	0.467	119	0.378	119	0.393	136	0.435	134	0.452	132
Average/Moroccan	0.47		0.456		0.448		0.429		0.430		0.432		0.4257	
Average/Arab	0.42		0.435		0.426		0.429		0.44		0.43		0.4087	
Average/Global	0.65		0.62		0.59		0.60		0.60		0.59		0.59	

*The averages were calculated by researchers, Source: Gender Gap Report for years 2006-2018. *in 2012 When the Moroccan average was calculated, it was divided by 3 instead of 4 and this owes to the lack of data in Tunisia during the period of Arab Spring

Note. Figure (3.1) is adopted from the International Journal of Economics and Financial Issues (2020)

The International Journal of Economics and Financial Issues argues that gender inequality still persist in Algeria. The Algerian government was not able to close the gender gap between 2006 and 2018. Moreover, economic participation by gender witnessed an increasing gap from 2006 and 2018.

Figure (3.2). *Economic participation and opportunities gender gap indicators in Algeria (2006-2018)*

Years/Indicators	2006		2008		2010		2012		2014		2016		2018	
	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank
No. of countries	114		130		134		135		142		144		149	
Global economic indicator	0.443	103	0.468	115	0.467	119	0.378	119	0.393	136	0.435	134	0.452	132
Participation in the workforce	0.44	102	0.46	114	0.47	119	0.47	120	0.21	141	0.24	141	0.23	146
Wage equality for similar work	0.74	24	0.73	31	0.71	40	0.57	109	0.78	13	0.76	22	0.78	15
Estimated Earned Income	0.31	106	0.34	114	0.36	117	0.16	133	0.17	139	0.18	141	0.18	148
Ratio of females to males in jobs of legislators, senior officials and managers	0.06	98	0.05	115	0.05	122	0.05	111	0.05	123	0.11	116	0.09	138
Ratio of female to male in professional and technical workers	0.39	85	0.55	85	0.55	93	0.55	92	0.55	105	0.79	91	0.92	88

The source: Gender Gap Report for years 2006-2018

Note. Figure (3.2) is adopted from International Journal of Economics and Financial Issues (2020)

As indicated in figure (3.2), Algeria is ranked 146 among 149 countries in 2018. Male participation reached 73% compared to 16.7% of qualified female participation in 2018. The gap is increasing since 2006.

In examining the development of women's societal situation in Algeria and the different roles that women have played in Algerian history, Caroline Rohloff (2012) sheds light on the effects of modernization in Algeria that has been an inhibiting factor to the advancement of women in education and workforce (Rohloff, 2011, 2012, p. 24). Moreover, the need to cope with the current development influence women's raising presence and empowerment in majors such as mathematics, science, and engineering. Hence, women's empowerment brought up the tendency to work in the masculinised occupation. Rebah (2007, p. 09-10) argues that women who start owning a business, acting as directors *"put the catalogue of permitted gender roles into question. The woman who inserts herself into the masculine domain defies existing structure"*. Today, women's work is no longer based on pure financial or marital need, therefore; it defies the acceptable social norms.

Today, Algerian women obtain more rights among them is having access to education that reduces of gender barriers. Women enjoy more power and influence in Algerian society. According to the World Report (2018), the Algerian constitution ensures gender equality and equality of rights and duties of all citizens. The Algerian government engages in ongoing efforts to ensure women's status in society, promote equality, and prevent discrimination of all sorts albeit with reservation of provisions regarding marriage and family matters such as the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) in 1996. Also, The Algerian constitution has ensured equal rights before the law of all citizens: *"Equal access to functions and positions in the State is guaranteed to all citizens without any other conditions except those defined by the law"* (Article 63⁴).

Accordingly, Algerian women's economic participation and empowerment has been significantly encouraged by the Algerian government, concerning the implementation of laws and international treaties (such as CEDAW) that improves women's role in the economic development. However, Algerian women face many challenges that stand against their economic progress and affective economic involvement" that act as a barriers to reach high positions. *The international Journal of Economics and Financial Issues* (2020, p. 07), women's economic participation is weak due to the following social and economic factors and barriers:

⁴All these Articles exist in "Chapter IV: Rights and Liberties" in the Algerian Constitution which was amended by the government on March 6th, 2016.

- *“A woman’s partner is considered as one of the reasons that decrease the probability of her participation in the workforce, especially if the partner had a very substantial income for life necessities.”*
- *“Giving Birth to children in most cases leads a woman to prefer staying home, especially if her mother is deceased, where daycare houses are not trusted.*
- *“Traditions and norms that still view women’s role is only exempt on housekeeping and raising children” (Angel and Tanable, 2012)*
- *“Far work positions can discourage women’s participation in the workforce” (Chamlou et al., 2011)*
- *“Limited transportation and expensive transportation fairs” (Chamlou et al., 2011)*
- *“Sexual harassment in the workplace and lack of security.”*
- *“Working hours that conflict with the time children leave their schools because women prefer to excel as housewives and businesswomen”.*
- *“Restrictions on the kind of jobs for women since Algeria is considered as a state with religious and conservative tendencies.”*
- *“Women’s preference for the general sector over the private sector because of its stability.”*
- *“The general deteriorating state of the Algerian economy and state of austerity which decreased job positions and wages”.*

Despite the reforms made by the Algerian government in laws concerning women’s rights that resulted in the abolition of all forms of discrimination and reducing gender barriers, women still have big challenges to take advantage of these laws in male-dominated careers to gain equality and membership. Women’s presence in male-dominated careers has been subject to constant debate. Women are unable to take advantage of these laws in male-dominated careers⁵i.e. they are clearly underrepresented in men’s jobs in Algeria, since their presence represents a minority group. Besides, occupational sex segregations are assigned by social norms of placing men and women in society. Women who are enrolled in men’s fields seem to be stigmatized, characterized as masculine. They might be rejected by the panoptic society, since they are perceived as outsiders that they “don’t belong”, and should not be in competition with men. (Scullen, 2008: 210). Therefore, Moghadam (1990, p. 01) stated that education and employment are among the indicators that reflect and perpetuate the division of

⁵ Meghazi, A. Women's rights in Algeria, between legislation and practice. Retrieved from: http://zawaya.magharebia.com/old_zawaya/en_GB/zawaya/opinion/261.html

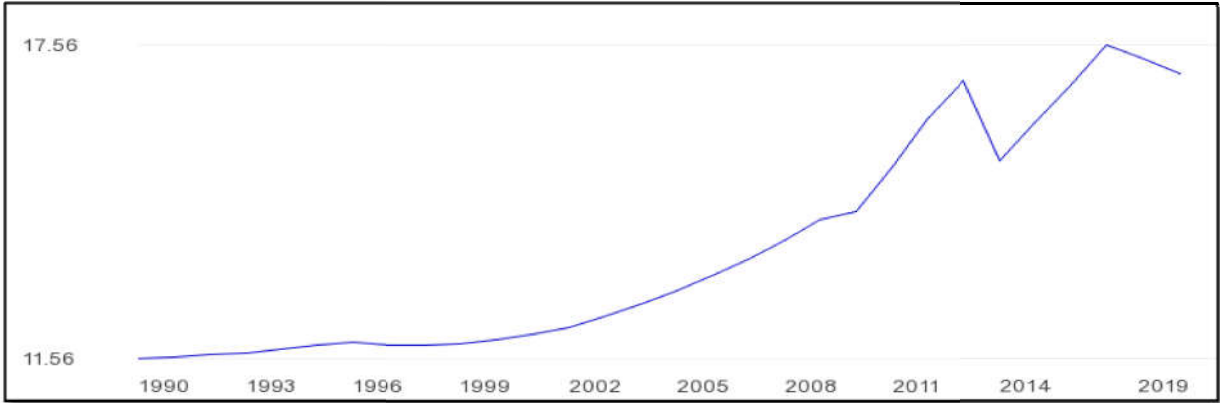
occupations and career choices for men and women. Importantly, the place and the role associated with women when inserting themselves in masculine domains in today's society is considered as an indicator of development and social change.

The number of working women in Algeria has evolved considerably although they still count for a relatively small minority from the total workforce compared with men. Hence, Algerian labour laws initiate to protect women at work, ensuring equal opportunities at work between men and women, and paying attention to their social status and family status, and their social roles and responsibilities. These laws are purposefully designed to protect women from any discrimination and promote gender equality, since equal opportunities and rights are enshrined in the Algerian constitution and laws that emphasize women's status as full citizens and participants in the economic development of the country. The Algerian government works constantly to eradicate and erase all forms of discrimination and violence against women being domestic, physical or psychological.

The impact of women's employment on Algerian society and economy is beneficial. However, men and women do not share equal opportunities in the distribution of employment. Many researchers suggest that Algerians have the tendency to ascribe some types of occupations as more appropriate for women than men. This tendency is considered as a restriction to the type of employment opportunities that women carry out while being imposed by "*employers, women's families, women's coworkers, as well as women themselves*" (Barry & Dandachli, 2020, p. 12). Algerian women have already participated in the development of the country. Their participation in the workforce has increased day today. According to the Minister of Solidarity and Women's Issues, there were only 90.500 female workers in 1962, while the number has increased to reach 1.934.000 in 2015 by rate of 18%⁶. The report of *Youth and Women's Employment in Algeria: Barriers and Opportunities* in 2020 reviews that women's employment rate reached 17% in 2019 while their contribution to the labour force has increased over the past 20 years, as it is displayed in figures (3.3) and (3.4) by the World Bank indicator database.

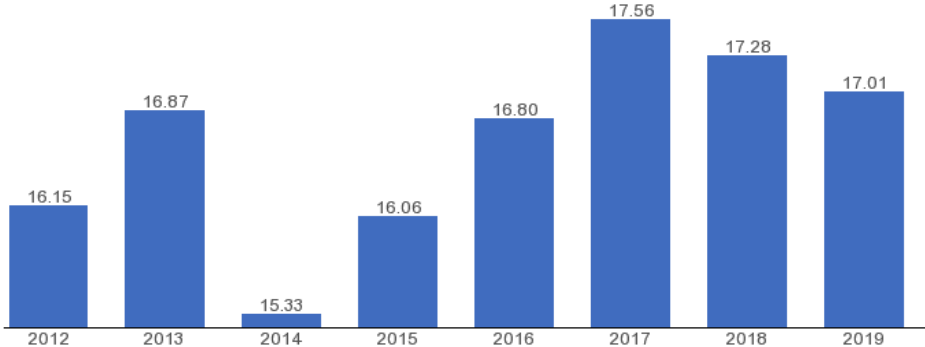
⁶www.aljazairalyoum.com

Figure (3.3). Algeria: Female Labour Force Participation Rate



Note. Figure (3.3) is adopted from World Bank World Development Indicators Database <https://data.worldbank.org/indicator/SL.TLF.CACT.FE.ZS?end=2019&start=2000&view=chart>

Figure (3.4). Algeria: Female Labor Force Participation Rate



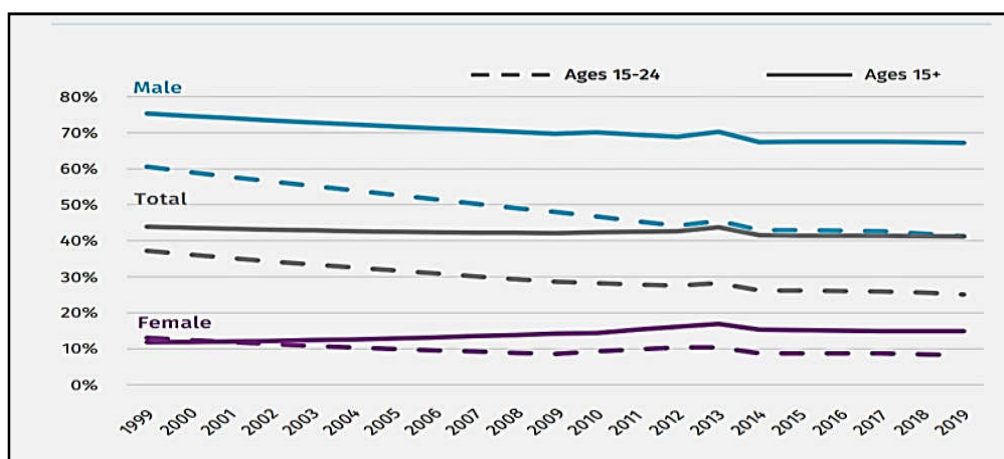
Note. Figure (3.4) is adopted from World Bank World Development Indicators Database <https://data.worldbank.org/indicator/SL.TLF.CACT.FE.ZS?end=2019&start=2000&view=bar>

Despite empowering women’s social and educational status in Algeria, their participation in economic activities remain limited compared to men⁷. Again, women’s activities (from 14.37% in 2010 to 17.01% in 2019) in the labour force is estimated to be lower than men’s activities (from 70 %in 2010 to 67.76 %in 2019) (figure 03) from the total labour force

⁷<https://www.oecd.org/countries/libya/women-s-economic-empowerment-in-selected-mena-countries-9789264279322-en.htm>

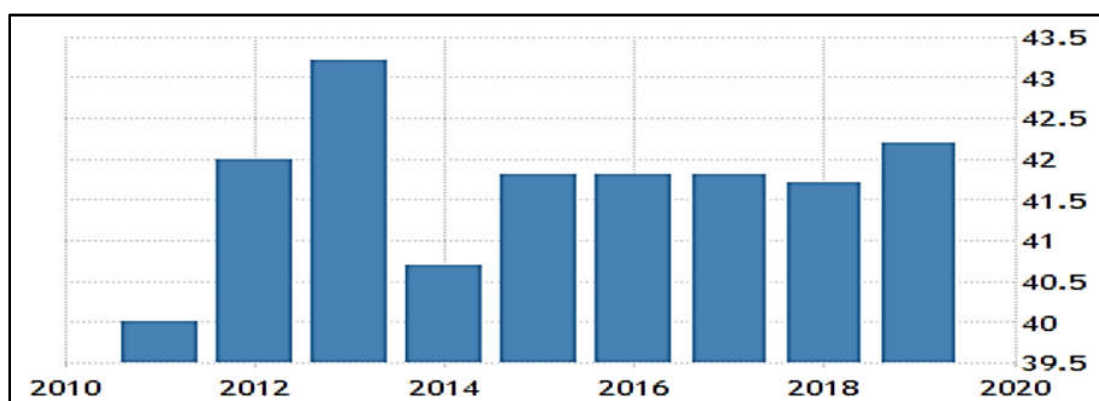
participation rate (about 42.20% in 2019) as it is displayed in figures (3.5) and (3.6) <https://data.worldbank.org/indicator/SL.TLF.TOTL.IN?locations=DZ>.

Figure (3.5). *Labour Force Participation Rate in Algeria 1999-2019, by Gender (Modelled ILO Estimates)*



Note. Figure (3.5) is adopted from World Bank World Development Indicators Database

Figure (3.6). *Algeria: Labour Force Participation Rate*



Note. Figure (3.6) is adopted from National Office of Statistics (NOS)

Since the 1954 liberation revolution, Algerian women had participated in political, social, and economic affairs. Despite the considerable advances in Algeria in the political, social, and economic spheres, women's employment activities remain very low. The share of employment by gender in Algeria remains unequal. There is a huge gender gap that exists in the period from 1999 to 2019 (figure 3.5). Particularly, UNESCO's report, entitled *The Time race for Smarter Development*, published on February 11, 2021 discuss women's situation in the world, drawing on the following subjects:

- Highlighting the secondary position assigned to women in the Arab world.
- The highest representation of female engineer graduates is found in the Arab World.
- Algeria records the highest rate of women engineers in the world after Benin and Brunei by 48.5%.

This issue stresses that Algerian women tend to break the monopoly of “engineering as men’s space”. The reality of Algerian female engineers represented in the report gives a more encouraging step to enhance women’s position in society. <https://www.Algerianwomeninscience.org/blog/algeria-has-the-highest-rate-of-women-engineers-in-the-world>

To this end, the presence of female workers in male-dominated domains in Algeria remains an issue of debate due to the instilled social conventions about the employment of women throughout history. Hence, the representation of female workers in male-dominated jobs; particularly, in engineering needs to be examined from a new perspective that considers the importance of the constitutive nature of discourse in reflecting their realities and the construction of their professional identities in the workplace.

Consistent with the purpose of the present research work, the research design is carefully chosen to provide an explanation to the problem under study that needs to be taken from a new perspective and methodological framework that guides the presence of female engineers at engineering workplace and contribute to the validity of the findings of the present research.

3.3. Research Design

The focus of this section is mainly on research design and methodology that govern the research at hand. Although the terms methodology and research design are used interchangeably in certain contexts, they have distinct meanings. Methodology is concerned with “*the principles, procedures, and practices that govern research*” (Geoffrey et al, 2005, p. 23), while research design refers to “*the plan used to examine the question of interest it provides*” (Geoffrey et al, 2005, p. 24). It provides a picture on the way the research is conducted and how information are collected. It is the framework that organizes the study.

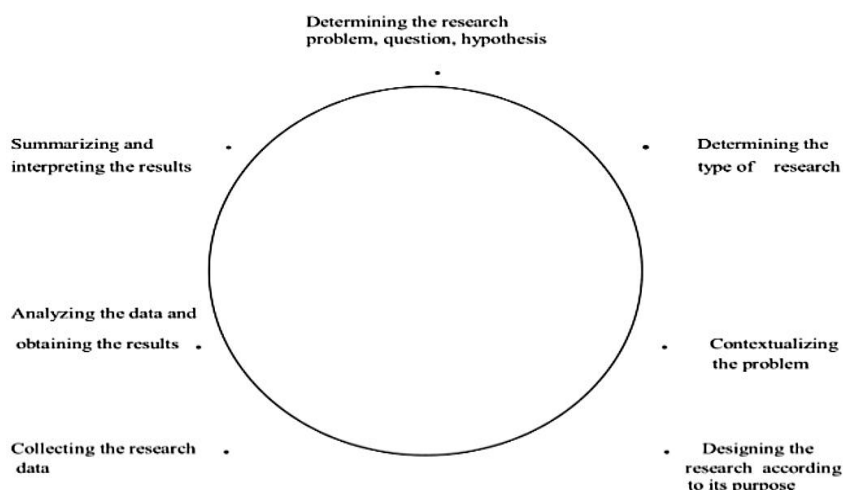
The construction of an adequate research design is a fundamental step after selecting the topic of investigation, defining the problem, formulating the questions being studied, choosing the sample of the research, and selecting adequate methods of data collection, since the implementation of a good research design plays a pivotal role to determine the significance and the impact of the study. Kothari (2004, p. 31) states that the research design

involves “an outline of what the researcher will do from writing the hypothesis and its operational implications to the final analysis of the data”. He (2004, p.31) provides a general overview about the designing decisions that should include:

- (i) *What is the study about?*
- (ii) *Why is the study being made?*
- (iii) *Where will the study be carried out?*
- (iv) *What type of data is required?*
- (v) *Where can the required data be found?*
- (vi) *What periods of time will the study include?*
- (vii) *What will be the sample design?*
- (viii) *What techniques of data collection will be used?*
- (ix) *How will the data be analyzed?*
- (x) *In what style will the report be prepared?*

Accordingly, Seliger & Shohamy (2000, p. 25) declare that the research design is concerned with the following circles that represent the different stages the research moves through:

Figure (3.7). *The Research Cycle (Seliger & Shohamy, 2005, p. 25)*

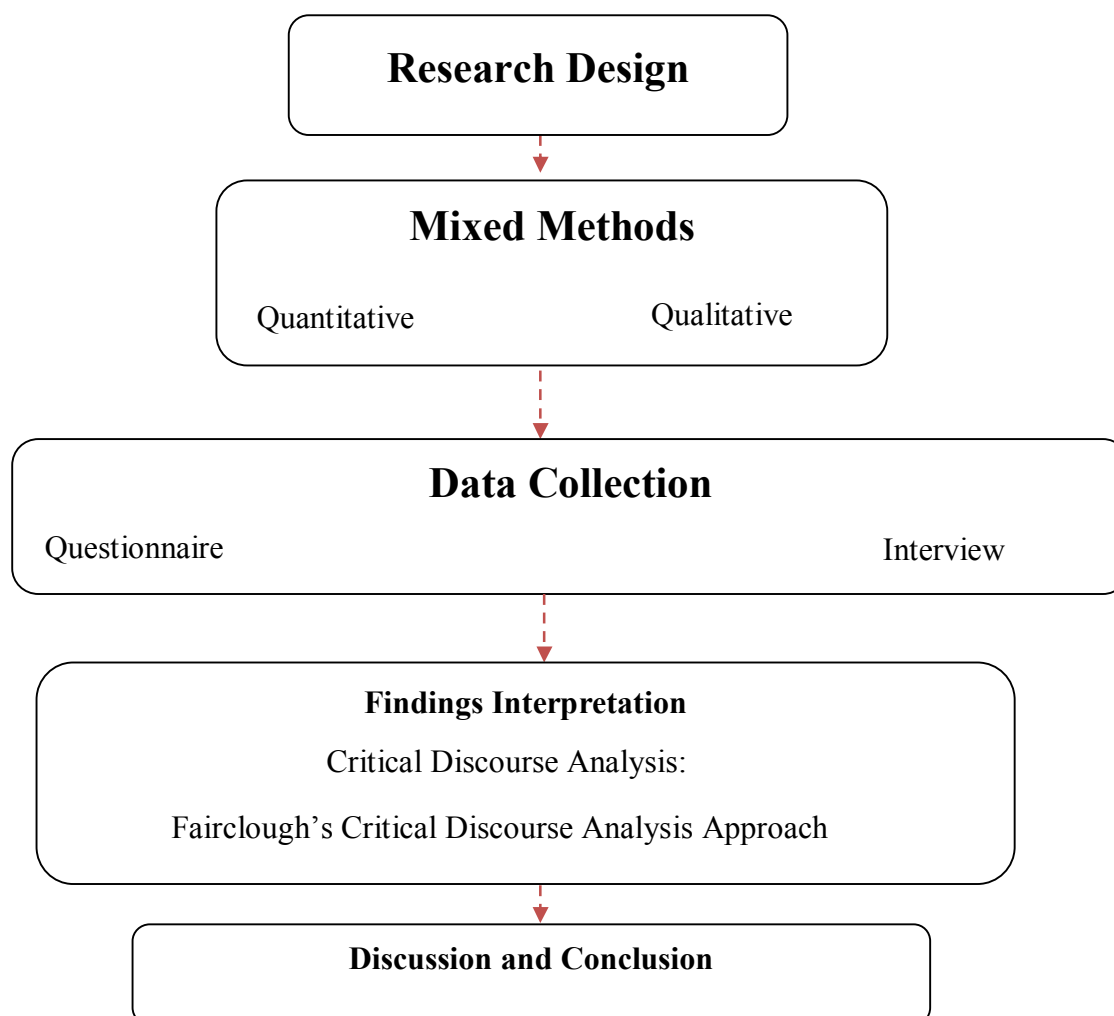


A careful preparation of the research design helps the researcher to organize ideas and findings, facilitates flexibility of emerging aspects of the problem, and provides the reliability of the data collected. Hence, the research design refers to the overall plan of a well established scientific research. Davis (2005) claims:

Writing or speaking about scientific research is no more difficult than other things you do. It is rather like building a house. If you have the materials you need and the know-how to put them together, it is just a matter of hard work. The materials come from your own study and research (p. 2).

Consistent with the above-mentioned view and with the current study, the present research design contains the statement of the research problem, the population and the sample of the study, approaches and procedures to be used in data collection, and data collection instruments. Accordingly, the present research design combines between quantitative and qualitative approaches (mixed method research) and methods to better reach the purpose of the study. Figure (3.7) presents the research design adopted in the present research work:

Figure (3.7). *The Research Design of the Present Research Work*



The present study opted for two main types of research; descriptive and exploratory research. First, descriptive research is concerned with describing the characteristics of a particular phenomenon, individuals or group. It aims at exploring a variable or a set of variables as they occur naturally (Gravetter & Forzano, 2011). According to Burns and Grove (2003), descriptive research is designed to provide a picture of a situation as it naturally happens. It may be used to justify the current practice and make a judgment and also develop theories. Based on the descriptive research type, the present study reports the different lived experiences of female engineers in the workplace context. Second, exploratory research (formulative research) is concerned with “*formulating a problem for more precise investigation of developing the working hypotheses from an operational point of view*” (Kothari, 2004, p. 35-6). It aims to obtain new ideas and thoughts that emerge during the data collection phase which are relevant to the research concern. Hence, it focuses on the flexibility to provide an opportunity to new aspects of the research under study.

As for the present research, investigating the impact of the engineering domain on the discursive construction of females’ professional identities, using adequate data collection instruments as questionnaire and interview. The respondents of this study are carefully selected to provide different types of lived experiences. Particularly, the interviews are constructed to emphasize the flexibility of emerging aspects. Kothari (2004, p. 37) claims that the exploratory research “*must continue to remain flexible so that many different facets of a problem may be considered as and when they arise and come to the notice of the researcher*”.


3.3.1. Setting, Sampling, and Research Participants

3.3.1.1. Setting

In attempting to explore the status of women engineers in Algeria in light of the present constraints in the domain of engineering, the research setting was the Algerian Company of Sonatrach. This section aims at giving a general description of the company to provide a clear understanding and a historical background of the workplace context.

Sonatrach Company (National Society for Research, Production, Transport, transformation, and Marketing of Hydrocarbons) is the Algerian oil and gas company founded in December 1963. It is ranked as the 12th company in the world. Sonatrach is the first and larger oil company in the Mediterranean and Africa and the 4th world's largest exporter of natural gas. Its role was, essentially, to contribute to the national development of Algeria. It was mainly targeted to increase the existing and future hydrocarbons requirements of Algeria. Figure (3.8) summarizes the main information about Sonatrach Company:

Figure (3.9). The Algerian *Sonatrach Company*

Sonatrach	
	
Type	<u>State-owned Corporation</u>
Industry	<u>Oil and Gas</u>
Founded	December 1963; 57 years ago
Headquarters	<u>Hydra, Algiers, Algeria</u>
Key people	Toufik Hakkar (CEO)
Products	<u>Oil (fuels, lubricants) Natural Gas (LNG) Petrochemicals</u>
Revenue	US\$ 76.1 billion (2012)
Owner	<u>Algerian government</u>
Number of employees	200,000 (2020)
<u>Subsidiaries</u>	<u>Naftal, Numhyd, ALEPCO, GALSI, GCB National Civil Engineering Co. ENTTP National Well Engineering Company</u>
Website	www.sonatrach.dz

Note. Figure (3.9) is adopted from <https://en.wikipedia.org/wiki/Sonatrach>

3.3.1.2. Population, Sampling, and the Research Participants

Theoretically speaking, a research population is a larger group of individuals selected to participate in a study. The research population is one important element in the research design that aims to structure data of the research. A basic choice for the present research is the

selection and the quantity of the present research population. It is the most difficult phase in any research project.

The research population played a major role in the accomplishment of this research study. The participants of this study are male and female engineers working in Sonatrach Company. From this large population, a random sampling was selected to accomplish this PhD project. Sampling refers to the process of selecting a group or individuals from the totality of populations for doing a study. Our sample is selected from Sonatrach Company (Algeria) because it is an area that is hostile to engineers. Worthy to mention, our population sample is the most difficult choice in the research project. The selected individuals represent the larger number of population. The present research encompasses two major types of sampling probability and non-probability sampling⁸ (Jackson, 2011). (<https://www.healthknowledge.org.uk/public-health-textbook/research-methods/1a-epidemiology/methods-of-sampling-population>).

Consistent with the semi-structured interviews as a qualitative data collection method, the researcher opted for one efficient type of non-probability sampling technique. Arguably, judgment (purposive) sampling means choosing participants who could provide adequate and relevant knowledge about the topic of study. It refers to selecting a sample with predetermined purposes even the sample is not representative. Here, the researcher chooses a sampling to suit the needs of the study based on specific characteristics and knowledge such as gender variables. So, this study opted for selecting female engineers participants to be included in the interviewing discussions to have a good understanding of the status of female engineers. We interviewed 15 female engineers who could enable in-depth views of women's experience of their profession from the perspective of women themselves. This technique is necessary to ensure that the participants have the required knowledge about their experiences in the engineering domain and the negotiation of their professional identities. The case studies are representative of their unique experiences that deserve to be shared. Each case should be the focus of attention and worthy of study that represents social structure and social reality from the participants' standpoints.

The sample selected for the questionnaire technique and most quantitative sampling methods is relatively probability sampling. The present research opted for a combination of three types of sampling techniques; random sampling, clustered sampling, and stratified

⁸ Probability sampling means that every member of the population has a chance of being selected as a member of the study while non-probability sampling is mainly non-random technique which means that not every member of the population to be selected to be part of the study (Jackson, 2011).

sampling. Random sampling is concerned with selecting subjects that all the members of the population have an equal chance of being selected. Individuals are chosen randomly. It is the most efficient and straightforward technique since it reduces the bias that is based on volunteering or the choice of people to contribute to research. Clustered sampling means that the population is divided into subgroups “clustered” and randomly selected to participate in the study and all the members are included in the study. While stratified sampling refers to the process of dividing the population into two different sub-groups with specific characteristics such as gender: male and female who are selected randomly based on random sampling. (<https://www.healthknowledge.org.uk/public-health-textbook/research-methods/1a-epidemiology/methods-of-sampling-population>)

Hence, the questionnaire of the present research includes a group consisting of 100 participants, they have been divided into subgroups (clusters) and a random group is selected as the sample based on gender variable; 50 female participants and 50 male participants. They are representative of the target population.

3.3.2. Mixed Approaches in Workplace Discourse

Any research work needs adequate methods that should be chosen carefully to provide the data required to fulfill the objective of the research. More important, research questions which are well designed are the key elements in a well -constructed empirical research, guiding the implication of the research methods, data collection, and data analysis. In this vein, we have to consider carefully what we wanted to ask both descriptive questions (do/ does...), explanatory questions (why, how), or evaluative questions (what) (Sunderland, 2010).

Through his chapter *Qualitative, Quantitative or Both Combining Methods in Linguistic Research*, Jo Angouri (2010) (as cited in Litosselitti, 2010) highlights the importance of both methods in studies related to the field of Applied and Sociolinguistics that stress the value of combining qualitative and quantitative data gathering methods in recent years together with applying data analysis techniques which add great interest that prove great significance and applicability. Angouri (2010, p. 30) articulates that “*Green et al (1989) reviewed studies taking a mixed methods approach and argued that combining the two paradigms is beneficial for constructing comprehensive accounts and providing answers to a wide range of research questions*”.

The research methods adopted in any research work correspond with the research questions that the researcher conducts to receive answers which require “instrumental stance” to have a better understanding of the issue under investigation and to reveal a different aspect of reality

through the combination of approaches (Angouri, 2010, p. 32). Also, Holmes and Meyerhof (2003, p. 15) highlight the relevance of combining both qualitative and quantitative methodologies in CDA studies. They (2003) claim that “*have consistently argued for, and indeed, adopted approaches which attempt to integrate [emphasis mine] quantitative and qualitative methods of analysis as essential background to assist in the detailed qualitative integration of the discourse*” (as cited in Angouri, 2010, p. 32).

Recent research in discourse studies related to the workplace has focused on the combination of both qualitative and quantitative paradigms. Angouri (2010, p. 37) states that workplace discourse has become the focus of many disciplines such as Linguistics, Management, Sociology and Psychology. Particularly, Angouri (2010) identifies that research in Linguistics aims at:

- (a) the identification of patterns of language use and/or development of the skills the employees need to be competent users of the language(s) for work related purposes, (b) the study and/ or description of the spoken/ written language –or rather the discourse-workplace participants engage in (p.37).

The first aim is related to a pedagogical concern, whereas the latter is mainly related to people’s communication concern. Hence, this research seeks to bridge the gap between qualitative and quantitative methods since the integration of both qualitative and quantitative data in research may have great potential to enrich the analysis and findings.

3.3.2.1. Qualitative approach

The use and the utility of the qualitative approach are increasingly being recognized by many researchers in social sciences, concerning feminist and critical discourse studies. Qualitative research refers to “*research that is based on descriptive data which does not make (regular) use of statistical procedure*” (Mackey &Gass, 2005, p. 162). The nature of this type of research is explanatory that aims to provide a good theoretical grounding which is mainly “*valuable in providing in-depth-rich data*” (Sunderland, 2010). According to Mackey &Gass (2005, p. 162-64), this research approach is characterized by:

- *Rich description*
- *Studying phenomena in their natural setting*
- *A small number of participants*

- *It adopts an emic perspective: takes as its starting point the words of the participants in a specific context to allow concepts to emerge and to uncover unexpected findings.*
- *Emergent because it is context-dependent that questions emerge from the context.*
- *Open-ended process*
- *Narrowing of the focus*
- *Hypothesis generating as an outcome of the research*
- *Gives a better understanding of phenomena*
- *Possible ideological orientations to address social change*

This approach is by nature descriptive that aims to find answers to questions asked to participants in their setting and explores how things appear to them. Berg (2001) states that:

Qualitative research properly seeks answers to questions by examining various social settings and the individuals who inhabit these settings. Qualitative researchers, then, are most interested in how humans arrange themselves and their settings and how inhabitants of these settings make sense of their surroundings through symbols, rituals, social structures, social roles, and so forth (p. 06-07).

According to Burns & Grove (2003), descriptive research is designed to provide a picture of a situation as it naturally happens. It may, then, be used to justify current practices and make a judgment, develop theories and predict future situations. Burns & Grove (2003: 19) describe the qualitative approach as “*a systematic subjective approach used to mention life experiences and situations to provide them a meaning.*”

The qualitative approach works in line with descriptive research by focusing on people’s experiences of a certain social phenomenon and how people give meaning to it, how they make sense of their own lived world and hence the manner they behave and interact with it. Their lived experiences and opinions are put at the centre of the research enquiry to add unique data collection to the study. Rubin and Babbie (2001) claim that the qualitative research approach provides a deep understanding of the human nature and experience. It helps to provide the image of the way participants experience their world which does not mean that these experiences are typical for the majority group or reflect the whole society i.e. each case should be the focus of attention and worthy of study that represents the social structure and reality where participants interact and explain from their standpoints.

The present research also takes a descriptive stance. It depicts participants' perceptions of engineering workplace, involving the meaning they give to their workplace culture. It aims to report the influence of the workplace on their practices on engineering work and the discursive construction of female engineers' identities. As researchers, our focus tends to be on the methods used in gathering qualitative data that are concerned with description. The emphasis is on observation, interviews, and analyzing texts and talks i.e. discourse. Particularly, the use of this approach is meant to describe the experience of each participant that reflects the representation of the truth and the reality of the social structure that participants make part where they perform their social interaction. In the same vein, this thesis draws on the tenets of CDA approaches that investigate and reveal the social processes as well as social structures work through text and talk.

The present work takes the notion of discourse as a social practice which means that *"discourse-analytic approaches reveal the 'meaningfulness' of text and talk"* (Baxter, 2010, p. 117). Through focusing on discourse, we are giving meaning to the world around us. Philips and Hardy (2002, p. 03) recognize the integrated relationship between discourse and reality, claiming that *"social reality is produced and made real through discourse, and social interactions cannot be fully understood without reference to the discourses that give them meaning"*. The aim, here, is to look through participants' lens at the phenomenon presented focusing on an inductive approach to generalize the findings from the textual data.

3.3.2.2. Quantitative approach

Another basic concept in methodological research is the quantitative approach of collecting and analysing data. The quantitative approach takes as a principle statistical analysis. It starts by defined research questions that guide the data collection and the analysis of the findings (Vanderstoep& Johnston, 2009). Kothari (2004, p. 03) defines the quantitative approach as *"the measurement of quantity or amount. It is applicable to phenomena that can be expressed in terms of quantity"*. The main characteristics of quantitative research are:

- *The data is usually gathered using structured research instruments.*
- *The results are based on larger sample sizes that are representative of the population*
- *The research study can usually be replicated or repeated, given its high reliability.*
- *The researcher has a clearly defined research question to which objective answers are sought*
- *All aspects of the study are carefully designed before data is collected*

- *Data are in form of numbers and statistics, often arranged in tables, charts, figures, or other textual forms*
- *Project can be used to generalize concepts more widely, predict future results, or investigate causal relationships.*
- *The researcher uses tools, such as questionnaires or computer software, to collect numerical data* (Quantitative research and Analysis: Quantitative Methods Overview: <http://lib-guides.letu.edu/>).

The main distinction between quantitative and qualitative studies is that the former is concerned with numerical information. The latter includes data that are not numerical i.e., descriptive data or textual data. Vanderstoep& Johnston (2009, p. 07) summarize the characteristics of quantitative and qualitative research that are considered as basic distinctions between the two approaches:

Table (3.1). *Quantitative versus Qualitative Research (Vanderstoep& Johnston, 2009)*

Characteristic	Quantitative Research	Qualitative Research
Type of data	Phenomena are described numerically	Phenomena are described in a narrative fashion
Analysis	Descriptive and inferential statistics	Identification of major themes
Scope of inquiry	Specific questions or hypotheses	Broad, thematic concerns
Primary advantage	Large sample, statistical validity, accurately reflects the population	Rich, in-depth, narrative description of sample
Primary disadvantage	Superficial understanding of participants' thoughts and feelings	Small sample, not generalizable to the population at large

The present research has opted for two major approaches of data collection and evaluation as an effort to offer a comprehensive aspect of the topic. The qualitative approach was adopted to provide a general exploration of the lived experiences of female engineers. Also the qualitative approach was used to explore female engineers' construction of their identities in a discursive process. The quantitative approach was adopted to provide an understanding of the construction of females' professional identities. It has provided the research with tools to develop numerical findings which are based on exploring the construction of females' professional identities at engineering workplace.

3.3.2.3. Discourse Analytic Approaches to Text and Talk

As defined earlier in this research work (see chapter one), discourse includes talk, text, and actions. It is oriented as a vehicle to analyze meaning and actions. Thus, discourse underlines ideologies, power relations. Particularly, engineering is a context of making meaning and doing actions. Engineering workplace embodies ideological and socio-cultural practices, power relations, and work policies. It is a site of analysing workers' social and professional practices.

3.3.2.3.1. Critical Discourse Analysis

With the advent of the 1970s, the study of discourse has witnessed the starting of a kind of discourse that treats language as a component that plays a primordial role in constructing and structuring power relations in society. Particularly, the multidisciplinary Critical Discourse Analysis (CDA) is valued as the most influential theory in the study of discourse. It began with the premise of studying discourse in light of multifaceted stands and approaches that vary methodologically, but have a common conceptual approach by sharing critical perspective (Van Dijk, 2001, p. 353). CDA refers to a branch of applied linguistics which is traced back to the works of some prominent figures in the field such as Roger Fowler, Norman Fairclough, Teun Van Dijk, and Ruth Wodak (Hart, 2010).

Critical Discourse Analysis is a type of discourse analysis or a multidisciplinary approach to the study of discourse. CDA is '*a theory and method analyzing the way that individuals and institutions use language*' (Richardson, 2007, p. 1). The discipline is typically concerned with relationships between language, power, ideology, and dominance i.e. it focuses on how power relations, dominance, and social inequality are produced, reproduced, legitimize, and institutionalized in texts and talks in a variety of contexts (Van Dijk, 1993). Arguably, Critical Discourse Analysis Approach takes an explicit and visible position to uncover and resist

ideological and political views and beliefs (opaque and transparent) which are figured in texts and talks, aiming at erasing power relations and social inequality to reach equality and a better social change. It considers discourse as a critical way of reflecting upon reality and touches to series of fundamental social relations concerned with power and ideology that are almost invisible. To a great extent, CDA works to demystify discourses by deciphering hidden ideologies, power and control, and relations of dominance that are manifested through language use.

Hence, CDA aims at producing enlightening and emancipated actions to reality, it acts as a mediator between texts and talks focusing on the social issues, therefore, it analyses and interprets the hidden ideologies which act in subtle ways within broader social contexts concerned with how language contributes to the construction of reality, Fairclough (2001) confirms:

CDA analyses texts and interactions, but it does not start from texts and interactions. It starts rather from social issues and problems, problems which face people in their social lives, issues which are taken up within sociology, political science, and/or cultural studies(p. 26).

Discourse constitutes and transmits social reality, social identities, social relations of dominance, and production of power relations. It, then, has a deep influence on the production, reproduction, and representation of particular ideological and falsifying assumptions and beliefs. Fairclough & Wodak (1997) confirmed “*since discourse is socially influential, it gives rise to important issues of power*” (p. 358). Hence, CDA's main role lies at uncovering those hidden ideologies produced and maintained by social groups in discourse. Fairclough & Wodak (1997) mentioned that “*CDA aims to make more visible these opaque aspects of discourse as social practice*”(p.358).Wodak& Meyer (2001) share the same view about the concept of CDA in addressing social change by stating:

CDA may be defined as fundamentally concerned with analyzing opaque as well transparent structural relationships of dominance, discrimination, power, and control as manifested in language. In other words, CDA aims to investigate critically social inequality as it is expressed, signaled, constituted, and legitimized, and so on by language use (or in discourse)(p.02).

As explained above, one fundamental issue to Critical Discourse Analysis research is that it takes language as central for social practice; thus, CDA stresses the need to understand and see how language works in constituting the knowledge related to power and social institutions as conveyed by Hebermas (1967,p. 259) who stated that “language is also ideological”. The same view is relevant in the work of Fiske (1964) years ago, he claimed that the institutionalized, ideological stance is embedded within and through language, stating that “our words are never neutral”.

Fairclough and Wodak (1997, p. 271-80) summarize the main tenets of CDA approach in society:

- *CDA sees language as a social practice*
- *CDA addresses social problems*
- *Power relations are discursive and exercised in discourse*
- *Discourse constitutes and is constituted through society and culture*
- *Discourse does ideological works.*
- *Discourse is historical and understood in its historical context*
- *The link between text and discourse is mediated*
- *Discourse analysis is interpretive and explanatory it goes beyond the analysis of text*
- *Discourse is a form of social action*

Critical Discourse Analysis shows how social relations and ideologies are encoded in texts and talks. Precisely, of CDA experts use specific methodological tools to achieve their critique. Typically, this kind of critique is considered a “socio- diagnostic critique” (Reisigl &Wodak, 2001), it aims to reach social influence, raise awareness, and bringing to light the “*public consciousness*” (Hart, 2010, p 05-13). Hart (2010) highlights the role of the analyst, he claims that “*Critical Discourse Analysts wish to understand, expose and ultimately resist latent racist ideologies and arguments in texts with a view to achieving changes in the social structure*” (p.13).

Moreover, the notion of ‘critical’ is central to CDA approaches. The history of term “critique” refers to ancient Greece with the emerging of the age of enlightenment, it means “*the use of rational thinking to question arguments or prevailing ideas*” (see Foucault &Wodak, 1997). Hence, CDA as an interdisciplinary critical approach is highly influenced by Marxist and Frankfurt School in considering the term “critique” as “a mechanism” to explain and change a particular social situation – reaching a better social change-. Particularly,

discourse touches into series of fundamental concepts related to social relations such as “power”, “ideology” and “dominance” which means that there is always an accompaniment of a critical stance at work to demonstrate unequal power relations that exist within the social scale hoping at reaching social change. Terry Locke (2004) stresses the need of doing critical work within a particular social and cultural system of thoughts. He (2004) justifies that “*the word critical denotes the habit of evaluating an object or situation in accordance with a system of rules, principles and values*” (p. 26). Again, Terry Locke (2004, p. 32), sheds light on the role of CDA approaches to uncover the effects of power and ideology on the stability and the naturalization of ‘unequal power relations’ and ‘societal conventions’ that are perceived as ‘given’.

Jorgenson & Phillips (2002) suggest that CDA blames the implicit and embedded power and ideologies in the maintenance of social inequality among social groups:

CDA is critical in the sense that it aims to reveal the role of discursive Practice in the maintenance of the social world, including those social relations that involve unequal relations of power” (p. 63).

Moreover, the term “critical” basically draws on the strong link between social and political contexts in an explicit way to uncover those social and deeply hidden ideologies. In the same context, Fairclough (1995, p. 747) confirms the above view “*in human matters, interconnections, and chains of cause-and-effect may be distorted out of vision. Hence, “critique” is essentially making visible the interconnectedness of things.*”

Almost all critical approaches to discourse analysis share common features about discourse and society which are considered as the main focus of the study of discourse:

■ Discourse is a social practice. It is constitutive –shapes the world- and constituted- shaped by it-. There is an emphasis on the role assigned to discourse in the construction of social reality. It is considered as a social practice whereby social reality is constructed and in turn, is constituted through that reality. Barker & Galasinski, 2001, p. 64) posit that “*through discourse that language users constitute social realities*”. Andrea Mayr (2008, p. 05) confirms the role of discourse in “shaping reality” and “creating patterns of understanding” in the social practices. Thus, discourse is considered as a form integrated through the social practice where social reality is constructed and in turn constituted in language use “*through discourse that language users constitute social realities*” (Barker & Gramsci, 2001, p. 64). In the same vein, the discursive practice is intrinsically related to the context of its occurrence,

being socially, politically, or ideologically driven. Hence, certain social realities come into existence. In this sense, Fairclough perceives discourse as representing social practice. He defines (1989) discourse in terms of social practice conveyed by social actors i.e. individuals:

Discourses are driven representations of social life which are inherently positioned-differently positioned social actors “see” and represent social life in different ways, different discourses. For instance, the lives of poor and disadvantaged people are represented through different discourses in the social practices of government, politics, medicine, and social science and through different discourses within each of these practices corresponding to different positions of social actors. Finally, discourse as a part of ways of being constitutes styles-for instance the styles of business managers, or political leaders (p.02).

Foucault highlights the constitutive role assigned to discourse. He (1972) defines discourse as “*practices that systematically form the objects of which they speak*” (p. 49). Also, Sunderland (2004) states that discourses are “*abstract vehicle[s] for social and political processes are inherently ideological flows of information*” (p. 08). They underline power relations and shape social realities. Jane Sunderland (2004) gives the example of a gendered discourse about women as “caregivers” that has become deeply imposed by those powerful ideologies as a given role distributed to women through power as “*an effect of discourse*” not as an “*entity that can be possessed*” that contributes to influence discourse to be shaped as natural and practical upon women. Accordingly, Laclau & Mouffe theorize that “*discourse itself is fully constitutive of our world*” (as cited in Jorgenson & Phillips, 2002, p. 19). They claim that the social practice which is conveyed by discourse shapes our existing world. Jorgenson & Phillips (2002, p. 19) consider the social practices as actions that convey double meaning. One meaning is concrete; it is accomplished on an individual level and a typically context-bound. While, the other meaning revolves around the state of these actions as being institutionalized; they are accomplished as socially regulated patterns.

Accordingly, Foucault (1969) stresses that discourse is a social practice, arguing that discourses are “*practices that systematically form the objects of which we speak*” (p. 49). He draws on the definition and the analysis of “the discursive formation” of objects, subjects, and concepts. According to him, discourse plays a major role as responsible for the production of the subjects who are (experts) authorized to discipline others and also for the objects. Thus,

discourse is concerned with how the social world, including its subjects and objects, are constituted, created, and conveyed in its historical and social contexts. He asserts (1969) that *“discourse contributes centrally to producing the subjects we are, and the objects we can know something about (including ourselves as subjects)”* (as cited in Jorgenson & Phillips, 2002, p. 14). Also, Steiner Kvale (1992, p. 36) expresses the importance of discourse in shaping and reflecting culture, arguing that *“the self no longer uses language to express itself; rather language speaks through the person. The individual self becomes a medium for the culture and its language”* (as cited in Jorgenson & Phillips, 2002, p. 14-15).

Discourse uncovers opaque ideologies and power relations. Hence, CDA is principally concerned with underlying and uncovering the subtle ideologies. CDA is a means to influence the minds and raise awareness of the social groups to resist dominance and inequality in society (van Dijk, 1995). Hence, the term ideology has been given a great interest and value in discourse studies such as the CDA approach. Many critical analysts and scholars claim CDA as a critical approach and an exclusive method in recognizing and uncovering social matters as the operation of ideologies, power relations, and social dominance monitored through discourse i.e., language in use, and contributes to raising critical language awareness among individuals and social groups. Brahim & Riasati (2011), consider discourse as naturalized in both institutions and social members' discourses, since it is ideologically to work with specific social contexts.

3.3.2.3.2. Fairclough's Critical Discourse Analysis

One of the major influential theoretical approaches in CDA is Fairclough's critical discourse analysis approach that differs in terms of its theoretical foundation and analytical tools in dealing with power relations and ideologies using a critical stance in discourse being spoken or written texts. The analytical approach of the present study draws on Fairclough's Critical Discourse Analysis Approach, since it relies on the discursive co-construction of female engineers' professional identities at engineering workplace in Sonatrach Company. This study considers the workplace as loaded with full indications about the language used in professional settings and about females' experiences in light of prevailing power dynamics, and masculinities in their work setting.

Fairclough's approach to CDA is central to discourse as social practice. His approach considers discourse as a way of analyzing social and cultural modifications as a way to protest against powerful groups through language that contributes to shaping and to be shaped by social reality that is to say language is part of society. Fairclough (1993, p. 43) states that

CDA aims to “*explore often opaque relationships of causality and determination between (a) discursive practices, events and texts and (b) wider social and cultural structures, relations and processes*”

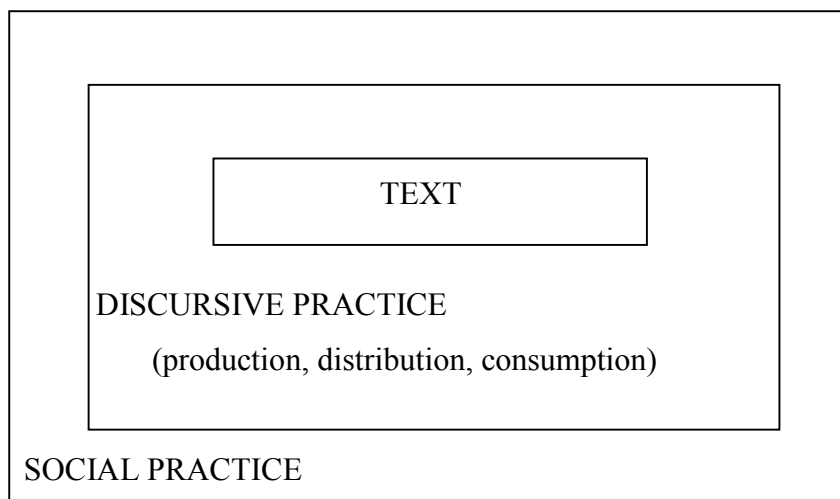
Fairclough (1989) theorizes “Dialectical Relational Approach”, conceptualizing discourse as a social practice that relates the analysis, the production of text to the social context, and conditions of its occurrence. Accordingly, he (1989) considers that CDA moves through three stages:

1. **Description:** refers to the formal properties of the production of the text, the text is an object.
2. **Interpretation:** refers to the relationship between the text and the social interaction i.e. the text is a resource in the process of interpretation related to participants’ interactions.
3. **Explanation:** refers to the interaction and social context with the process of production and process of interpretation and their social effects. It deals with the relationship between social events and social structures which are affected by participants.

Two main points are central to Fairclough’s approach (1989). First, language is part of society and not something that is external to it; “*language is a form of social practice*”. Second, language involves non-linguistic components of society; “*language is a social process*” which means that “*language is a socially conditioned process*”. This notion considers the text as a product and discourse as the process of social interaction (Fairclough, 1989, p.22). Accordingly, Fairclough (1989) identifies three dimensions of discourse which are text, discursive practice, and social practice. Relatively, following Michael Holliday’s conception of text, Fairclough defines text as being written or spoken. Yet, he uses the term text to refer to “*the written transcription of what is said*” (1989, p. 24). It is the product of the process of text which includes the process of production and interpretation where a text is a resource. The discourse is used to refer to the whole process of social interaction. Hence, text analysis is part of discourse analysis that involves the process of production and interpretation. Discourse involves the whole process of social interaction and the process of text production and interpretation i.e. the social conditions of production and the social conditions of interpretation. The social conditions that shape people’s member resources (MR) entail production and interpretation of texts (Fairclough, 1989, p. 25) i.e., people bring to text production and interpretation their “Members’ resources” that include “*their knowledge of language, representation of natural and social worlds they inhabit, values,*

beliefs, consumptions, and so on” (Fairclough, 1989, p. 24), referring to language as a social practice that is conditioned by other non-linguistic properties of society. These resources are mainly cognitive and social processes found in people’s minds manifested in social relations and struggles which are transmitted and unequally distributed between individuals in society.

Figure (3.10). *Three-dimensional conception of discourse (Fairclough, 1989)*



Fairclough (1989) argues that the analysis of text involves the analysis of the relations between texts, processes and their social conditioning at a situational context of its occurrence and at the institutional context of the social structure where texts intertwine with interactions and contexts. Fairclough’s approach (1989) analyses language in relation to power and ideology i.e. in light of social relations and how power is exercised and shaped by people’s conventions. Fairclough refers to the presupposition of common senses which are taken for granted by people who are made blind about their existence that is involved within an ideology that depend on the power relations which are “*asymmetrical, unequal, and empowering that belong to special class or group*” that submit to the process of naturalization and legitimization in discourse which is related to the ideological common sense on the taken for granted assumptions that are naturalized in discourse.

3.3.2.3.1. Feminist Critical Discourse Analysis (FCDA)

In present times, Discourse Analysis receives great attention in social sciences ground. Precisely, it is argued to be attractive to Feminist Studies. Discourse with a gender focus resulted in the appearance of Feminist Critical Discourse Analysis (FCDA), since the study of discourse considers language as an interactive activity that is concerned with producing

socio-cultural knowledge and constituting a site for the production and the reproduction of social identities i.e. discourse remains one important area for investigation through which language is not just a vehicle for reflecting reality, but actively constructs that reality (Fairclough, 1992). Feminists argue that women are largely subjected to stereotyping that associate women with social practices that render them powerless. FCDA aims to uncovering unfair issues where women have undergone submissiveness in society. It also aims to react to men's dominance in patriarchal societies where women are treated as secondary to men. The concepts of gender ideology, power, and oppression are central in the feminist debate, since many feminist approaches and studies aim at analyzing and uncovering the complex working of power in discourse that sustains gendered relations in society.

Adapting the study of discourse from a critical feminist perspective in the present research contributes to explore female engineers' construction of professional identities with regard to prevailing power dynamics reinforced by discourses of masculinity. This approach aims at uncovering hidden ideologies and asymmetrical power relations between male and female engineers.

3.3.3. Triangulation

Triangulation is a central methodological concept in a successful and influential research design. The triangulation method refers to "*the use of multiple independent methods for obtaining data in a single investigation*" (Mackey & Gass, 2005).

The work of Jo Angouri, entitled *Combining Methods in Linguistic Research*, highlights the importance of triangulation in scientific research. He (2010) states that the triangulation method is the most commonly used type of research methods; it refers to "*the application of more than one sampling method for data collection*"(p.34). Accordingly, Nightingale (2020) argues that the data triangulation method aims at enhancing the validity of the findings and creating a more in-depth picture and a deep understanding of the research study.

Consistent with the research objective that seeks to explore females engineers' discursive construction of professional identities at engineering workplace, the current study demonstrates the usefulness of triangulation as it integrates multiple uses of methods that call for the combination of qualitative and quantitative approaches that contribute to a better understanding of the research under investigation, relying on a set of research instruments that are questionnaire and interview.

3.3.3.1. Data collection instruments

The emphasis of the present research project is on the integration of quantitative and qualitative types of data collection methods. It selects the most salient instruments of data collection as questionnaire, interview, and participant observation that are thought to be adequate for linguistic studies. The objectives behind this combination of instruments are to test the hypotheses, provide a clearer understanding and a detailed analysis to data collection, and confirm the obtained results from each instrument. To fit the needs and the purpose of the research, the data was gathered from relevant triangulation methods discussed in the present section.

3.3.3.1.1. Description of the Questionnaire

Like many other methodological tools for collecting quantitative data, the questionnaire is the most common method for data collection. The questionnaire is the most common tool in human sciences and linguistic studies. It is a data collection instrument that consists of series of questions and other prompts for the purpose of gathering information from respondents; it aims to *“measure people’s attitudes to and perceptions of languages (or variation of particular languages, such as dialects and accents) or groups of speakers”* (Rasinger,2010, p. 60). Among the benefits of this quantitative method is the largest amount of data collection. Rasinger (2010, p. 60) posits that *“one of the major benefits of questionnaire: they can, potentially, generate large amount of data which is comparatively simple to process”*, since quantitative research methods, i.e. questionnaire, is based on the measurement of quantity or amount to collect rapidly a large amount of data from a large number of people.

The importance and utility of the questionnaire as a method widely used in doing research lies in the design and the construction of meaningful questions. The theoretical framework that governs the study controls the type of questions asked such as: what data the researcher wants to answer the research questions, what key questions the researcher emphasizes to answer the research questions. In the process of designing the questionnaire, our main concern was to form good and direct questions which we thought could provide interesting information, and generate reliable and valid data to the problem under investigation (Rasinger, 2010).

Central to the present research aim, the questionnaire consisted of a series of written questions to particular informants who share common professional aspects to answer the questions; the questionnaire entails a series of sections to seek the details of the issue under study concerned with the characteristics, perceptions, experiences, representations of the

domain of engineering and workplace challenges. The present research has sought to ask a diverse sample of participants to gather a large amount and various data to research under investigation. The questionnaire was given to a total number of 100 participants; it includes 50 female participants and 50 male participants from varieties of sub-disciplines in engineering i.e. holding different degrees in engineering including: computer science engineering, electronic engineering, mechanical engineering, civil engineering, electro-technical engineering, and computer science engineering. The structured questionnaire was distributed to have a clear understanding of participants' perceptions of engineering, highlighting their coping strategies, conceptualization of female engineers' participations at engineering workplace in Sonatrach Company in Algeria. The questions are written in Classical Arabic, the questions are designed to be easy and comprehensive in order to avoid ambiguity. The questionnaire allows the researcher to collect the most complete and accurate data in a logical flow. Further details will be displayed in the next chapter.

The questionnaires were administered to 100 engineers, they were mainly designed to find out participants viewpoint about engineering. They were divided into five sections:

- Participants' profiles
- Participants' perceptions of engineering workplace
- Participants' Attitudes towards women's participation at engineering workplace
- The construction of females' engineers' professional identities at engineering workplace
- Participants' challenges at engineering workplace

The first section, entitled "participants' profiles", includes personal and professional questions about the participants. It aims to give a background understanding about them concerning gender, social status, and professional status, including current position and experience at engineering workplace.

The second section, entitled "participants' perceptions of engineering workplace", encompasses the participants' choice, views, and perceptions about engineering that reflect the sense of belonging to engineering workplace.

The third section, entitled "participants' attitudes towards women's participation at engineering workplace", explores participants perceptions of female's presence at engineering workplace. It is mainly conducted to determine women's participation at engineering practice to reflect their status and report their experiences.

Section four is about "the construction of females' engineers' professional identities at engineering workplace". It aims to investigate participants' discursive negotiation and

reconstruction of their professional identities, giving importance to the strategies they use or adopt to cope with the complexities of the engineering workplace.

The last section is entitled “Participants’ challenges at engineering workplace”. It includes the difficulties and the barriers that participants face to do their job. It aims to allow the participants to voice their challenges that may have significance to the study.

3.3.3.1.2. The description of interviews

Interviewing as a data collecting method refers to the “*presentation of oral-verbal stimuli and reply in terms of oral-verbal responses*” (Kothari, 2004, p. 97). Cohen et al. (2007) declare that interviews enable participants to discuss their interpretation of the world where they live. According to Hall (2011), semi-structured interviews entail pre-formulated questions. They are used because it is a very good way of accessing people’s perceptions (Punch, 1998, p. 174). Moreover, the interview allows for richer interaction and more personalized responses (McDonough and McDonough, 1997). Hence, this PhD Project conducts in-depth semi-structured interviews with female engineers from an exploratory qualitative perspective to investigate identity construction, coping strategies, and challenges to the male-dominated culture.

Interviewing as a data collection method is our central concern to this research work in reporting the status of female engineers, the construction of female engineers’ identities, and their experiences at engineering workplace in Sonatrach Company. Consideration is given to the contemporary role and positions of female engineers. Female engineers’ interview is a crucial method in qualitative research approach, since it tells something about the image of female engineers and about what constitutes a professional engineer, what boundaries are drawn to differentiate male and female engineers to constitute engineering identities, what engineering identities that most persist (best admitted) in light with available versions of masculinities at the centre of engineering to make them comfortable at work.

Semi-structured interviews are a decisive tool that is useful to explore the discursive perspective with a clear and direct enquiry of female engineers’ familiarities as well as evaluation of their culture, bringing to the surface implicit and explicit gender dynamics, social norms, cultural assumptions, and institutional practices related to engineering workplace culture at Sonatrach Company. Semi-structured interviews are an effective way to achieve this in-depth view to explore the working environment. This analysis serves to enrich the data with a direct connection with participants to better explore the engineering culture and the construction of the female professional identities in light of the institutional and

conventional discourses about the norms of engineering as well as providing a clear discussion about their persistence and challenges that highlight women's awareness about the restrictions they face at engineering workplace.

- Central to this study, through various interviews with female engineers; we realized that females working in male-dominated engineering among other domains needed to be documented in scientific research and shared with the public. The semi-structured interviews were conducted with 15 female engineers from various disciplines in the engineering domain (their minimum age was 27 years old and their maximum age was 51 years old). Most of them show their pleasant status to respond to our questions, they argue that it may be a way to voice their silencing and to bring to the public the institutional strategies of females' underrepresentation at engineering domain. We cannot ignore that some of them were hesitant at first glance and didn't show interest, but when explaining the research topic and its objectives, they show their curiosity about the topic. Yet, we were given the impression that the female participants did not want to be very judgmental about the coworkers, the system of the organization because they consider that they are part and members of the organization. More important, 8 of our interviews were telephone interviews, 4 were online interviews and just 3 interviews were set face-to-face with the interviewees. The questions included in the interview process had a deep relationship with the research literature (see chapter 01 and 02). The greater part of the interview questions were asked in the form of open-ended questions. The selection of the participants and the interviews chosen as most adequate for the research project was governed by the following variables:

- Gender: the interviews were designed to address female engineers only.
- Age: to show whether female's underrepresentation in engineering was related to their age and whether they share related experiences.
- Workplace: engineering domain (with its sub-disciplines)

The semi-structured interviews with female engineers aim at developing discussion about females' experiences in typically male-dominated domains. They were conducted in line with the research objective, and other emerging themes were expected to guide the discussion. Our duty was to create a comfortable and friendly atmosphere in order to allow the natural fluidity and flexibility of the answers, keeping the interviews under our control. We attempted to give some freedom to enable the interviewees to speak freely and openly about the issues they consider to be of particular importance and significance.

The semi-structured interview is central in this research because the types of structured and unstructured questioning could encourage the respondents to probe into what they said about their experiences and about the nature of their work with their own words, since the primary objective was to give the participants as much scope as we can to allow women to speak about themselves in their ways to share their ideas and perceptions. The theoretical framework of this PhD project dictates the type of questions asked in the interview process. To this end, the interviews offered an important contribution as part of the main data collection. As researchers, we constantly ensure the transparent description and the reporting of the data to rich the credibility of this PhD Project.

Another important stage in linguistic and discursive research is transcription. The linguistic notions of transcription refer to “*translation*’ of speech into writing. In this tradition, transcription conventions are used to express features of speech, such as intonation, hesitations, or pauses which are not normally expressed in writing” (Jeff Bezemer & Carry Jewitt, 2010, p.186, as cited in Litosselitti, 2010). It is the act of representing the phenomenon under study as they naturally happen with emphasis on the details of the participants’ thinking and perceptions of a phenomenon through language. Despite being a central step in qualitative research, transcription of interviews contains many complexities; it is a hard task for researchers. Notice that transcription of interviews is a pivotal methodological tool to uncover the “ideological dimensions” of the discourses of participants about their lived experiences and world (Cameron, 2001, p. 123).

Fairclough (1993) notes that when analysing discourse, the researcher had better analyses “real texts” that are transformed into transcripts as they are spoken by the participants to uncover power in society. In this sense, Schegloff (1997) invites researchers to keep transcripts (e.g., interviews...) as they naturally occur as a way to privilege how the participants speak, interpret and give meaning to their own world. Bucholtz (2000) states that transcription is a representative aspect of thoughts, addressing “*transcription of a text always involves the transcription of a context*” (p. 1463). Bucholtz (2000) divides the transcription process into “interpretative decisions” (what is transcribed?) and “representative decisions” (how is it transcribed?). This process also involves the interpretation task that brings to light how the speaker is understood by the transcriber (the researcher) that would necessitate the visibility of certain conditions. She (2000) claims that “*the transcriber’s goals, her or his theories and beliefs about the speakers; her or his level of attention to the task and familiarity with the language or register of the discourse*” (p. 1463).

For the present research, the participants are Algerian female engineers who are native speakers of Arabic; the researcher conducted the research questions in Arabic and translated them to English. Despite the difficulty of the task of translation, the researcher remained faithful and translated every feature from the original transcripts such as pauses, laughter, body language, to provide clear insights into the different meanings the speakers give to their experiences and their world.

3.3.4. Pilot study

The pilot study is an essential phase in conducting a research project. This section aims at giving the details of the steps taken to conduct the pilot study. It is crucial in providing feedback and grounding to the research work.

Pilot study refers to “*a small study to test research protocols, data collection instruments, sample recruitment strategies, and other research techniques in preparation for a larger study*” (Zailinawati, 2006, p. 70)⁹. Conducting a pilot study is a difficult decision for researchers; it is the initial stage prior to the implementation of the main study. It is meant to avoid any problem or shortcoming related to the research questions and instruments that might appear in doing the research project.

To assure the feasibility and the efficiency of the research, a pilot study was our initial step of the practical application of the hypotheses stated for the present study related to interviews and questionnaires for the purpose of avoiding any misleading and misunderstanding of the research design, concerning questions. We initially questioned the efficiency of the research questions of both the semi-structured interview and the questionnaire on few participants to test the clarity and the relevance of the formulated questions to the study. To reach the aforementioned aims, we have made various and initial changes before the final questions to the selected sample of the main study. As for the current research, the pilot study was conducted in February 2020, primary data provided valuable changes by selecting 10 female and 10 male participants, we did not focus on generating conclusions, we rather tested the easy flow and the clarity of the questions, consideration was given to the following practical aspects:

- The design of the questions.
- Reconsidering and recording the time devoted to the answers of the participants.

⁹Stewart PW. Small or pilot study, GCRC protocols which propose "pilot studies". Cincinnati Children's Hospital Medical Center.

- Identifying potential problems that may occur in answering the questions of the questionnaire in the researcher's absence.
- Selecting the participants since we attempted to test the questions of the interviews on female engineers only.
- Testing the clarity of the questions and check the relevance of the answers to the main study.

Worthy to mention, after formulating the questionnaire, we piloted them to avoid any ambiguity of the questions. The questionnaires were sent via the internet to the participants. After, they have answered and sent their comments online. Therefore, we reconsidered the length, instructions, corrected the wording, and modified some items. We paid attention that some questions were redundant; thus, we have removed them while other questions were altered to ensure receiving the targeted information that could be of important connection with the study. Hence, we insured the clarity of the questions.

All the aforementioned modifications and changes helped to establish clear measures and procedures that help get the adequate data set and obtain the convenience of the research.

3.3.5. Ethical considerations

The overarching objective of the research was to explore the discursive construction of female engineers' identities in the engineering profession; it mainly concentrated attention on the status and the experiences of women at male-dominated engineering in Sonatrach Company.

For the purpose of achieving the transparency and the validity of this PhD project, we considered basic ethical issues throughout all the research procedures. We ensured confidentiality and anonymity of participants. We confirmed that their contribution to the research project was of great value in the consent form. Also, we explained broadly the research outlines and what we wanted to do. For the interview process, our duty was to create a comfortable context and a friendly atmosphere with the participants to freely answer the questions and to allow flexibility of the answers. So, we have asked their consent about the time allocated to the interview. For the questionnaires, the debriefing letter fully explains the research project.

3.4. Conclusion

The present chapter entails research methodology of the present study. It is divided into two main sections. The first section describes Algerian women's economic participation. The second section presents the research design that is divided into three main parts. The first part includes the details about the research setting, population, sampling and research participants. The second part entails the approaches adopted in the present research work, including qualitative, quantitative, and Fairclough's Critical Discourse Analysis approach. The third part addresses the data collection instruments that were adopted in the present research project. In the next chapter, data analysis and interpretation were analyzed both qualitatively and quantitatively. The data will be reported, analyzed and lengthily discussed.

Chapter Four

Data Analysis and Interpretation of the Findings

4.1. Introduction

The current chapter reports the global findings of the present research project. It includes three main parts. The first part provides the presentation and analysis of the findings from the questionnaire and the interview which are analyzed quantitatively and qualitatively. It is distributed into five sections; participants profiles, participants' perceptions of engineering workplace, attitudes towards women's participation at engineering workplace, and participants' challenges at engineering workplace. The second part covers the interpretation of the findings. The third part is devoted to the participants' suggestions that participants propose concerning the status quo of female engineers at workplace. To this end, the results are discussed in light of the addressed research questions.

4.2. The Findings

The aim of the present research is about exploring the discursive construction of Algerian female engineers' identities. It identifies the participants' perceptions, attitudes, and experiences at Sonatrach Company as a male-dominated domain. The analysis of data relied on two main data collection instruments; questionnaire and interview. The responses of the participants play a crucial role in the identification of the reality, the complexities, and the masculinities of engineering workplace. The data gathered throughout this section addressed the research questions of the current investigation. Females' interviews findings were analysed and also linked to the previously obtained findings in order to cross-check the results of the questionnaire employed in this research study.

Data gathered from the questionnaire and the interview are analysed qualitatively and quantitatively to gain reliable findings and to increase the credibility of the findings of the research project. First, quantitative data analysis focuses on the findings about participants' perceptions, attitudes, and experiences at engineering workplace. It covers data from the questionnaire with male and female engineers working at Sonatrach Company. Second, qualitative data analysis covers the findings about the participants' experiences concerned with the discursive construction of their professional identities with regard to engineering complexities. The qualitative data are mostly obtained from the semi-structured interviews with female engineers working at Sonatrach Company. Data analysis also presents the findings along certain graphs and tables that systematically structure and give meaning to data collection.

■ Questionnaire's aim

The analysis of the questionnaire relied on female and male engineers' depiction of their perceptions, experiences, the strategies female engineers use to cope with the workplace culture, and the identification of workplace challenges. The questionnaire results are intended to fully capture the experience of engineers and the representation of women engineers in male-dominated engineering workplace. Further, the questionnaire was administered to 50 female and 50 male engineers. The participants of this study were allowed to skip questions that they don't please in order to answer the questionnaire. Besides, the questionnaire was designed in Arabic and translated to English. It takes approximately 10 to 15 minutes to be answered.

■ Interview's aim

The analysis of the data gathered from the interview relied on 15 female engineers, portraying their lived experiences at engineering workplace in Sonatrach Company, since they are loaded with full indications about the professional settings, and about their experiences in light of prevailing power dynamics in their work setting. It summarizes main issues connected with analysing the qualitative data set. One central issue is the role played by the researcher to reduce and filter the large volume of data collected and the new emerging themes in the analysis process. The analysis of the data resulted in the identification of central themes that were of particular importance. The findings offer a significant explanation to the existing body of knowledge about women working at engineering. Every individual experience deserves to be representative of the daily lived experiences of women engineers. Although their experiences varied, they revealed aspects of collective identities because of their common types of experiences and the themes that remain significant to fully understand the nature of their workplace.

The findings summarize and give detailed results of the participants' answers, including perceptions about themselves in their domain through their experience that effects their professional identity negotiation. It is noteworthy to mention that the data analysis is reported into five sections which are presented as follows:

4.2.1. Section One: Participants' Profiles

This section includes the characteristics of the participants, covering their gender, current professional position, professional experience and social status at Sonatrach company.

Detailed information is provided to provide an understanding about participants' questionnaire (50 female and 50 male engineers) and interview (15 female engineers). Moreover, the results indicate that all the participants are Algerians.

Q1. Participants' Gender

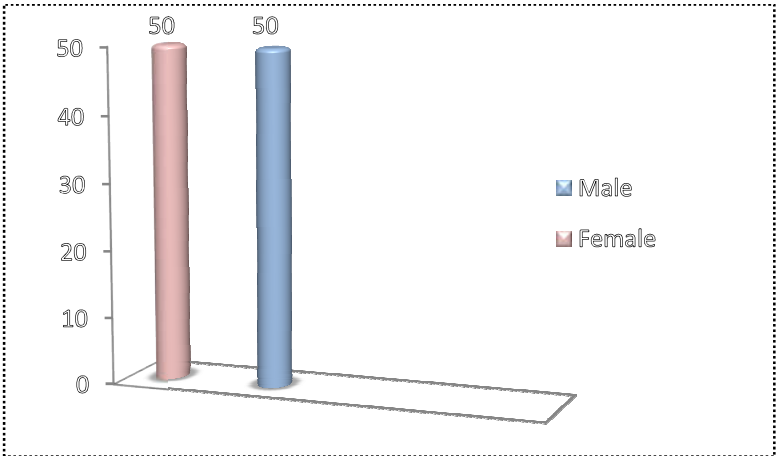
This question seeks to cover the gender of the participants working in male-dominated engineering in Sonatrach Company from both the questionnaire and the interview.

Table (4.1a). *The Gender Distribution of the Questionnaire Participants*

(N= Number / Percentage = %)

Gender	N (Table)	% (Diagram)
Female	50	50
Male	50	50
Total	100	100

Figure (4.1a). *The Gender Distribution of the Participants' Questionnaire*

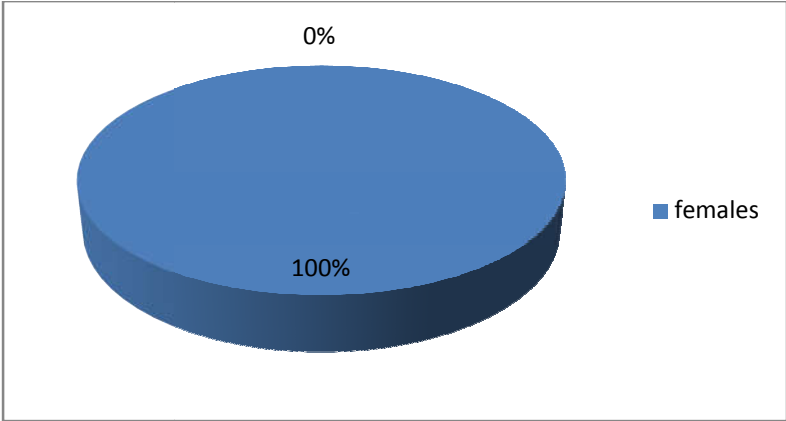


As indicated in table (4.1), the sample of the research is equally distributed between female and male engineers. The data presented in table (4.1a) and figure (4.1a) show that male and

female participants are equal in number. Significantly, male engineers outnumber female engineers. On this basis, the choice of the sample of male engineers was mainly to indicate their perceptions of engineering, attitudes about female’s presence at engineering, strategies and experiences to target the objective of the research. In addition, male participants showed less interest than female when giving them the questionnaire.

The interview entails 15 female engineers, discussing their status at engineering from the female perspective in order to shed light on their experiences, the discursive construction of professional identities, strategies and difficulties at engineering workplace.

Figure (4.1b). *The Gender of the Participants’ Interview*



The questionnaire and the interview results indicate that male engineers outnumber female engineers. The results indicate that engineering is a male-dominated workplace where females represent minority group. On this basis, the number of male participants was chosen according to the number of female participants who accepted to answer the questionnaire. Only 15 female participants accepted to discuss the questions of the interview.

Q2. Participants’ Professional Status

This question seeks to state the positions that participants occupy. It also aims to explore the common professional position shared between male and female engineers. Moreover, this question explores participants’ perceptions of their job as well as to find whether males and females hold higher or managerial positions.

Table (04.2a). *Male and Female Engineers' Professional Status at Engineering*

Response	Number of the respondents		Percentage of the respondents	
	Male	Female	Male	Female
Engineer	18	32	36%	64%
Chief	22	10	44%	20%
Manager	10	8	20%	16%
Total	50	50	100%	100%

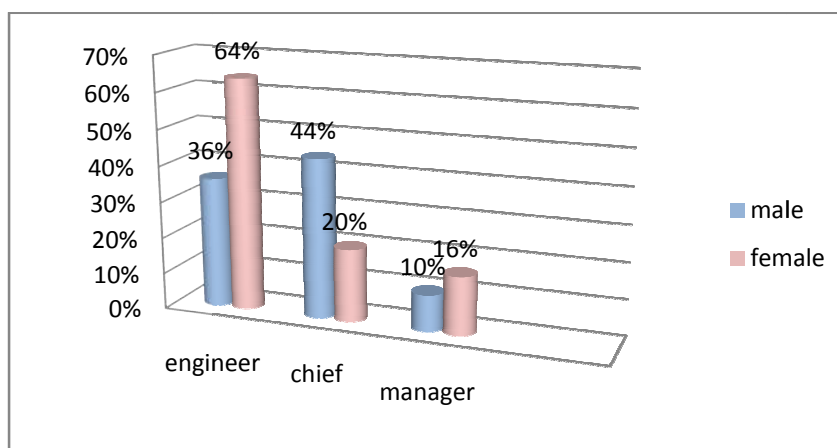
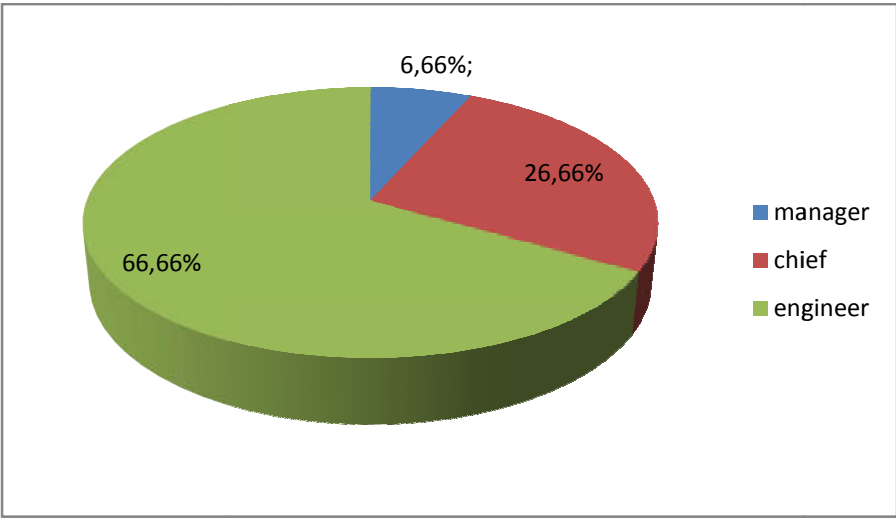
Figure (4.2a). *Male and Female Engineers' Professional Status at Engineering*

Figure (4.2a) represents the data gathered from the questionnaire. The data indicate that the majority of males occupy high positions in engineering that is distributed between chief positions by 44% and managerial positions by 20%. However, we find only 20% of the total number of females holding chief positions, and 16% in managerial positions at engineering.

Table (4.2 b). *Female Engineers' Professional Status at Engineering*

Response	Manager	Chief	engineer	Total
Number	01	04	10	15
Percentage	6.66%	26.66%	66.66%	100%

Figure (4.2 b). Female Engineers' Professional Status



The results of the interview show that the data presented in the figure (4.2b) demonstrate that 66.66% of female engineers are in engineering positions. Other 26.66% of female engineers occupy chief professional roles, and only 06.66% of females hold high position including managerial roles. The data indicate that low percentage of females occupy high positions.

The findings of the questionnaire and interview demonstrate the majority of male and female engineers occupy ordinary profession. However, differences are clearly represented between male and female engineers in holding chief and managerial positions, since males occupy high rank at engineering workplace. The data indicate that engineering is still a male-dominated occupation that favours male's presence and discourage females' contributions. Females need to supply working more than enough to establish recognition.

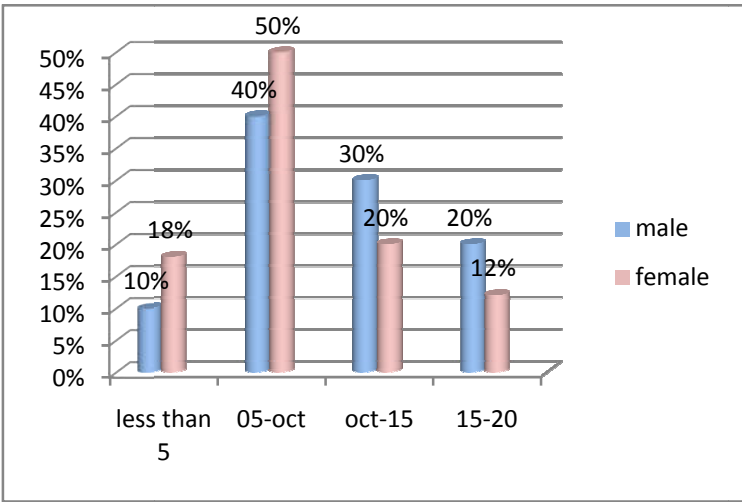
Q3. Participants' Professional Experiences

This question seeks to state the kind of position participants occupy. It also aims to find whether males and females hold higher or managerial positions.

Table (4. 3a). Male and Female Engineers' Professional Experiences

Response	Numbers		Percentages	
	Male	Female	Male	Female
Less than 5 years	5	9	10%	18%
5-10	20	25	40%	50%
10-15	15	10	30%	20%
15-20	10	6	20%	12%
Total	50	50	100%	100%

Figure (4.3a). Male and Female Engineers' Professional Experiences

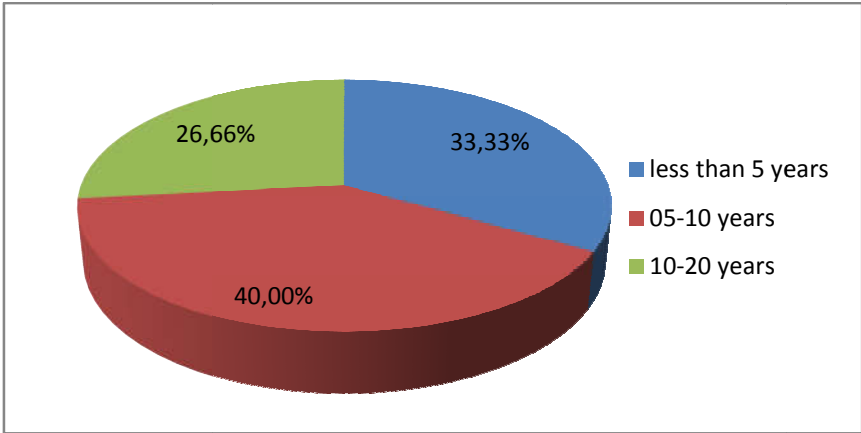


The data in figure (4.3a) portray that 40% of males and 50% of females, participating in the questionnaire are working from 5years to 10 years. The results revealed in the figure (4.3a) also show that 30% of males and 20% of females are working from 10 to 15 years. Moreover, 20% of male as opposed to 12% of female participants mention that they have been working from 15 to 20 years. Only 10% of males as compared to 18% of females worked less than 5 years. The results indicate that most of participants confirmed their stability at engineering.

Table (4.3b). Female Engineers' Professional Experiences

Response	Less than 05 years	5-10 years	10-20 years	Total
Number	05	06	04	15
Percentage	33.33%	40%	26.66%	100%

Figure (4.3b). Female Engineers' Professional Experiences



Data in the figure (4.3b) above indicate that most of the female engineers' work experiences ranges from 5 to 10 years, participating in the interview. 40% of them are working for more than 5 years (5 years to 10 years). The results prove that females have considerable experiences at working as engineers. 33.33% of the total number of participants answer that they work for less than 5 years. Only 26.66% are working for more than 10 years (10 years to 20 years). The results from the questionnaire and the interview indicate that all the participating engineers have professional experiences in working and dealing with engineering workplace. The results indicate that the participants ensure their stable professional status at engineering workplace.

Q4. Participants' Social Status

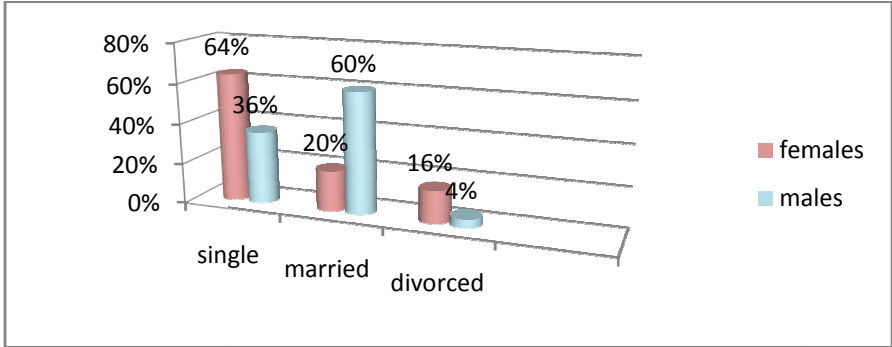
This question is set in order to have a clear understanding about participants' marital status in order to explain the relationship their work and family responsibilities. It explores the

influence of the participants’ social lives on their achievements at work in light of the role given to women in carrying family responsibilities whatever their social status is.

Table (4.4a). Male and Female Engineers’ Social Status

Response	Number of the respondents		Percentage of the respondents	
	Male	Female	Male	Female
Single	18	32	36%	64%
Married	30	10	60%	20%
Divorced	2	8	4%	16%
Total	50	50	100%	100%

Figure (4.4a). Male and Female Engineers’ Social Status

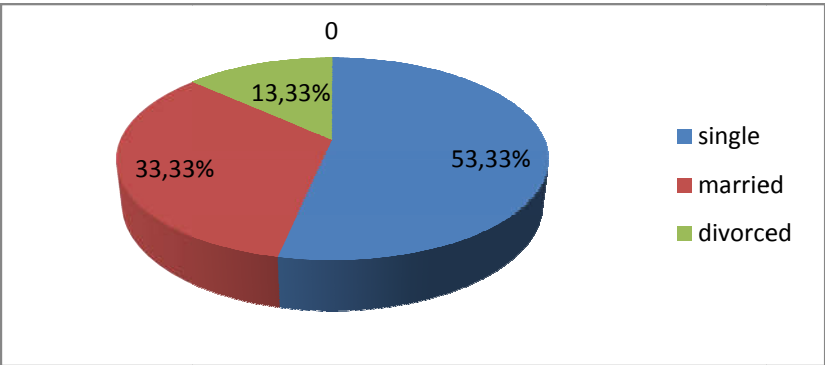


Evidently the data of the questionnaire presented in figure (4.4a) show that the majority of female participants by 64% are single and only 20% are married while 16% of females are divorced. Hence, the number of single females and the number of divorced females indicate the difficulty to balance between work and family life. On the other hand, we find that the majority of males are married (60%) and 36% of them are single while only 4% are divorced. This question needs further exploration about participant’s choice of their marital status and the reasons behind divorce status.

Table (4.4b). Female Engineers' Social Status

Response	Single	Married	Divorce	Total
Number	8	5	2	15
Percentage	53.33%	33.33%	13.33%	100%

Figure (4.4b). Female Engineers' Social Status



The results of the interview displayed in figure (4.4b) show that 53.33% of female engineers are single. Whereas 33.33% are married and only 13.33% are divorced. The data indicate that the majority of female engineers working in Sonatrach are single.

As indicated in figure (4.4b) and figure (4.4b), the results of the interview cross-check the results of the questionnaire. The great majority of male engineers are married as opposed to the majority of female engineers who are single. The results indicate that female engineers hardly balance between work and family, since they perceive engineering as a hard job that requires great effort and work.

The first section, entitled "Participants' Profile", includes Q1, Q2, Q3, and Q4. It was designed to determine the participants' personal information, including gender, professional status, professional experience, and social status. Hence, the findings may demonstrate the reliability of the data set that may contribute to offer an understanding of working in engineering. The results indicate that the participants have professional experiences at engineering workplace in the Algerian Sonatrach Company. The data also indicate that engineering is male-dominated workplace; males represent the majority and the dominant group, while females stand for minority group, influencing their professional

experience and the balance between work and family life. The next section is devoted to reveal workers’ perceptions, choice and opinions about engineering workplace.

4.2.2. Section Two: Algerian Female Engineers’ Perceptions of Engineering Workplace

The present section is entitled “Algerian female engineers’ perceptions about engineering workplace”. This section is administered to have a clear vision about participants’ motives, perceptions, and descriptions of engineering setting at Sonatrach Company. It also tends to shed light on participants’ sense of belonging as members of the community of engineering i.e. establishing membership.

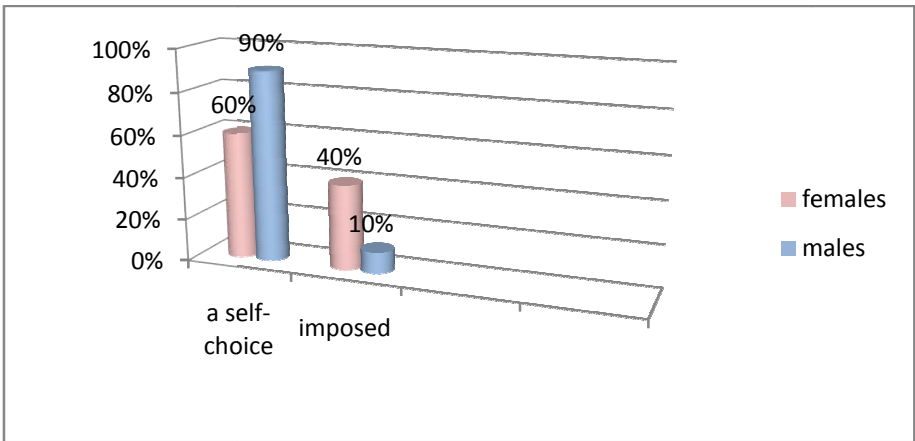
Q5: Is engineering your choice?

This question aims to explore participants’ choice of engineering i.e. whether engineering is a self-choice or imposed.

Table (4.5a). Male and Female Engineers’ Choice of Engineering

Response	Number of the respondents		Percentage of the respondents	
	Male	Female	Male	Female
chosen	45	30	90%	60%
Imposed	05	20	10%	40%
Total	50	50	100%	100%

Figure (4.5a). Male and Female Engineers’ Choice of Engineering

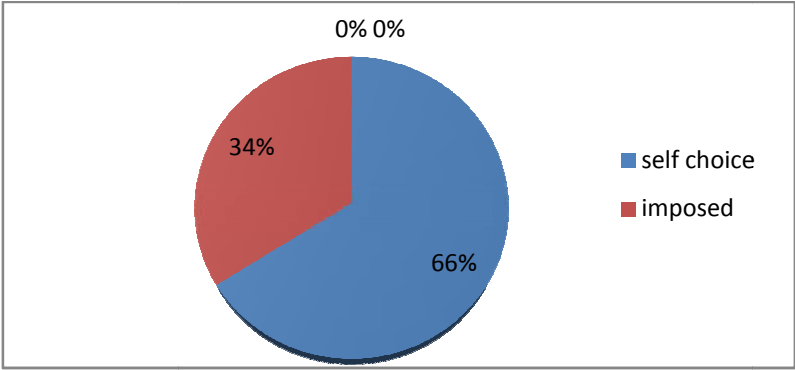


The questionnaire results presented in table (4.5a) and the percentages in figure (4.5a) indicate that 60% of female participants declare that engineering is a self choice, as opposed to 40% of females who claim that it is imposed. The results also show that the majority of male participants by 90% state that engineering is their self choice as compared to only 10% of males who claim engineering to as a chosen profession for them. The results demonstrate that female engineers depict their professional occupation in light of social stereotypes mainly stereotypical labour segregation. The results remind us of the social and professional constraints imposed on females. In addition, they are constrained to choose their profession. However, the results may express that females are encouraged to choose male-dominated engineering. It also indicates females’ opportunity to reach equality in a patriarchal society that encourages women’s presence at male-dominated engineering.

Table (4.5b). Female Engineers’ Choice of Engineering

Response	Self choice	Imposed	Total
number	10	05	15
percentage	66%	34%	100%

Figure (4.5b). Female Engineers’ Choice of Engineering



The interview results in figure (4.5b) show that the majority of female participants by 66% consider engineering to be a self choice. Only 34 %of them agree that engineering is imposed. The available data show that female engineers are encouraged and empowered to enter male-dominated domain. The data obtained indicate that the females still experience social and professional limitations. The data also demonstrate females’ awareness about the stereotypical assumptions about the distribution of labour.

Throughout the questionnaire and the interview results, similarities are demonstrated. The results demonstrate that women’s empowerment influence their presence at workplace setting. Algerian females are encouraged to enter male-dominated engineering. However, the data prove that stereotypical gender differences and gender segregation of labour historically constrain Algerian females to do their career job.

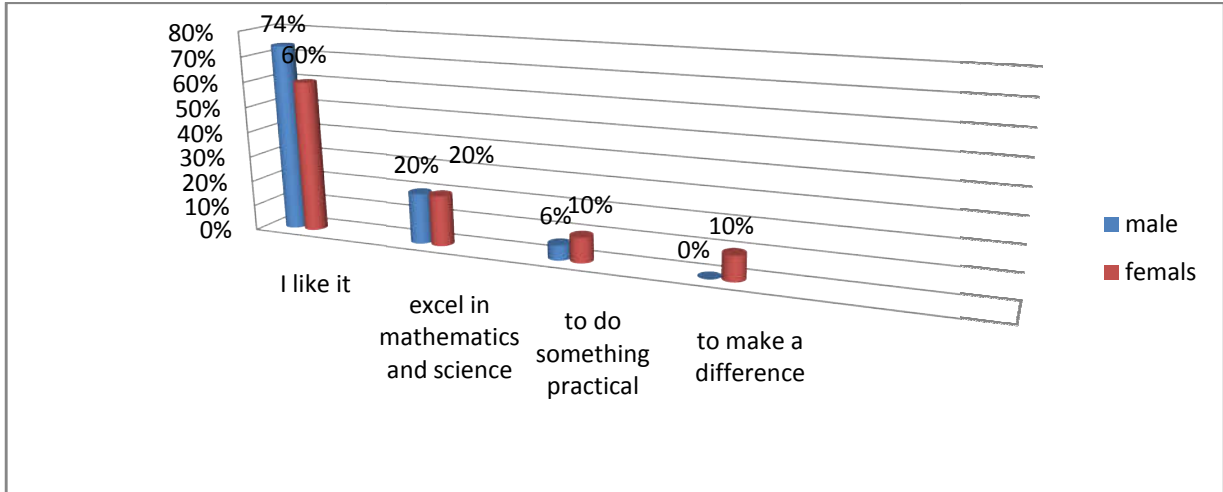
Q6: Why Did You Choose Engineering?

This question structures the core interest of the research which marks the departure point for evident results about the motives behind choosing engineering job. This question would enable to explore the issue from female participants themselves.

Table (4.6a). Male and Female engineers’ Motives behind Choosing Engineering

Response	Number of the respondents		Percentage of the respondents	
	Male	Female	Male	Female
I like it	37	30	74%	60%
Excel in mathematics and science	10	10	20%	20%
To do something practical	3	5	6%	10%
To make a difference	/	5	/	10%
Total	50	50	100%	100%

Figure (4.6a). Male and Female Engineers’ Motives behind Choosing Engineering

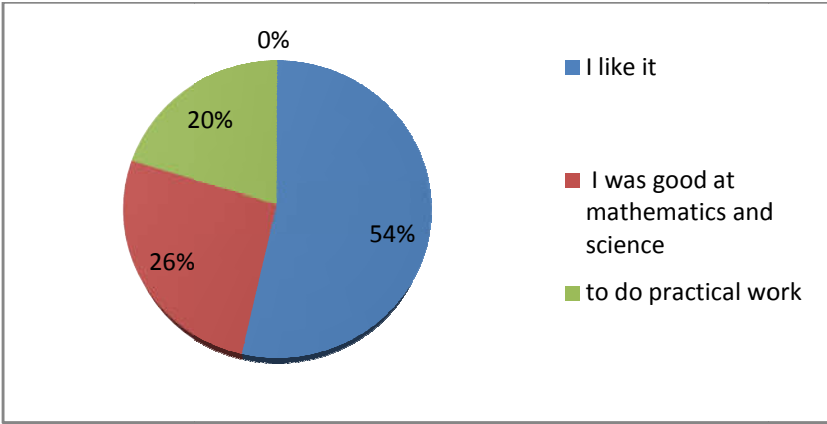


Correspondingly, with the previous results to the question about the choice of engineering; the present questionnaire results show that the majority of male participants by 74% and 60% of the total number of females strongly agree that they like engineering profession which means that their ability to do the career job may be a reason behind their choice of engineering profession. Correspondingly, the same percentage is shared by female and male participants (20%) in excelling at mathematics and science. Whereas only 6% of males and only 10% of females indicate that they have chosen engineering to do something practical. Only 10% of female participants as opposed to none of the males believe that they want to make a difference. These results have a direct link with the fact that males believe engineering as their natural space i.e. something they belong to as the norm. By contrast, the results remind that females want to prove themselves and their full potential in doing engineering to challenge the stereotypical notions, to make a difference, challenging the notion that they do not belong to so as to establish a sense of belonging.

Table (4.6b). *Female Engineers’ Motives behind Choosing Engineering*

Response	I like it	I was good at mathematics and science	to do practical work	Total
Number	8	4	3	15
Percentage	53%	26%	20%	100%

Figure (4.6b). *Female Engineers’ Motives behind Choosing Engineering*



As indicated in figure (4.6b), most of the participants' interview by 54% state that they choose engineering because they like it, and 26% of them claim that they choose engineering because they excel in subjects as mathematics and science that are adequate to engineering work. Only 20% of them argue that they want to do something practical. Female Participants provide different motives to be involved in engineering. Women's abilities as professional engineers is clearly valued and articulated by female participants. Some answers are as follows:

▮ *RP 01: "because engineering is something I like too much. I cannot see myself in other domain..."*

Inter: sorry, maybe because you excelled in specific subjects!

RP 01: that's one part of choosing engineering (mmm) I was very good at mathematics and science and also because I enjoy it.

Inter: if we speak about women's minority status or presence at engineering is it due to those skills that you have already mentioned, I mean mathematics and science?

PP1: do you want to hear truth?

Inter: of course.

PP1: engineering is about practice, you need to spend more time (laugh). The interest and good performance in mathematics is taken to be normal in engineering. So, this is why you

may (think) find more men than women because it is based on subjects I can say that attract

more men than women.

▮ *Inter: what is exceptional in engineering? Why have you chosen engineering?*

RP 03: I like it too much, if you want to be among the best, to do different thing I advise you to do engineering because it is something of a big value and a meaningful work...

▮ *Inter: why did you get involved in engineering?*

RP5: because engineering is something I like too much cannot see myself in other domain...

Inter: sorry, maybe because you excelled in specific subjects!

RP5: that's one part of choosing engineering (mmm) I was very good at mathematics and

science and also because I enjoy it.

As indicated in figure (4.6a) and figure (4.6b), the data analyzed from the questionnaire and the interview suggest that the participants’ motives behind choosing engineering refer to their self ability and self competence to do engineering job. Female’s self-reliance and competence to do the career job encourages them to choose male-dominated engineering. So, female participants challenge the precept that their activities in engineering are inadequate due to their physical abilities and their feminine bodies. The data demonstrate that female engineers voice that their differences are reinforced through gender stereotypes do not obstruct them to fulfil their full potential at engineering workplace.

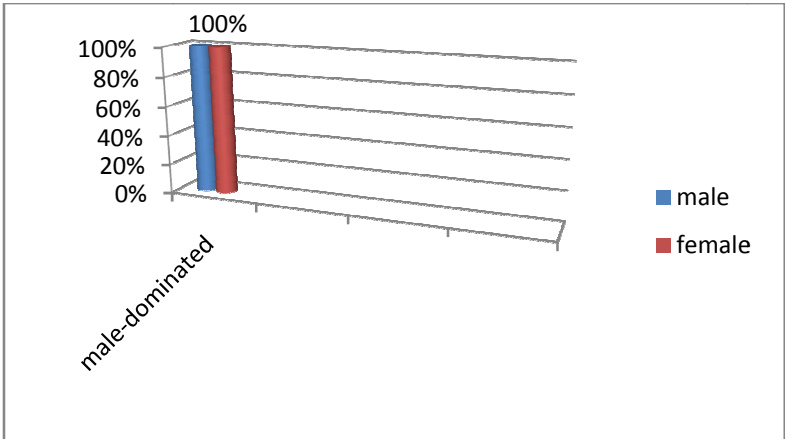
Q7: How do you perceive the domain of engineering?

This question aims at identifying the nature of workplace setting and culture. Particularly, it tends to conceptualize female’s representation of engineering workplace at Sonatrach Company.

Table (4.7a). Male and Female Engineers’ Perceptions of Engineering

Response	Number of the respondents		Percentage of the respondents	
	Male	Female	Male	Female
Male-dominated	50	50	100%	100%
Total	50	50	100%	100%

Figure (4.7a). Male and Female Engineers’ Perceptions of Engineering

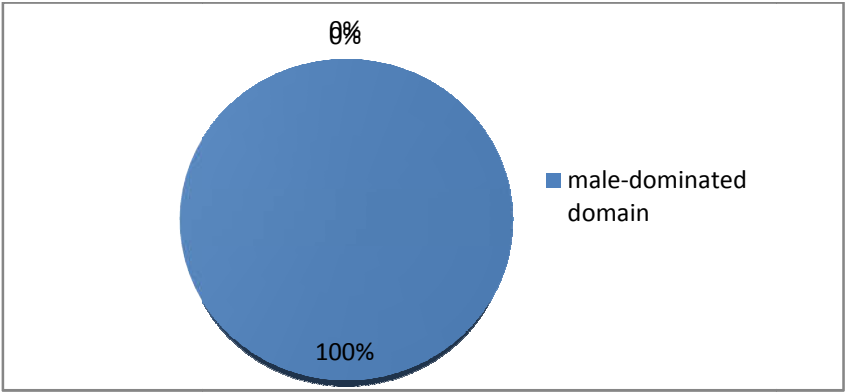


The questionnaire results in diagram (4.7a) indicate that all the male participants demonstrate that engineering is a male-dominated domain. On the other hand, all the female participants perceive engineering as a purely male-dominated domain. Here again, the results demonstrate female’s awareness about the nature and the practices of engineering that is a male- dominated.

Table (4.7b). Female Engineers’ Perceptions of Engineering

Response	Male-dominated domain	Total
Number	15	15
Percentage	100 %	100%

Figure (4.7b). Female Engineers’ Perceptions of Engineering



As indicated in figure (4.7b), all the female engineers participating in the interview determine the masculine nature of engineering. 100% of the participants share a common response and make it clear that engineering is male-dominated domain. The results show that women are highly aware of engineering nature and practices. The following excerpts from the participants’ interview address the above-mentioned view:

- Inter: how do you perceive the domain of engineering?
 RP2: Well, we do all know that engineering is dominated by men (hhmmm), their big number serves their dominance and they feel that they are naturally found in it...always men say that “we” can do the work while women or any female is incapable of doing the job

Inter: when they say “we” do they refer to men and women I mean all the workers or only to male colleagues?

RP2: No, generally when they articulate “we” they refer to the category of men of course. Let us make it clear; they always speak about themselves as WE and address the women as “you” or as “women”

▀ *Inter: how do you describe engineering setting*

PP5: the masculine culture of engineering doesn't need to be questioned because it is a male signed profession

▀ *RP7 : “ Engineering is historically over-numbered by men*

As shown in the above excerpts, gender differences between men and women prevail in engineering discursive practices. Female engineers shed light on the masculinity of engineering where men dominate the setting. They articulate that that the workplace is loaded with the masculine culture, and discourses of gender differences and power relations that correspond to the notion of belonging to the workplace.

The questionnaire and interview cross-check the findings about participants' perceptions of engineering. The data confirm that engineering workplace is a male-dominated workplace that is historically reinforced by the masculine culture and the cultural assumptions about the normative position of workers. It is extremely important to articulate vivid assumptions that define engineering setting as a culture that resists change.

The second section is devoted to reveal male and female engineers' choices, perceptions, and opinions about engineering workplace at Sonatrach Company. It tends to answer the first research question: “what might be the motives that lead Algerian women working in Sonatrach Company to choose a male-dominated job like engineering?” which hypothesizes that. Moreover, the findings revealed that all the participants confirm that engineering is purely a masculine domain that is governed by a masculine tendency of work. More important, participants denote particular perceptions that define engineering workplace. The results demonstrate female's awareness about the complexities, the masculinities, and the practices of engineering. The data revealed the gender hierarchy, reinforcing men's dominant status, while females stand for minority group. The participants articulate that the workplace is loaded by the masculine culture, discourses of gender differences, and power relations that correspond to the notion of belonging to the workplace. The next section analyzes the attitudes towards women's participation at engineering workplace.

4.2.3. Section Three: Participants' Attitudes towards Women's participation at Engineering Workplace

This section is devoted to identify participants' attitudes towards women's participation at engineering workplace. It aims at providing insights about women's presence and status in Sonatrach Company as a centre of analysis is the research study.

Q8: Do you think that women fit in engineering work? If no say why?

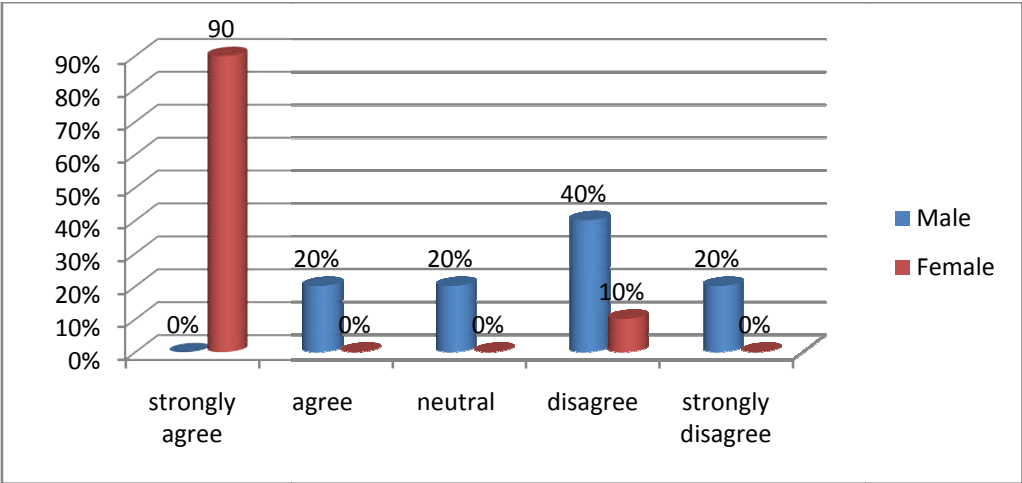
The objective of this question is to identify participants' opinions and perceptions about the participation of females at engineering workplace. Here again, participants working at Sonatrach Company are free to answer this question according to what they think about female's current situation at engineering with a particular focus on female's understanding of their status at engineering workplace.

Concerning the interview, the aim behind this open-ended question is to shed light on women's contributions in the male-dominated profession. Hence, it offers an understanding about their experience at work as minority group within male-dominated profession. This interview question is concerned with the relation of the participants' perception of engineering i.e. the image of engineering and the gender differences they experience.

Table (4.8a). *Male and Female Engineers' Perception of Women's Participations at Engineering Workplace*

Response	Number of the respondents		Percentage of the respondents	
	Male	Female	Male	Female
Strongly agree	/	45	/	90%
Agree	10	/	20%	/
Neutral	10	/	20%	/
Disagree	20	5	40%	10%
Strongly disagree	10	/	20%	/
Total	50	50	100%	100%

Figure (4.8a). Male and Female Engineers’ Perceptions of Women’s Participations at Engineering Workplace

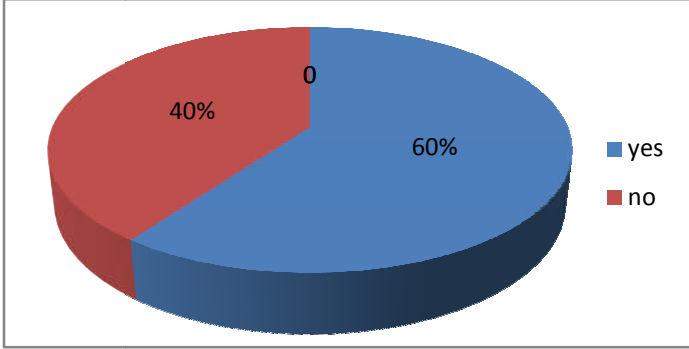


The questionnaire’s data presented in the figure (4.8a) show that the majority of females by 90% claim that women fit in engineering, while only 10% of females disagree with women’s participation at engineering workplace. In contrast, males express different views about women’s presence; the majority of them by 40% disagree with women’s participation at engineering workplace. 20% of males state the choices of agree, neutral, and strongly disagree about women’s presence at engineering. The findings suggest that males confirm engineering to be man’s space. However, women’s refusal at engineering is discouraged through cultural stereotypes.

Table (4.8b). Female Engineers’ Perceptions of Women’s Participation at Engineering Workplace

Response	Yes	No	Total
Number	9	6	15
Percentage	60%	40%	100%

Figure (4.8b). Female Engineers’ Perceptions of Women’s Participation at Engineering Workplace



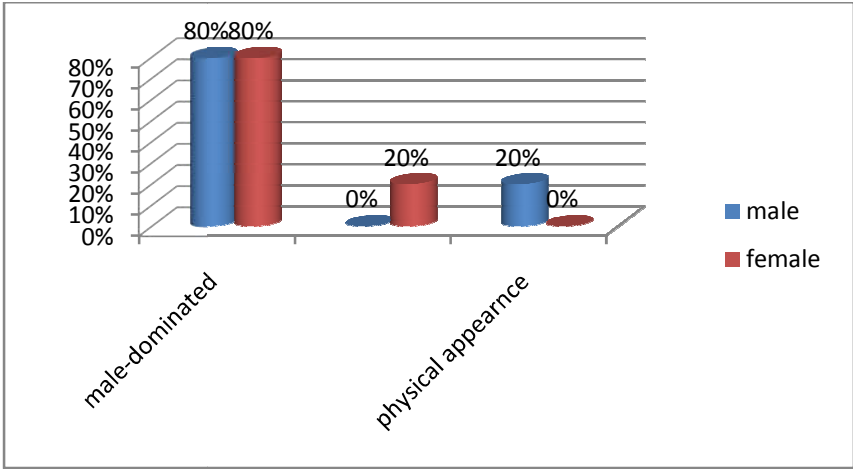
The interview results displayed in figure (4.8b) indicate that the majority of female participants by 60% agree that women fit in engineering workplace and only 40% disagree that females do not fit in engineering workplace. The data obtained reveal that male participants perceive women’s presence as inadequate, whereas female participants agree that women fit in engineering workplace. Females show a positive response about women’s presence at engineering workplace. They challenge the masculine norms to prove their potential in an area where their presence is perceived as unnatural.

The second part of the question requires participants to give their standpoints about female’s presence at engineering through justifying their answers. This open-ended question entails a subtle aim that is to check males’ and females’ responses about female’s presence at engineering.

Table (4.8c). Male and Female Engineers’ Reasons about Women’s Unsuitable Presence at Engineering Workplace

Response	Number of the respondents		Percentage of the respondents	
	Male	Female	Male	Female
Male-dominated	40	40	80%	80%
Women’s minority status	/	10	/	20
Physical appearance	10	/	20%	/
Total	50	50	100%	100%

Figure (4.8c). Male and Female Engineers’ Reasons about Women’s Unsuitable Presence at Engineering Workplace



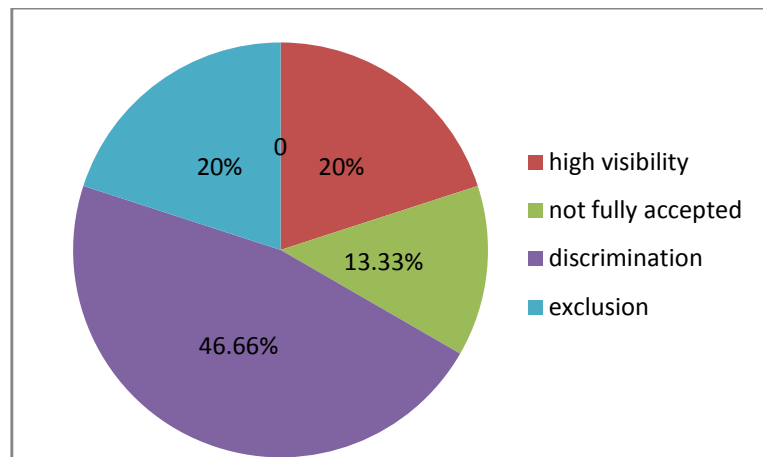
Significantly, the questionnaire results in figure (4.8c) show that the majority of both females and males by 80% state that women do not fit in engineering because engineering is male-dominated domain. Only 20% of male participants claim that women do not fit in engineering because of their physical appearance. Only 20% of females state that women stand as minority group. The findings reflect that the participants consider engineering as exclusively a male-dominated domain, referring to the masculine culture of work.

However, the female participants in the interview state various reasons behind women’s unsuitable contribution at engineering workplace. Female participants portray their experiences from female’s perspective.

Table (4.8d). Female Engineers’ Reasons about Women’s Unsuitable Presence at Engineering Workplace

Response	High visibility	Not fully accepted	Discrimination	Exclusion
Numbers	3	2	7	3
Percentage	20%	13.33%	46.66%	20%

Figure (4.8d). *Female Engineers' Reasons about Women's Unsuitable Presence at Engineering Workplace*



The interview findings demonstrate that the majority of female participants by 46.66% consider that women's unsuitable presence is due to their discrimination at engineering workplace. 20% of them claim the issue of women's high visibility. Also, 20% of them argue exclusion practices against female engineers. Only 13.33% of the female participants confirm that they are not accepted at engineering. The data obtained indicate that female engineers experience practices of discrimination and exclusion at workplace setting. The participants express different views about their presence due to different working experiences. Some answers are presented as the following:

- *Inter: let us speak about your presence at engineering, are you welcomed at your workplace? How do you see your presence?*
- *RP 03: (hmmm) always when you speak to men or some colleagues , you see, you find them underestimating the work of women, you hear them always saying that women cannot do masculine jobs because they are physically weak, in terms of their bodies, that affect her work performance....*

Inter: really,

- *RP3: yes, but if we look at the work done by women at home and you compare it with my work here (at engineering) you find that the housework is harder than this job .Always men state that they are the best ones who fit in engineering and who consider themselves*

as problem solvers while women are thought to be strangers. Sometimes when speaking about our professional competence we are kidded about... ”

Inter: how do you describe engineering setting?

- *RP05: the masculine culture of engineering doesn't need to be questioned because it is a male signed profession*

Inter: so, what about women's presence?

- *RP05: women who come into it have to learn about the masculine culture and adopt masculine characteristics... ”*
- *Inter: What can you say about your presence at engineering?*
- *RP06: I am proud of being a woman in men's space, I feel that I do something different.*
- *RP 02: “To be a woman means to be more delicate, polite, you know how to negotiate, how to communicate and this is better... something that we have to appreciate as far as our work needs... ”*
- *RP 03: “Male engineers expect us to be like them claiming that we wanted equality. For them, by doing a job like them or in their ways means resist us because they may feel that that they are threatened. Regardless of our visibility as feminine bodies we can do well in engineering”*

Inter: what about women's presence in engineering?

- *RP 03: to be a woman is something good but sometimes we face some restrictions as being inadequate for the job. Our vulnerable position limits our capacities. Some colleagues refuse our directives for the simple reason; because we are women I mean different from men (laugh) because there is always a big number of men facing one or two women only.*
- *RP14: I think that men colleagues prefer a woman to display feminine characteristics because they generally see women as more organized at work and more patients. These characteristics allow women to have the capacity to do a work that consume more time. Women are able to spend more time to do a hard work*
- *RP 15: “I think that a woman is as good as a man...”*

The findings suggest that males claim engineering to be man's space and perceive women's current position as unnatural. The data indicate that engineering workplace is loaded by cultural stereotypes about the type of workers needed. It is evident that females show

important responses about their awareness about in/visibility practices. So, female participants seem to challenge the masculine norms to prove their full potential and strive to gain acceptance and recognition.

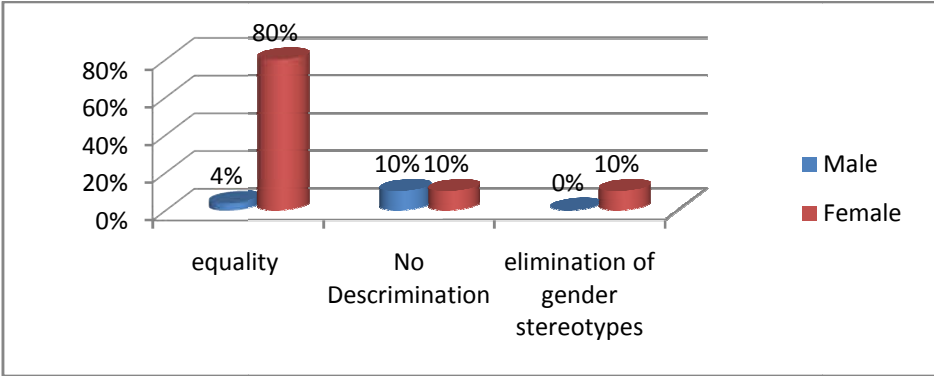
Q9: What will change if there are more females in engineering?

This open-ended question seeks to know about participants’ views about the possibility of increasing the number of female engineers. The respondents appeared to show limited responses. The data are presented as follow:

Table (4.9a). *Male and Female Engineers’ Views about Females’ Participations at Engineering*

Response	Number of the respondents		Percentage of the respondents	
	Male	Female	Male	Female
Equality	2	40	4%	80%
No discrimination	5	5	10%	10%
Elimination of Gender Stereotypes	/	5	/	10%
Total	50	50	100%	100%

Figure (4.9a). *Male and Female Engineers’ Views about Females’ Participations at Engineering Workplace*



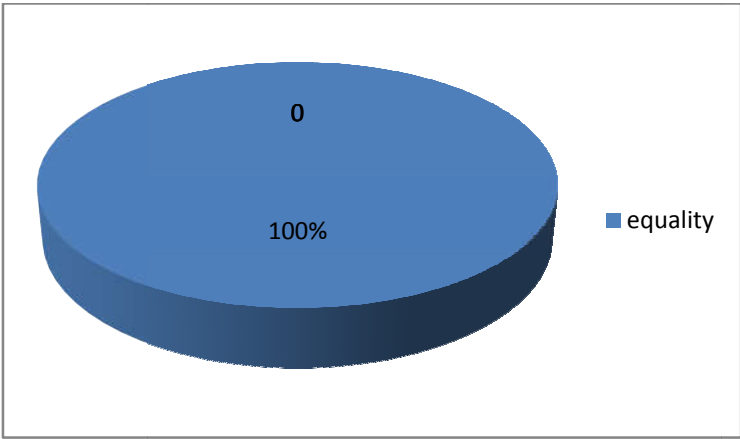
As shown in diagram (4.9a), the questionnaire results indicate that only 7 male participants seem to understand and then answer this question. Male respondents seem to be

more reluctant about their answers. However, the majority of females by 80% as opposed to 4% of males suggest chances of “equality” at engineering workplace. Moreover, the same percentage of male and female participants by 10% declare that engineering will be free of discrimination. In the same line of thought, 10% of females claim that there would be no gender stereotypes. The findings suggest that males consider engineering as a male-dominated. However, the data suggest that females challenge the gendered workplace norms to reach equality, eliminate gender stereotypes and all kinds of discrimination.

Table (4.9b). *Female Engineers’ Views about Increasing Female Participation at Engineering*

Response	Equality	Total
Numbers	15	15
Percentage	100%	100%

Figure (4.9b). *Female Engineers’ Views about Females’ Participations at Engineering Workplace*



The results in figure (4.9b) indicate that all female participants suggest that women’s increasing presence at engineering workplace will result in establishing equality between male and female engineers. The data indicate that female engineers experience exclusion practices that favour men’s presence and discourage female’s presence at engineering work.

The data indicate that there are significant differences in participant’s views about increasing the presence of female at Engineering. Only small minority of men have responded by establishing equality. However, women have shown considerable responses, the majority of them state that engineering would be free from discrimination and gender stereotypes; they would have more chances of equality. It is evident that males demonstrate that they are resistant to change engineering culture, while females denote their endeavour to challenge the workplace culture and eliminate all kinds of discrimination. Female’s responses highlight their dissatisfaction with their current position at workplace and the engineering institutional practices.

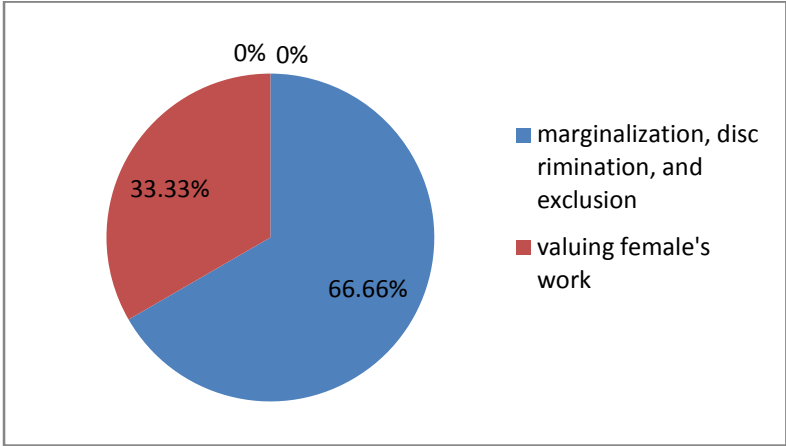
Q9: How are you treated by male colleagues?

This interview question aims at uncovering women’s treatment by female participants. It aims to highlight females’ experiences of practices of discrimination and in/visibility issues facing female engineers at engineering workplace.

Table (4.10). *Female Engineers’ Treatment by Male Colleagues at Engineering Workplace*

Response	Marginalization, discrimination and exclusion	Valuing female’s work
Number	10	05
Percentage	66.66%	33.33%

Figure (4.10). *Female Engineers’ Treatment by Male Colleagues at Engineering Workplace*



As clearly seen in figure (4.10), the majority of female participants by 66.66% claim being objected to marginalization, discrimination, and exclusion by male colleagues as opposed to 33.33% of them who agree with the valorization of female's work by male colleagues. The findings indicate that female engineers experience unequal treatment because of the nature of the job that is dominated by men and due to their minority status. It is evident in the following excerpts:

- *RP 01 : “ Engineering is historically over-numbered by men while women interact seldom because they are minority, and sometimes feel neglected, men find it easier to communicate with their peers because the setting is too dominated by males ”.*
- *Inter: do you think that you are treated equally as male engineers?*

RP 04: According to my experience in engineering females are treated unequally, we are always seen as different from them usually as the only woman or two women in the site, they expect us to be like them.

- *Inter: How are you treated by male-colleagues?*

RP 15: I think they have a lot of respect for women may be because women are more conventional, less adventurous and more organized. I think that female engineers display high and more respect than men.

Inter: what about you?

RP 15: I always control my way of talking. I keep distance with others with the intention of setting limits especially with male-colleagues not to show that I am superior but to avoid any kind of disrespect from others.

Finally, this section aimed to discuss participants' attitudes and perceptions about female's contributions at engineering workplace in Algerian Sonatrach Company. The findings suggest that engineering as a male-dominated workplace is highly gendered and resistant to change. The engineering workplace strongly empowers men's presence and status, while it perceives women's presence as unnatural. The gendered engineering culture legitimizes male's presence and practices that are exclusive for them. The next section is devoted the construction of female engineers' professional identities at engineering workplace in Algerian Sonatrach Company.

4.2.4. Section Four: Algerian Female Engineers’ Construction of Professional Identities at Engineering Workplace

This section is devoted to explore female participants’ construction of their professional identities at engineering workplace in the Algerian Sonatrach Company, giving importance to the effects of the workplace culture and discourses to construct their identities. It also attempts to determine the strategies that Algerian female engineers adopt to cope with the complexities of the engineering workplace.

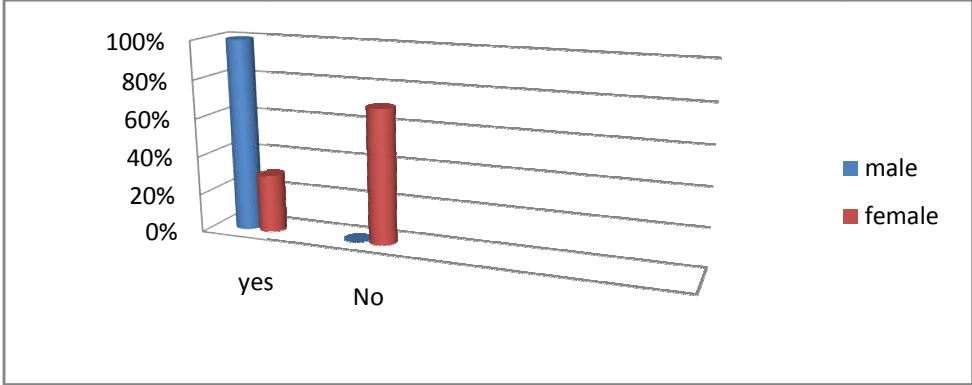
Q 09: Are you welcomed at Engineering Workplace?

This question attempts to give a clear image about engineering settings. Particularly, it aims at exploring participants’ sense of belonging and membership in the community of engineering.

Table (4.11a). *Male and Female Engineers’ Sense of Belonging (Membership) at Engineering Workplace*

Response	Number of the respondents		Percentage of the respondents	
	Male	Female	Male	Female
Yes	50	35	100%	30%
No	/	15	/	70%
Total	50	50	100%	100%

Figure (4.11a). *Male and Female Engineers’ Sense of Belonging (Membership)at Engineering Workplace*

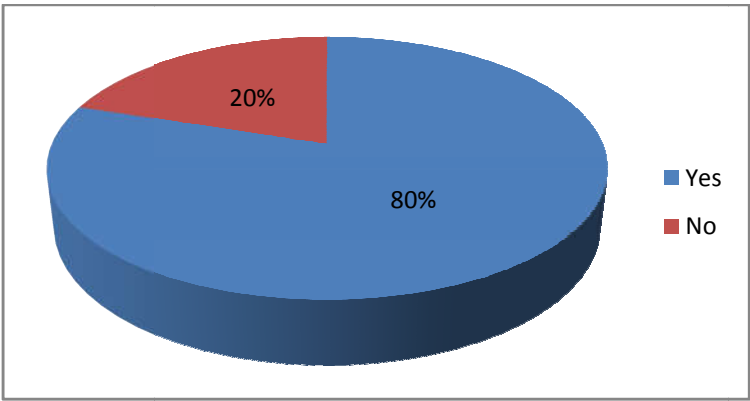


The questionnaire’s data presented in the figure (4.11a) clearly show that all male participants state that they feel welcomed at engineering, reflecting their status of belonging to the workplace. When analyzing the data displayed by female participants, prevalent differences are clearly stated in their responses, the majority of female participants by 70% claim that they are not welcomed at engineering compared to 100% of males who claim the same view. Only 15 of females by 30% claim that females do not belong to engineering. The questionnaire’s data presented in figure (4.11a) indicate that men and women are not equally treated on the basis of their gender categorization.

Table (4.11b). *Female Engineers’ Sense of Belonging (Membership) to Engineering Workplace*

Response	Yes	No	Total
Number	12	3	15
Percentage	80%	20%	100

Figure (4.11b). *Female Engineers’ Sense of Belonging (Membership)at Engineering Workplace*



The interview data displayed in figure (4.11b) show that the majority of female participants by 80% agree that they do have a sense of belonging to engineering workplace setting. By contrast, 20% of the female participants claim that they belong to engineering community. The results demonstrate that engineering in Algerian Sonatrach Company is exclusively masculine domain that tends to exclude females from participation.

The participants’ answers attract much attention; male engineers perceive the engineering workplace as their natural space which reflects their belonging to engineering community. However, female participants argue that they are aware of the exclusion practices, since most of them are not welcomed; they articulate the gender biases and the stereotypical notions about females working at engineering.

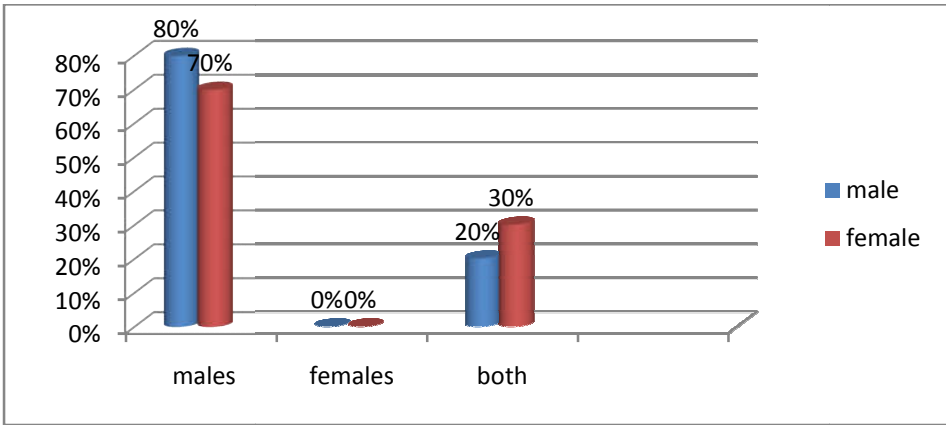
Q10: With whom among your co- workers have you established professional relationships?

This question aims to identify the participants’ professional relationships that are concerned with either same-sex group or mixed-sex group.

Table (4.12a). *Male and Female Engineers’ Professional Relationships at Engineering Workplace*

Response	Number of the respondents		Percentage of the respondents	
	Male	Female	Male	Female
Males	40	35	80%	70%
Females	/	/	/	/
Both	10	15	20%	30%
Total	50	50	100%	100%

Figure (4.12a). *Male and Female Engineers’ Professional Relationships at Engineering Workplace*

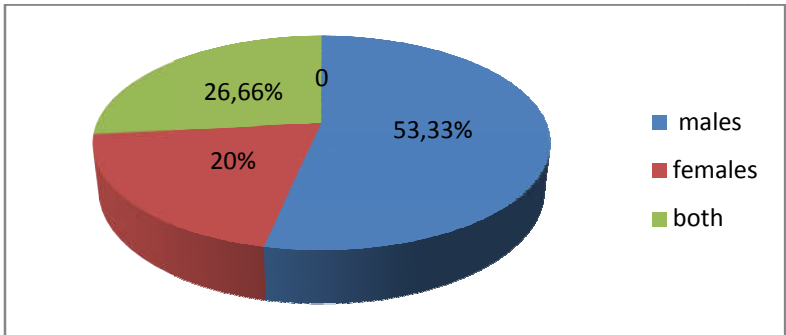


The results of the questionnaire in figure (4.12a) show that most of female (70%) and male participants (80%) prefer to communicate and establish close professional relationships with male co-workers. Only 20% of males and 30% of females prefer communicating with mixed sex-groups, whereas none of the participants like to establish professional relationships with females only.

Table (4.12b). Female Engineers’ Professional Relationships at Engineering Workplace

Response	Males	Females	Both	Total
Number	8	3	4	15
Percentage	53.33%	20%	26.66%	100%

Figure (4.12b). Female Engineers’ Professional Relationships at Engineering Workplace



The results of the interview presented in figure (4.12b) demonstrate that 53.33% of female participants declare that they prefer working with males and 26.66 % prefer working with both males and females, whereas only 20% of them established professional relationships with females only. The data indicate that female engineers established professional relationships with male co-workers due to the masculine nature of engineering.

The results reflect that female and male engineers share more professional relationships with male engineers that may be due to the fact that engineering is male-dominated workplace where women represent minority group. Another point to make clear is that males’ responses indicate females’ exclusion.

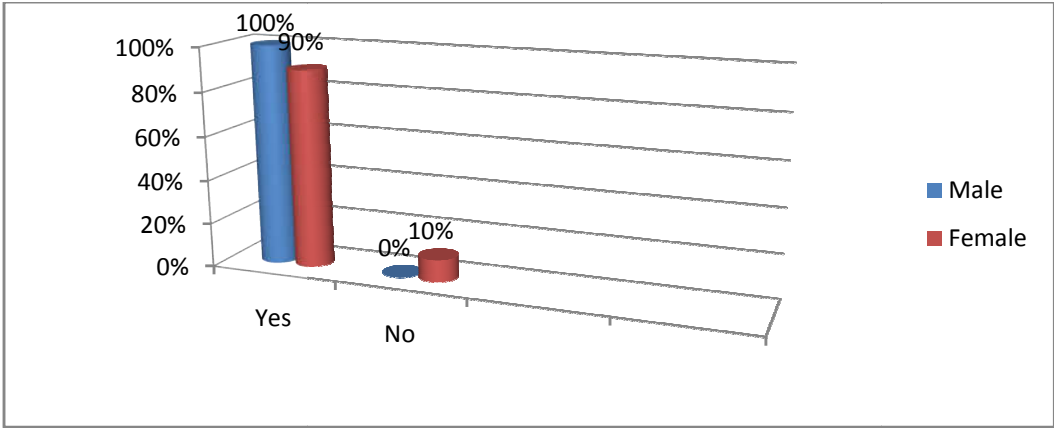
Q11: Do you believe yourself to be professional engineers?

The objective of this question is to identify participants’ perceptions of themselves with respect to their gender and professional occupation.

Table (4.13a). *Male and Female Engineers’ Perceptions of Professional Status at Engineering Workplace.*

Response	Number of the respondents		Percentage of the respondents	
	Male	Female	Male	Female
Males	50	45	100%	90%
Females	/	/	/	/
Both	/	5	/%	10%
Total	50	50	100%	100%

Figure (4.13a). *Male and Female Engineers’ Perceptions of Professional Status at Engineering Workplace.*

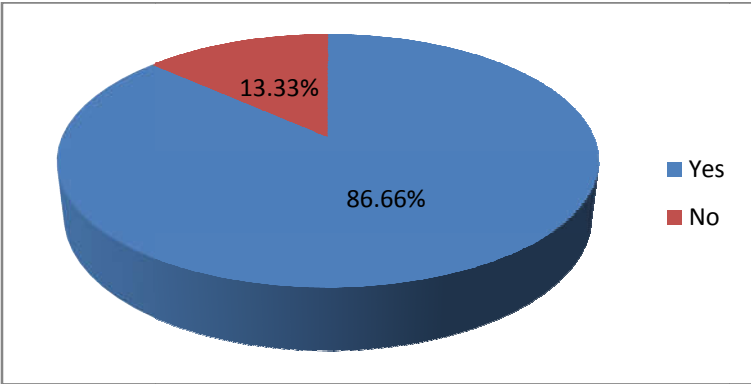


The results in diagram (4.13a) show that all the male participants by 100% position themselves as professional engineers, By contrast,90% of females express the same view, while only 10% of them declare that they are hesitant about the fact of positioning themselves as professional engineers. The data indicate that the majority of the participants claim their professionalism and adequacy in the engineering job.

Table (4.13b). *Female Engineers’ Perceptions of Professional Status at Engineering workplace.*

Response	Yes	No	Total
Number	13	2	15
Percentage	86.66%	13.33%	100%

Figure (4.13b). *Female Engineers’ Perceptions of Professional Status at Engineering Workplace.*



The interview results shown in figure (4.13b) indicate that the majority of female participants by 86.66% declare that they are professionally adept for the engineering job. However, only 13.33% state that they are not professionally adequate for the job of engineering.

The results in figure (4.13a) and figure (4.13b) demonstrate that most of the participants’ responses transmit the message that they are professionally adequate and adept for the job of engineering. Also, the data explain women’s exclusion from the job i.e. they do not feel a sense of belonging and a lack of self-confidence which influence their sense of professionalism. Females’ presence indicates willingness to express their resistance to achieve a sense of belonging as well as to challenge the masculine norm. Here again, males’ responses signal their expression of their sense of adequacy in their natural setting within engineering.

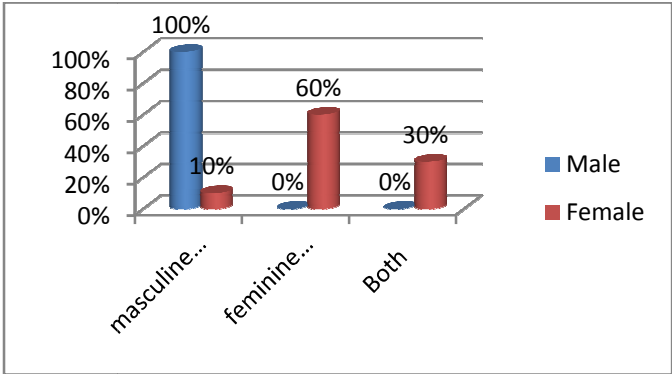
Q12: What are the strategies that you adopt to do your work?

This main question structures the core of this research. It aims at exploring participants’ professional strategies to fit the nature of the work. This worth considering question has three possible answers which are extremely important to present vivid assumptions which define how the participants perceive their workplace nature at the Algerian Sonatrach Company.

Table (4.14a). *Male and Female Engineers’ Professional Strategies at Work*

Response	Number of the respondents		Percentage of the respondents	
	Male	Female	Male	Female
Masculine strategies	50	5	100%	10%
Feminine strategies	/	30	/	60%
both	/	15	/	30%
Total	50	50	100%	100%

Figure (4.14a). *Male and Female Engineers’ Professional Strategies at Engineering Workplace*



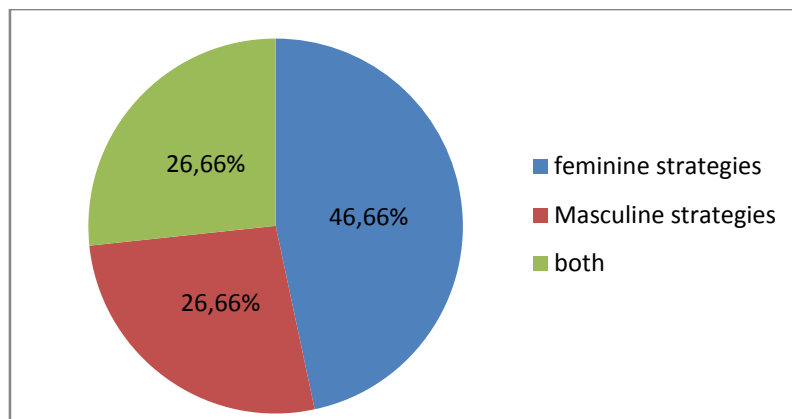
According to figure (4.12a), the total percentage of male participants by 100% state that they use masculine strategies compared to only 10% of females who use the same strategies. Interestingly, 60% from the entire simple of females declare using feminine strategies compared to none of the males. Respectively, 30% of female participants consider using both male and female strategies as adequate in doing engineering work compared to none of the

males. The data indicate that most of the participants prefer using masculine strategies that are professionally adequate at engineering workplace.

Table (4.14b). *Female Engineers' Professional Strategies at Engineering Workplace*

Response	Feminine strategies	Masculine strategies	Both	Total
Number	7	4	4	15
Percentage	46.66%	26.66%	26.66%	100%

Figure (4.14b). *Female Engineers' Professional Strategies at Engineering Workplace*



The data in figure (4.14b) show female engineers' preferred strategies of doing their work. 46.66% of the female being interviewed identify using feminine strategies as their most favourite strategy i.e. they prefer valuing their femininity and assume the fact of being different from the male-dominated culture other. 26.66% of them prefer using masculine strategies i.e. assuming their similarities to the male-culture and disguising their difference to the norm, while the same percentage of female participants (26.66%) assume adopting both feminine and masculine strategies in doing activities that depend on the context of their workplace. The participants state some professional requirements of the job

- *Participant 09: "Engineering is in fact dominated by male engineers but it is not something given by God. It is something that is imposed historically by society if we look at the history of engineering and this doesn't mean that women cannot do well in engineering in light of the constraints and difficulties women face concerning their feminine bodies"*

- *P11: I display high respect to others and I expect so in return. One way to be respected is to wear respectful clothes I mean the manner we dress even without a scarf a woman should wear something that hides her feminine bodies to avoid being subject to sexual harassment because we all know that we work in an area full of men.*
- *Inter: what are the strategies you use to avoid to be subject to male's gaze by hiding their appearance*
- *RP13: I "myself" always try to wear my professional uniform to avoid any attention from male- colleagues*
- *Participant 01 "Being a female and an engineer at the same time leads you to speak like a man, to work like a man, to follow the masculine norm, admit competition and non-cooperation, accept long working hours... Briefly, you have to behave almost like men; I am working like a man...."*
- *Participant 05: "I think that a woman is as good as a man, so she claims to be so, she learns to work like them. As a woman, you need to look like them, to behave like them, to be rough, to permit rough talk and offensive humour because the way they perceive you makes a difference. So you have to struggle to gain your status and acceptance..."*
- *RP08: I prefer working with men, it is a good thing because it is more practical, and they are open, they don't pay attention to the details, and they are direct in their speech. They don't gossip.*
- *RP10: I like men's way of thinking; they use their rational more than emotions*
- *RP11: I see myself more integrated with men than women. I get used to masculine conversations, they use language specific to them when speaking about subjects they prefer such as football and politics. They use very (mmm) masculine words. And when hearing them I don't feel ashamed because I am accustomed to that rough talk.*
- *RP 06: "...in such masculine culture, women find themselves obliged in certain contexts to adopt masculine characteristics to do their job to be recognized as an engineer...."*

The results show that the majority of participants use masculine strategies because they believe they are adequate to do engineering work that correspond with the nature of the workplace. Further, the results show that male strategies are most popular among male and female workers. To a certain extent, male strategies may reflect the engineering workplace nature which favours masculine norms.

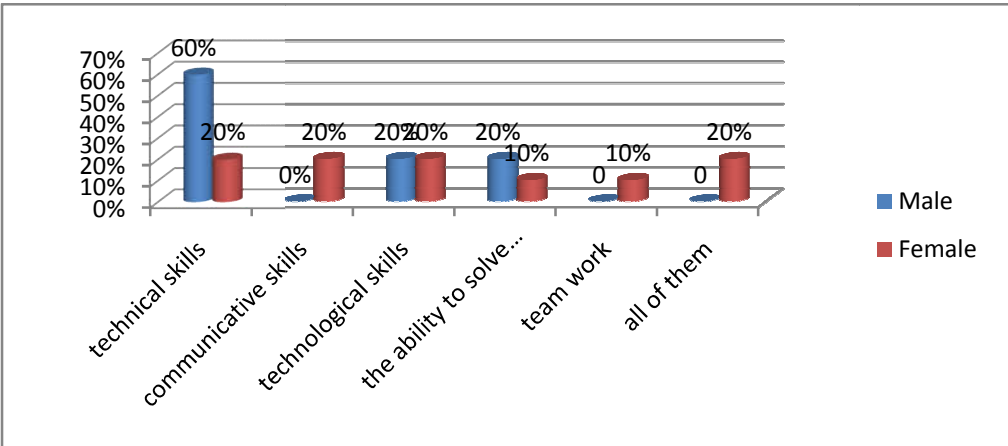
Q13: What are the skills that engineering require?

This question aims to report the engineering skills and techniques that engineering requires. The respondents are asked to give various professional skills of a professional engineer. Its main purpose is to bring their perception and understanding of a professional engineer.

Table (4.15a). Male and Female Engineers’ Professional Skills at Engineering Workplace

Response	Number of the respondents		Percentage of the respondents	
	Male	Female	Male	Female
Technical skills	30	10	60%	20%
Communicative skills	/	10	/	20%
Technological skills	10	10	20%	20%
The ability to solve problems	10	5	20%	10%
Team work	/	5	/	10%
All of them	/	10	/	20%
Total	50	50	100%	100%

Figure (4.15a). Male and Female Engineers’ Professional Skills at Engineering Workplace



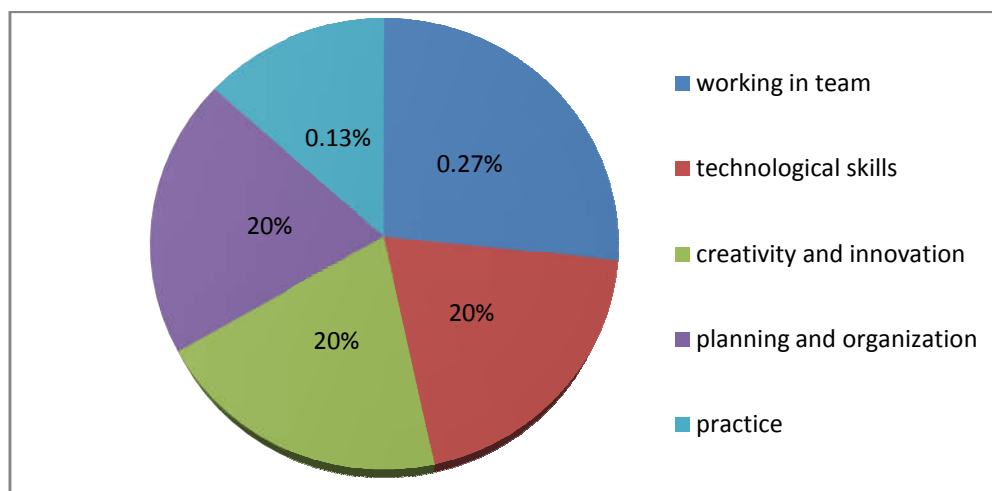
The results in figure (4.15a) represent that 60% of males and 20% of females categorize engineering strategies into technical skills. Other 20% of females report that engineering requires communicative skills. 20% of males and only 10% of females consider the ability to

solve problems in engineering work. Also, we find the same percentage of males and females by 20% who claim that engineering requires technological skills. Only 10% of females state that team work is important in engineering practice. While only 20% of females state that engineering requires all the above mentioned skills. It can be stated that males and females have different work strategies in approaching their work. Central to this, males prefer technical skills and females preferring social ones. The results indicated significant differences that exist between the respondents from both groups in their categorization of a professional engineer.

Table (4.15b). *Female Engineers' Professional Skills at Engineering Workplace*

Response	Working in team	Technological skills	Creativity and innovation	Planning and organization	Practice
Number	4	3	3	3	2
Percentage	26.66%	20%	20%	20%	13.33%

Figure (4.15b). *Female Engineers' Professional Skills at Engineering Workplace*



The data presented in the table and figure (4.15b) show that all the female participants by 100% choose interpersonal and communicative skills as a professional technique in doing engineering job. 20% of females prefer technological skills. 20% of them choose creativity and planning. Also 20% claim planning and organization in engineering practice. Only 13.33% of them argue that engineering work requires practice. Some responses are as follow:

- *RP05: The first thing that engineering needs is that you know how you speak about your ideas to solve problems and to plan innovative ideas.*
- *RP 01: “engineering is about practice, you need to spend more time(laugh) the interest and good performance in mathematics is taken to be normal in engineering. So, this is why you may (think) find more men than women because it is based on subjects I can say that attract more men than women”*
- *RP03/ “[mmmm] we prefer to talk about the problem and ask for help if needed while male engineers are silent most of the time don’t ask for help particularly when it comes to technical matters because they claim that they excel in technology even when they talk they are rough and when asking for help you feel that they are hesitant”.*
- *RP04: to work in engineering means that you should work and be involved within a team (mmm) I always enjoy to work with skillful people, it is so interesting*
- *RP6 “We have to spend more time looking at the details of a technical work and more time on connecting and coordinating with others in order to gain support for our ideas, asking questions and find a solution to the problem”*
- *RP08: engineering work demands creativity and innovation. Engineering make you think more than other job do, you have to be creative to be classified as an engineer and to achieve a sense of distinction from others. I consider it as an art because you learn as well as you bring your creative side to place things together...*
- *Inter: what does engineering require?*
- *RP11: engineering practice make you think about the possibilities of different solutions, it makes you good at solving problems ...*

The data display that female engineers agree that interpersonal and communicative skills are of significant importance in doing their work within their professional communities. Worthy to mention, the results show that the female participants agree that engineering job requires both communicative and technical professional skills.

The present section is concerned with Algerian female engineers’ construction of professional identities. The findings indicate that female engineers perceive engineering as

highly gendered, most of them are discursively affected by the male norm and the culture of their jobs. The gendered engineering culture legitimizes male's presence and practices that become exclusive for them. Interestingly, female's professional identities are negotiated through their submission to the culture as well as adopting both masculine characteristics and norms. They sometimes use ways which paradoxically represent both females' difficulties and the tension between "sameness", to fit in the masculine domain and "difference", to highlight their femininities, to represent themselves as professionally adequate for the job. Hence, engineering is discursively gendered; the gendered engineering culture legitimizes male's presence and practices. The data denote that participants negotiate their professional identities in light with the available institutional discourses of masculinity that reflect the nature of engineering workplace as a masculine domain. It is remarkable that there are significant responses between male and female engineers. Male engineers depict themselves as professionally adequate for the job, they state that the workplace is a setting they belong to since it is historically dominated by men. Throughout the responses, the participants clearly value and articulate their abilities as professional engineers. Additionally, masculine characteristics seem to be popular; the participants consider men as the norm and draw on the hierarchical values between male and female engineering characteristics where male characteristics are preferable compared to those of females. Hence, engineering setting validates the masculine characteristics that have high hierarchical values and mobilize men's characteristics and values as the natural norm. Moreover, the participants perceive their status as intellectually and professionally identified, using adequate professional strategies and requirement for the job. Male engineers value technical, technological skills and the ability to solve problems, whereas female engineers claim the importance of technological, communicative, technical skills, the ability to solve problems and working in team work. The next section studies females' challenges at engineering workplace.

4.2.5. Section five: Algerian Female Engineers' Challenges at Engineering Workplace

The last section is dedicated to the difficulties that Algerian female engineers working at Algerian Sonatrach Company face.

Q14: Do you face discrimination at engineering workplace?

This question aims to examine participants' experiences at engineering workplace. Participants are required to answer whether they face any kind of discrimination at the Algerian Sonatrach Company.

Table (4.16a). *Male and Female Engineers' Experiences of Work Discrimination*

Response	Number of the respondents		Percentage of the respondents	
	Male	Female	Male	Female
Yes	00	45	/	100%
No	50	5	100%	/
Total	50	50	100%	100%

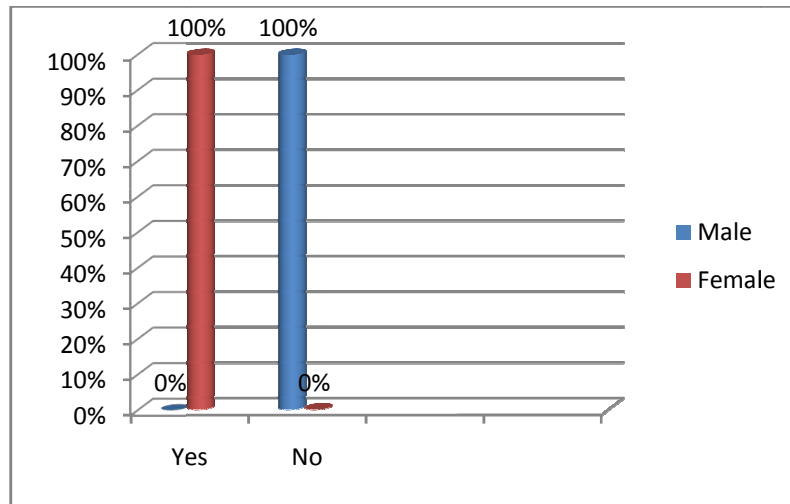
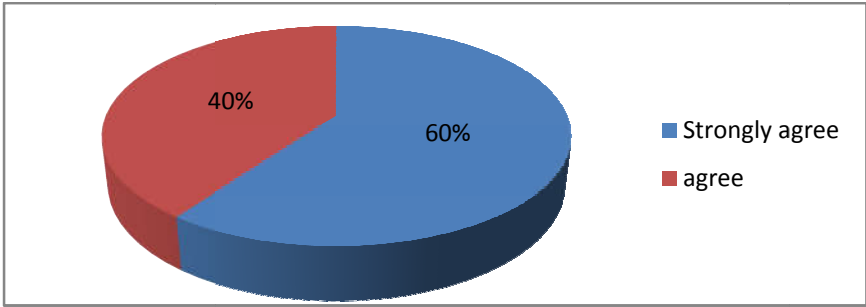
Figure (4.16a). *Male and Female Engineers' Experiences of Work Discrimination*

Figure (4.16a) shows that all the female participants of the questionnaire believe that they are discriminated at their work, whereas all male participants disagree with the issue of workplace discrimination. The data show that gender differences and discrimination prevail at engineering workplace in Sonatrach Company.

Table (4.16b). *Female Engineers' Experiences of Work Discrimination*

Response	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Total
Number	09	06	00	00	00	15
Percentage	60%	40%	00%	00%	00%	100%

Figure (4.16b). Female Engineers’ Experiences of Work Discrimination



The interview data in (4.16b) present that 60% of the participants who strongly agree and 40% of them agree with the existence of professional challenges. The data show that all female engineers agree that they face professional challenges that are clearly represented in the following question.

The results of female’s discrimination at engineering workplace justify men’s normalized existence at engineering. Females’ underrepresentations act as an institutional barrier to achieve their full potential that also correspond the traditional stereotypes of females’ status at engineering workplace; a culture that prescribes masculinity as the norm.

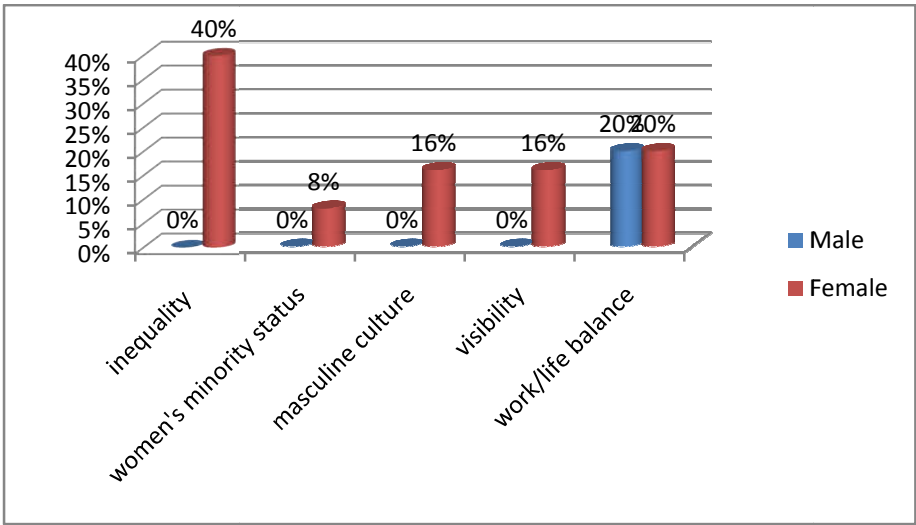
Q 15: What are the challenges you face at your workplace?

The aim here is to identify the difficulties that female engineers encounter as a barrier to fulfill their work.

Table (4.17a). Male and Female Engineers’ Challenges at Engineering Workplace

Response	Number of the respondents		Percentage of the respondents	
	Male	Female	Male	Female
Inequality: Discrimination, exclusion, and invisibility	00	20	/	40%
Women’s minority status	/	4	/	8%
Masculine culture	/	8	/	16%
visibility	/	8	/	16%
Work/life balance	10	10	20%	20%
Total	50	50	100%	100%

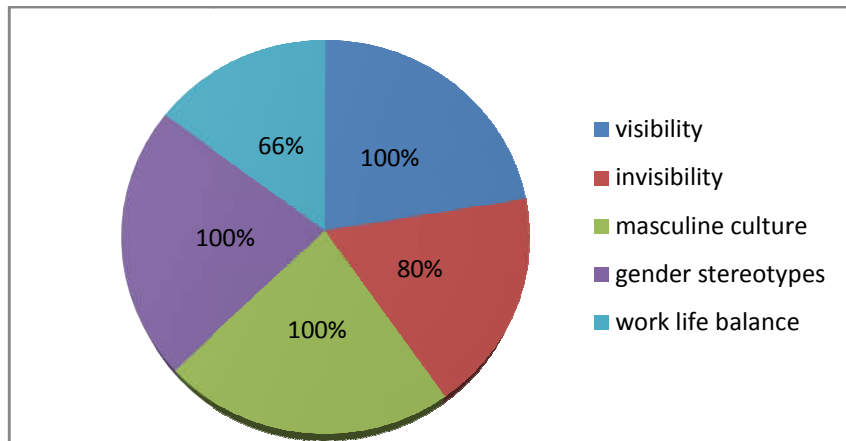
Figure (4.17a). Male and Female Engineers’ Challenges at Engineering Workplace



The data displayed in figure (4.17a) present significant differences in the respondents’ answers. As noticed, figure (4.17a) shows that 40%of females declare that females suffer from discrimination because they are different from the norm. While, 10% of females and males claim that they face work/life balance. Beyond, 16% of females claim their visibility. 16% of the female participants face the masculine culture as a barrier and only 8% of them voice women’s minority status that stands as a barrier against their full potential. Hence, the results show that women are more likely to speak about the challenges; they express openly the restrictions that are normalized and more tolerable in workplace culture at Sonatrach Company.

Table (4.17b). Female Engineers’ Challenges at Engineering Workplace

Response	Visibility as a minority group	Invisibility: marginalization, inequality, and exclusion	Male’s network: the masculine culture	Work/life balance	Gender stereotypes	Total
Number	15	12	15	10	15	15
Percentage	100%	80%	100%	66.66%	100%	100%

Figure (4.17b). *Female Engineers' Challenges at Engineering Workplace*

The results identified in the figure (4.17b) indicate that female participants identified more than one challenge. All female participants by 100% argue that they face restrictions because of the masculine working culture, women's invisibility as a minority group, and gender stereotypes. While the majority of them by 80% demonstrate their marginalization and exclusion through the process of invisibility as workers and 66.66% of the female participants confirm facing work/ life imbalance due to the nature of their workplace that consumes time and efforts. Female answers clearly state their work challenges which are presented as the following:

- *RP03: "Engineering needs long working hours... the majority of Algerian women prefer traditional female professions due to many reasons, among them the nature of these kinds of jobs that allow them to combine between work and family"*
- *RP05: "Being an engineer doesn't mean that one neglects the fact of being a woman, wife, daughter and mother we have to do our tasks towards our families a gift we are born with and socialized into being"*
- *RP07 "being a female engineer is not easy at all , we have to work according to that culture as men at the same time we need to be recognized as women engineers"*
- *RP12: "...the masculine culture of engineering doesn't need to be questioned because it is a male signed profession while women who come into it have to learn about the masculine culture and adopt masculine characteristics..."*
- *RP09: " ...One cannot deny the fact that male engineers are active and ambitious and self-confident which is mainly due to the perception that their presence is something natural while*

female engineers reluctant and silent in mixed interactions but sure of their abilities as engineers...”

- *RP10: “Engineering is historically over-numbered by men who find it easier to communicate with their peers since the setting is too dominated by males while women sometimes feel neglected because they represent a minority group. So, they interact seldom”.*
- *RP11: “[mmmm] we prefer to talk about the problem and ask for help if needed while male engineers are silent most of the time. They don’t ask for help particularly when it comes to technical matters because they claim that they excel in technology even when they talk they are rough and when asking for help you feel that they are hesitant”.*

The participants’ answers reveal that women face more than one restriction in engineering workplace setting. All of the restrictions mentioned above act against women’s achievement and affect their sense of belonging i.e. membership at workplace setting. It is likely that female participants show more interest in identifying the workplace challenges that are mainly classified into inequality: discrimination, exclusion, and invisibility, women’s minority status, masculine culture, visibility, and work/life balance.

Finally, the findings provide a picture of women’s status at engineering. The gendered engineering culture legitimizes male’s presence and practices that are exclusive for them. Women’s fear of exclusion affects them to make efforts to gain acceptance and membership. Women’s underrepresentation in engineering is due to the fact that the workplace is outnumbered by men i.e. the culture of engineering is loaded by gender norms to serve the masculine culture. As a result, women experience the processes of exclusion and in/visibility that make the workplace more comfortable to the dominant group. As minority group, the female participants’ claim that engineering is resistant to change that is reinforced by historically gender relations and subtle mechanisms to reinforce men’s stability and women’s fragile position. Engineering remains a domain that highlights men’s privilege and women’s non-congruence. Participants announce that engineering as a workplace context improving and normalizing women’s presence as real engineers. The data review specific experiences of female engineers living at the margins of engineering world and underline stereotypical assumptions claimed by men about women’s incompetence at engineering. They hence argue that engineering work requires efforts and work more than men by spending more time, their presence at engineering is socially perceived as unusual i.e. engineering as a masculine domain forces women to negotiate their professional identities in order to fit in the engineering culture. This is clear evidence about female engineers’ resistance at engineering

workplace. Like any other work, the female participants assert their right to be involved within engineering because it is not exclusive to men only. Yet, women's fear from exclusion forces them to make efforts to gain acceptance and membership.

4.3. Interpretation of the Findings

This section is about the interpretation of the main findings in relation to the current review of literature previous studies conducted on gender and identity construction. It interprets the main results obtained from two research instruments (i.e. male and female engineers' questionnaire, and female engineers' interview). It refers to Fairclough's Critical Discourse Analysis to analyse the data gathered from the interviews and the questionnaire with engineering participants. According to this approach, language is a social practice. Data analysis was processed along Fairclough's Three-dimensional conception of discourse (1989) in analysing the discursive construction of females' professional identities, referring to the complexities of engineering and the available engineering discourses. Hence, the present section attempts to address the four hypotheses of the present research study. The findings obtained from the analysis of the data collected show that there is a significant correlation between the findings.

The first section, entitled "Participants' Profiles", includes detailed description about gender, social, and professional information about female and male engineers' participants. The findings revealed significant gender differences that exist at engineering workplace in the Algerian Sonatrach Company. Men engineers outnumber female engineers. The relationship between engineering and masculinity is evident. The findings articulate that the workplace is loaded by the masculine culture, discourses of gender differences, and power relations that correspond to the notion of belonging to the workplace. With regard to Holmes' view (2006, see chapter two) about power relations that strongly operate in the workplace through overt or covert ways by the dominant members to govern people's behaviours, interactions, styles, actions, and relationships, the findings revealed that engineering as a masculine workplace legitimizes men's status through gender and power relations that tend to be naturalized and unmarked by the dominant group of males. Through the participants' responses, the issue of women's visibility is significant and conceptualized as others, as outsiders, they make an exception to the norm. The participants depict that women represent only small minority compared to men. Women are perceived to be different from the masculine culture and network. As Faulkner (2006) and Weber (2018) state that women are positioned within

minority status at engineering (see chapter two), the findings suggest that female engineers stand for minority group in engineering workplace at Algerian Sonatrach Company.

Section two, entitled “Participants’ Perceptions of Engineering”, includes participants’ perceptions, motives, and opinions about engineering workplace at the Algerian Sonatrach Company. The findings revealed significant differences between male and female participants. The majority of the participants agree that engineering is their choice profession. Female participants’ responses about the choice of engineering underline their empowerment and resistance in doing engineering job. Consistent with Sagebiel (2008) findings about women’s minority status as a big challenge in male dominated in masculine domains, the findings show that Algerian female engineers still face social and cultural assumption about placing women in society that prevail in the gender distribution of labour through their numerical minority as a challenge .

Based on the first hypothesis which stipulates that Algerian women engineers believe that their biological differences with male engineers do not obstruct them from effectively performing their engineering tasks, since they are self-reliant and competent, the findings demonstrate that female engineers working in Algerian Sonatrach Company claim women’s encouragement and endeavour to choose the engineering profession. They justify their decision through using the professional requirements of engineering profession. Participants’ perceptions of engineering demonstrate that it is a gendered masculine domain which corresponds with Faulkner (2006) definition of engineering workplace that is governed with gender inclusive dynamics (see chapter two). With regard to the claim of Skaggs (2012) about the cultural environment of engineering that is perceived as masculine. It privileges men and forces women to “fit in” the male-dominated norms of engineering, and strongly dictates how workers create the culture of their environment and how they are affected by its culture, the masculinity of engineering discourse is evident in females’ responses about the nature of engineering work, justifying that the masculine culture of engineering stands behind women’s minority status.

Also, gender differences between men and women prevail in engineering discursive practices. Female engineers shed light on the masculinity of engineering whereas men who dominate the setting perceive their presence as natural. They articulate that the workplace is loaded by the masculine culture and discourses of gender differences and power relations that correspond to the notion of belonging to the workplace. The engineering workplace

serves men's dominance and assumption about their natural place. The findings draw on the hierarchical values between males and females governed by the masculine tendency of work.

Section three, entitled "participants' Attitudes towards Women's participation at Engineering Workplace", explores the status quo of Algerian female engineers working at Sonatrach Company. It treats the first research hypothesis, addressing that Algerian women engineers believe that their biological differences with male engineers do not obstruct them from effectively performing their engineering tasks, since they are self-reliant and competent. The findings highlight that engineering remains a masculine domain where its culture discourages females from participation in light of the cultural stereotypes and perceptions about the gendered distribution of the workplace in the Algerian society. The results demonstrate that men's responses highlight women's unequal presence at engineering workplace, claiming that engineering is an exclusively men's space dominated by masculine culture. However, female engineers show positive response, claiming that they "fit in" engineering workplace, challenging the masculine norms of engineering. The motives behind women's minority at engineering refer to male-dominated culture, women's minority status, physical appearance, practices of in/visibility, discrimination and exclusion from participation at engineering workplace. The findings revealed women's awareness about the cultural and institutional practices that prevail at engineering workplace setting.

Female engineers shed light on the masculinity of engineering where men dominate the setting. They articulate that the workplace is loaded by the masculine culture, discourses of gender differences and power relations that correspond to the notion of belonging to the workplace. Hence, engineering workplace is governed by stereotypical beliefs about gender dynamics and gendered discourses that regulate men's and women's gendered practices (Jan Sunderland, 2004, chapter one). The gendered discourses of engineering workplace index female engineers as outsiders whose place is unnatural (Mullany, 2007, see chapter two). Moreover, the findings suggest that men's place are naturalized and legitimized through the discourse of masculinity that exclude females from participation which is convenient with Fairclough's claim (1989) that power serves to constitute both social relations and the discourses that work to legitimize and naturalize the relations of power and domination. The present findings coincide with Faulkner's study (2006), claiming that the workplace practices serve men who perceive that their presence is natural, affecting their sense of belonging to such culture. Hence, Faulkner (2006) claims that these practices involve the "in/visibility paradox" that women experience routinely in their engineering workplace culture.

Engineering continues to be gender marked which corresponds to the “image problem” of engineering that is based on gender stereotypes (Faulkner, 2006, see chapter two). In the same vein, engineering is an institutional gendered workplace that is marked by stereotypes and bias. Weber (2018) states that the engineering field is full of bias of pre-existing prejudices about men and women. Male and female workers are differentiated through stereotypical gender roles; women are less likely to be hired than men, referring the *pre-existing biases*.

Section four, entitled “Algerian Female Engineers’ Construction of Professional Identities at Engineering Workplace”, addresses the workplace and existing discourses that affect the construction of females’ engineers’ professional identities, including the strategies they adopt to cope with nature of engineering workplace. This section addresses the second and third research hypotheses.

The second hypothesis states that Algerian female engineers demonstrate their self-positioning and engage in co-construction and negotiation of their professional identities despite unequal distribution of power at engineering workplace. The data denote that female participants negotiate their professional identities in light with the available institutional discourses of masculinity that reflect the nature of engineering workplace as a masculine domain. It is remarkable that there are significant responses between male and female engineers. Male engineers depict themselves as professionally adequate for the job, they state that the workplace is a setting they belong to since it is historically dominated by men. Yet, female engineers are aware about the nature of the workplace, they highlight their in/visibility and exclusion processes that they undergo since they belong to minority group. Throughout the responses, the participants discursively value and articulate their abilities as professional engineers, characterizing their professionalism with regard to the requirement of engineering job. The findings reveal that women are judged in terms of being different from men who represent the norm in engineering profession. The data, then, review specific experiences of female engineers living at the margins of engineering world and signify stereotypical assumptions claimed by men of women’s incompetence at engineering. They argue that engineering work requires more efforts and work than men, spending more time because their presence at engineering is socially perceived as unusual i.e. engineering as a masculine domain forces women to work not only to be successful, but to negotiate their professional identities in order to fit in the engineering culture. This is clear evidence about female engineers’ resistance at engineering workplace. Here again, the participants sound confident and self-reliant of their abilities to do their career job, confronting to the masculine culture that engineering entails. Also, the interview echoes women’s power and ability driven by their

will to fulfil the engineering job. Like any other work, the participants assert their right to be involved at engineering because it is not exclusive to men only. Yet, women's fear from exclusion forces them to make great efforts to gain acceptance and membership.

This section treats the third research hypothesis which states that Algerian female engineers flip between "masculine" and "feminine" identities, since workplace culture is perceived to have a masculine tendency of work. The findings uncover that Algerian female engineers perceive engineering as highly gendered, most of them are discursively affected by the male norm and the culture of their jobs. The gendered engineering culture legitimizes male's presence and practices that are exclusive for them. Additionally, masculine characteristics seem to be popular; the participants consider men as the norm and draw on the hierarchical values between male and female engineering characteristics where male characteristics are preferable compared to those of females. Hence, engineering setting reinforces the masculine characteristics that have high hierarchical values, including discourses of technology, rough talk, masculine network, and working in teamwork (Watts, 2010; Faulkner, 2006, see chapter two). Moreover, most of the participant perceives their status as intellectually and professionally identified, using adequate professional strategies and requirement for the job. Male engineers value technical, technological skills and the ability to solve problems. Whereas, female engineers center the importance of technological, communicative, technical skills, the ability to solve problems, and working in team work. Female engineers highlight the tension between the requirements of sameness; submitting to the masculine culture, and difference; displaying feminine characteristics (Sophie Reissner, 2012, see chapter two).

Section five, entitled "Algerian Female Engineers' Challenges at Engineering Workplace", presents workplace challenges that face female engineers at the Algerian Sonatrach Company. It gives more space to the participants to voice the difficulties that act as a barrier against their achievements at engineering. Particularly, the present section treats the fourth research hypothesis that suggests that Algerian Female engineers face many professional challenges mainly in/visibility, discrimination, and exclusion. These work difficulties stand against harnessing their full potentials in engineering. The findings demonstrate that Algerian female engineers working at Sonatrach Company face considerable work challenges that force them to submit to the culture of workplace which is mainly characterized by the masculinity of engineering, in/visibility processes, gender stereotypes, and work/ life balance. Consistent with Lewis and Simpson's theorization of the "in/visibility vortex" which explains women's in/visibility, where women are submitted to exclusion and marginalization with regard to

social and professional power dynamics, the findings revealed relevant findings about the practices of females' in/visibility, exclusion, and marginalization in the masculine domain, simply because they are different from the norm, i.e. men. Women are unsatisfied with the existing culture and the current professional position through voicing their professional challenges, highlighting the discourse of in/visibility at engineering workplace. The findings reveal that the cultural and professional processes systematically exclude female engineers from engineering. Female's exclusion is reinforced by gender stereotypes about femininity "as different" from the norms of this profession dictated by man as a dominant group (Tonso, 1996, see chapter two).

Comparing the findings revealed in the above sections, the results uncover significant and related themes to the issue of the status quo of Algerian female engineers working in the Algerian Sonatrach Company. Engineering is exclusively a male-dominated domain. The findings revealed that women are judged in terms of being different from men who represent the norm in the engineering profession. The data uncover specific experiences of female engineers living at the margins of engineering world, shedding light on stereotypical assumptions claimed by men of women's incompetence at engineering. Female engineers argue that engineering work requires professional skills, spending more time and efforts, since their presence in engineering is socially perceived as unusual i.e. engineering as a masculine domain forces women to work hard not only to be successful and achieve their competence but also to negotiate their professional identities in order to fit in the engineering culture. Yet, women's fear from exclusion forces them to make efforts to gain acceptance and membership. As minority group, the female participants' claim that engineering is resistant to change that is reinforced by historically gender relations and subtle mechanisms, reinforcing men's stability and women's fragile position. Engineering remains a domain that highlights men's privilege and women's non-congruence. Female engineers strongly criticize engineering workplace, voicing unequal opportunities at engineering, claiming that engineering culture must improve and normalize women's presence as professional engineers.

4.4. Suggestions

As part of the research work, participants were invited to propose some suggestions to improve women's status at engineering to welcome more female workers. The participants claim that gender differences between men and women prevail in engineering discursive practices. Female engineers shed light on the masculinity of engineering where men dominate the setting. They articulate that the workplace is loaded with the masculine culture, discourses

of gender differences and power relations that correspond to the notion of belonging to the community of engineering workplace. Hence, they articulate the following suggestions:

- The government should offer equal opportunities of work for men and women;
- Establishing gender equality at workplace;
- Eliminating gender stereotype;
- Increasing and encouraging the number of working women at engineering.

4.5. Conclusion

The present chapter is devoted to the presentation of the obtained data gathered from the implementation of two main research instruments; questionnaire and interview. This chapter is divided into three main parts to report detailed findings. The first part presents the analysis of the findings divided into five main parts. The second part provides the interpretation of the main findings, discussing the data obtained from the implementation of both engineers' questionnaire and the female engineers' interview. Finally, the third part provides participants' suggestions about the culture of engineering workplace and women's status at engineering. Finally, the study results provided answers to the research questions, revealed the validity of the hypotheses and provided insights into the experience of women in male-dominated profession.



General Conclusion

General Conclusion

The present study aimed to explore Algerian female engineers' discursive construction and reconstruction of their professional identities at engineering workplace, referring to female engineers' experiences at engineering workplace in the Algerian Sonatrach Company. It sheds light on their coping strategies and the challenges that female engineers face at engineering workplace.

The present research study is organized into four main chapters. The first chapter covers the discursive construction of gendered identities. It includes theoretical issues related to gendered identity and discourse. It addresses the opposition of sex and gender. It also reports traditional studies to language and gender studies. This chapter treats the relationship between discourse, gender, identity, power, and ideology. Moreover, it addresses basic theoretical approaches which intersect with discourse, gendered identities, power dynamics, and ideology.

The second chapter covers the issue of female engineers at engineering workplace. It starts by defining the workplace culture with regard to gender-based division of labour, and power dynamics at workplace. It sheds some light on the discursive construction of female engineers' professional identities, focusing on the complexities of male-dominated engineering with regard to power relations, voice, and in/visibility issues surrounding females at engineering workplace. It focuses on the details of the masculinities and the complexities of engineering workplace, dealing with the discursive and gendered/ing practices. It also identifies females' engineers' barriers that act as obstacles with regard to mechanisms of power relations and cultural conventions at male-dominated engineering.

The third chapter deals with the research design and methodology that structure the present study. It highlights Algerian women's economic participation. It reports the research design that is distributed in three main parts. The first part covers the setting, population and sampling of this research work. The second part provides the methodological approaches adopted in this research work, including quantitative and qualitative approaches, and critical approaches to text and talk, mainly critical discourse analysis framework. The third part presents the research instruments adopted to collect data, including questionnaire, interview, and observation that structures the research work.

The fourth chapter reports the findings of the present research work. It is organized into three main parts. The first part provides the analysis of the findings gathered from the questionnaire and the interview that are analyzed quantitatively and qualitatively. Its first part is distributed into five sections; participants profiles, participants' perceptions of engineering workplace, attitudes towards women's participation at engineering workplace, and participants' challenges at engineering workplace. The second part of the present chapter presents the interpretation of the findings. The third part is devoted to the participants' suggestions about the status of female engineers at male-dominated engineering.

To investigate the issue of Algerian female engineers' experiences at engineering workplace, the following research questions were investigated:

1. What might be the motives that lead Algerian women working in Sonatrach Company to choose a male-dominated job like engineering?
2. How do Algerian female engineers working in Sonatrach Company construct and enact their professional identities at engineering workplace?
3. How do Algerian female engineers working in Sonatrach Company cope in engineering professions in light of male-domination at workplace? What are the characteristics and the strategies that women adopt in their speech and behaviour to cope with uneven power at workplace and to effectively perform engineering tasks?
4. What might be the challenges that Algerian female engineers working in Sonatrach Company face at engineering workplace?

In order to answer the above mentioned questions, four hypotheses were suggested. The first hypothesis posits that Algerian female engineers believe that their biological differences with male engineers do not obstruct them from effectively performing their engineering tasks, since they are self-reliant and competent. The results indicate that engineering workplace mirrors the perpetuation of power relations that exist through gendered engineering discourses and practices that assume engineering as exclusively masculine domain. The engineering workplace reflects the cultural and professional processes that perceive engineering as a typically naturalized male domain. Female engineers perceive engineering as highly gendered workplace; most of them are discursively affected by the male norm and the culture of their jobs. Further findings show that female engineers stand as minority group. They justify their choice of engineering profession through using professional requirements and skills that are adequate for engineering work. Through female engineers' perceptions of engineering

workplace, they demonstrate that engineering practices force them to “fit in” the masculine culture of engineering workplace.

The second hypothesis assumes that Algerian female engineers demonstrate their self-positioning and engage in co-construction and negotiation of their professional identities despite imbalanced distribution of power at engineering workplace. The results indicate female engineers’ awareness about the gender differences and the gender hierarchies between men and women that exist at engineering workplace. Female engineers demonstrate their professional abilities and skills to do the engineering work. The results indicate that they negotiate their professional identities with regard to the available institutional discourses of masculinity that reflect and institutionalize the engineering workplace as a masculine domain. Female engineers argue that engineering workplace requires more work because their contribution is socially and professionally perceived as unusual. They are forced to work hard not only to be successful and achieve their competence but to negotiate their professional identities in order to “fit in” the engineering culture. Further results show female engineers’ resistance to confront the masculine culture of engineering; they echo women’s power and ability to assert their right to be involved within engineering because it is not exclusive to men only.

The third hypothesis suggests that Algerian female engineers flip between “masculine” and “feminine” identities, since workplace culture is perceived to have a masculine tendency of work. The findings revealed the masculinities and complexities that surround engineering workplace. Female engineers’ coping strategies reveal extensive masculine culture that affects their coping strategies, and highlights women’s consciousness-raising in the professional domain while struggling to gain their social status. The gendered engineering culture legitimizes male’s presence and practices. Hence, female engineers submit to the masculine culture, adopting masculine and feminine strategies that are perceived as adequate professional strategies and requirement for the engineering profession.

The last hypothesis posits that Algerian female engineers face many professional challenges mainly in/visibility, discrimination, and exclusion. These work difficulties stand against harnessing their full potentials in engineering. The results indicate that Algerian female engineers face many professional and cultural barriers that stand against their achievement at engineering workplace, including invisibility issues, minority status, gender stereotypes, and the masculine culture of engineering workplace. The findings depict that

female engineers voice their discrimination, exclusion, and in/visibility due to the instilled conventions of masculinity. The present study reveals that women are judged in terms of being different from men who represent the norm in engineering profession. Women's underrepresentation at engineering is due to the fact that the majority of engineering workplaces are outnumbered by men i.e. the culture of engineering is loaded by gender norms and expectations to serve the majority groups who practice ongoing strategies of exclusion and normative pressure to those who are systematically discouraged and underrepresented. Hence, the processes of exclusion from engineering make the workplace more comfortable to the dominant group, a factor that makes engineering resistant to change which is reinforced by historically gender relations and subtle mechanisms to reinforce men's stability and women's fragile position. Engineering remains a domain that highlights men's privilege and women's non-congruence.

The present study challenged the conventional ideas about job distribution at workplace setting. It sheds light on women's valuable contribution in male-dominated engineering. In doing so, adapting the study of discourse from a critical and a feminist perspective in the present research contributed to explore female engineers' construction of professional identities with regard to prevailing power dynamics reinforced by discourses of masculinity. This thesis helps to improve women's status at engineering workplace in the Algerian Sonatrach Company, since it is a context for gender differences, power relations, and masculine culture. It is beneficial to create a hostile working environment for women who will be valued based on their professional abilities rather than gender differences. This study contributed to reveal different aspect of reality about the status quo of Algerian female engineers in the Sonatrach Company and uncovered hidden ideologies and asymmetrical power relations between male and female engineers.

In spite of the significance of the results of the present research, the process of investigating Algerian females' engineers' negotiation of their professional identities at engineering workplace is featured with certain limitations due to the following difficulties encountered while conducting this research:

- The pandemic of Covid 19 that forced people to set limitations and work rules. It was difficult to get access to the workplace setting.
- Women make only a minority group of engineering setting, it was difficult to find and contact them.

- Lack of access to research setting
- Insufficient sample size, since female engineers are minority group in Sonatrach Company
- It was very difficult to convince them to contribute in this research work due to the long working hours.

In light of the objective of the research at hand that focuses on Algerian female engineers' discursive construction and reconstruction of their professional identities at engineering workplace, further suggestions for future research might improve women's position at workplace, mainly, at male-dominated domains:


- To better understand the implication of the results of this research study, future studies could address changing position of female engineers at engineering by looking at ways to mitigate gendered norms and stereotypical beliefs that prevail at engineering workplace.
- Further research could tackle the possible factors that might enhance women's progress at engineering workplace.
- Future studies are needed to address the effects of women's contribution in the field of engineering.

To this end, the representation of female workers in men's fields in Algeria remains an issue of debate due to the instilled social and professional conventions that constrain women's contribution in male-dominated workplace. The analysis of the participants' lived experiences remains representative of a significant manner of women's consciousness in the professional domain while struggling to gain their social status. Women's resistance to the available masculinities affects their coping strategies and challenges in the male-dominated engineering workplace.

This study is meant for the examination and identification of female engineers' experiences and the impact of historical nature of engineering on the discursive construction of their professional identities. Thus, it draws on the resources of well-known methodological frameworks as Fairclough's approach to critical discourse analysis that serve to fully understand the issue of women in engineering and the taken-for-granted masculinities of engineering.

To this end, we have shed important light on the close relationship between engineering and gender. It, then, reviews specific scientific inquiries made about the experiences of female engineers living at the margins of engineering world. Hence, female engineers articulate their

awareness about the hierarchy between men and women and signify stereotypical assumptions about women's incompetence with engineering



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Appendices

Appendix A

PARTICIPANTS' QUESTIONNAIRE

“We are currently working on the representation and the experiences of female engineers at workplace, it would be grateful if you answer the following questions”:

Section One: The Participants' Profile

1. gender: male female

2. social status:

3. professional status :

4. years of experience :

Section Two: Participant's Perceptions of Engineering

5. Is engineering your choice

6. Why Did You Choose Engineering?

Q7: How do you perceive the domain of engineering?

Q08: How do you describe engineering setting?

Section Three: Participants' attitudes towards women's participation at engineering workplace

Q9: Are you welcomed at engineering?

Q10: With whom among your fellow citizens have you established professional relationships?

Q11: Do you believe yourself to be professional engineers?

Q12: Do men and women work differently?

Q13: Do you have self-confidence in doing engineering work? If no say why?

Q14: What are the strategies that you adopt to fulfill your work?

Masculine strategies

Feminine strategies

both

Q15: What are the skills that engineering require?

Section Four: Algerian female engineers' construction of professional identities at engineering workplace

Q16: Do you think that women fit in engineering work? Why?

Strongly agree
Agree
Neutral
Disagree
Strongly disagree

Why?

.....

.....

Q17: What will change if there are more females at engineering workplace?

Section five: Algerian female engineers' challenges at engineering workplace

Q18: Do you face any discrimination at engineering?

YES

NO

Q19: What are the challenges you face at your workplace?

Q20: what are your suggestions to enhance the representation and the position of women at workplace?

Appendix B

Interview Questions

Section One: Participants Profile

Q1: Age Distribution

Q2: Professional status

Q03: Female's Professional Experiences

Q04: Female's Social Status

Section Two: Female engineers' Perceptions about Engineering Workplace

Q 05: Is engineering your choice?

self choice

imposed

Q06: Why have you chosen engineering?

Q7: How do you perceive engineering?

Section three: Attitudes towards women's participation at engineering workplace

Q8: How do you perceive your presence at engineering?

Q9: How are you treated by male colleagues?

Section four: Algerian Female Engineers' construction of professional identities at engineering workplace

Q10: What are the skills that engineering requires?

- Work in team
- Technological skills
- Creativity, innovation
- Interpersonal and communicative skills
- Planning and organization

- Practice

Q11: What are the strategies that you adopt to succeed in your work?

Section five: Algerian Female engineers' challenges at engineering workplace

Q12: Do you face any challenges in engineering?

Q13: Which of the following restrictions/ challenges you face at engineering?

Q14: What are your suggestions to change or enhance women's position in engineering?

Appendix C

استطلاع رأي حول عمل المرأة المهندسة

هدف الاستطلاع تتناول هذه الدراسة مهنة المهندسات الجزائريات حيث تسلط الضوء على المسار الذي تواجهه المرأة لتحمل وظيفتها المهنية في ظل انتشار الدهنيات التي تؤكد ان مجال الهندسة باختصاصاته المتعددة هو عالم خاص بالرجال نتيجة كل من الخلفيات الاجتماعية والثقافية التي تخص التقسيم التقليدي للأدوار. وبما أن المرأة العاملة الجزائرية أثبتت حضورها كفاعل ناشئ ومؤثر في الواقع الاقتصادي والاجتماعي للبلاد فالهدف من هذا البحث أيضًا هو تسليط الضوء على الرؤية التي تعالج مسعى المرأة ومساهماتها واستراتيجياتها للتعامل مع مجال تمثل فيه أقلية صغيرة وما هي أهم المعوقات التي تواجه المرأة في مجال الهندسة في الجزائر؟

- الجنس : ذكر أنثى
2. الحالة العائلية متزوج(ة) اعزب(ة) مطلق(ة)
3. المنصب الحالي.....
4. الاختصاص.....
5. هل كانت مهنة الهندسة اختيارك؟ نعم لا
6. ما الذي دفعك للانخراط في مهنة الهندسة؟
- القدرة على القيام بالعمل الوظيفي
 - أفضل مجال
 - الحاجة للقيام بذلك
 - تحد لإثبات نفسك
5. ما الذي جذبك إلى مهنة الهندسة؟
- كنت جيدة(ة) في العلوم والرياضيات
 - تريد أن تفعل شيئًا عملي
 - أنت مهتم بحل المشكلات
 - إحداث فرق / أن تكون مختلفًا
 - تحدي لإثبات الذات
 - القدرة على إنجاز العمل الهندسي

6. مع من تقتصر علاقات المهنية مع زملائك المهندسين؟

- مع الذكور فقط

- مع الإناث فقط

- مع الذكور أكثر من الإناث

- مع الإناث أكثر من الذكور

- مع كلاهما

- لا أحد

7. هل تعتبر نفسك مهندسًا محترفًا؟

نعم لا أحيانا

8. كيف تتصور مجال الهندسة؟

- ذكوري بامتياز

- نسوي بامتياز

- محايد

9. كيف يمكنك وصف مكان عملك في المجال الهندسي؟

مريح غير مريح

. هل أنت مرحب بك في مكان العمل الهندسي؟

نعم لا أحيانا

11. هل تعتقد أن الرجال والنساء يعملون بشكل مختلف؟

نعم لا

قل لماذا؟

.....

12. هل تتمتع بالثقة بالنفس في أداء عملك الهندسي؟

نعم لا

لماذا؟

.....

13. ما هي دوافعك للمكوث في العمل الهندسي؟

.....

14. هل تواجه أي تمييز في عملك؟

نعم لا أحيانا

15. هل تعتقد أن الأعمال الهندسية تناسب المرأة؟

نعم لا أحيانا

16. لماذا تعتقد أن المرأة يجب أن تشارك في الهندسة؟

- بإمكانها ذلك

- لتحدي الثقافة الذكورية

لتحقيق نهج مختلف

17. ما هي التحديات التي تواجهها في مكان العمل الهندسي؟

- الإقصاء

- غير مقبولة (ة) تماما

- لا توجد تحديات

أذكر تحدي اخر.....

18. ما هي الحواجز التي تواجهها مع المهندسين من الجنس الاخر؟

.....

.....

19. ما هي المهارات التي تتطلبها الهندسة؟

- مهارات تقنية

- مهارات التواصل

- كلاهما

مهارات أخرى.....

.....

20. هل تشارك في العمل الجماعي؟

نعم لا احيانا

21. هل تشارك العمل الجماعي مع

مجموعة الذكور

مجموعة الإناث

كلاهما

22. وفقا لك ، المهندس (ة) الحقيقي(ة) هو/هي

-المتعاون(ة) مع الآخرين

-القادر(ة) على حل المشاكل

-البارع في الرياضيات والعلوم

-التكنولوجي(ة) المبتكر(ة)

..... - سبب اخر.....

23. هل تستشير المساعدة منالعمال الآخرين؟

نعم لا أحيانا

إذا كان الجواب نعم قل من:

الرجال النساء كلاهما

24. هل هناك عدد قليل من النساء في الهندسة؟

نعم لا

..... إذا نعم لماذا؟.....

.....

26- كيف ترى الحضور النسوي في الهندسة؟

لائق غير لائق

..... قل لماذا؟.....

.....

27. ما الذي سيتغير إذا كان هناك المزيد من النساء في الهندسة؟

.....

.....

28. هل تختلف المفردات التي يستخدمها الرجال عن تلك التي تستخدمها النساء في مجال العمل؟

نعم لا

إذا كانت الإجابة بنعم ، فذكر بعض المفردات

مفردات خاصة بالرجال

مفردات خاصة بالنساء

29. ماهي الأساليب التي تعتمد عليها لأداء وظيفتك؟

أساليب ذكورية أساليب انثوية كلاهما

قل لماذا؟

.....

30. هل تستطيع التوفيق بين عملك وأسرتك؟

نعم لا احيانا

قل لماذا؟

.....

31. هل تتلقى الدعم اللازم من طرف عائلتك ومحيطك؟

نعم لا

32. ماهي المعوقات التي تواجهها في مجالك؟

.....

.....

.....

32. بالنسبة لنساء، ماهو نوع المعوقات التي تواجهينها في عملك؟

- كونك مهندسة

- كونك امرأة

-عائق اخر.....

شكرا جزيلاً

Abstract

The present study explores the discursive construction of Algerian female engineers' professional identities at engineering workplace in Algerian Sonatrach Company. More precisely, the present study sheds light on (in) visibility issues of female's contribution, strategies to cope within male-dominated engineering, the challenges of the marginal borders, and underrepresentation imposed by Algerian professional and cultural assumptions on female engineers. In attempting to explore the experiences of Algerian female engineers in light of the present constraints in the domain of engineering, two main data collection instruments were selected. First, the questionnaire was administered to 50 male and 50 female engineers. It aims at exploring participants' perceptions and experiences at engineering workplace. Second, the interview was conducted with 15 female engineers. It aims to explore the discursive construction of females' engineers' professional identities in light of the available engineering discourses of masculinity. The study reveals that engineering workplace is discursively gendered. The results indicate that Algerian female engineers' discourses remain representative of a significant manner of resistance to available masculinities. Moreover, the data reveal a picture of extensive masculine culture that affects their coping strategies, and highlights women's consciousness-raising in the professional domain while struggling to gain their professional status. Female engineers suggest that establishing gender equality through eliminating gender differences at engineering workplace will enable females to regain recognition as professional engineers.

Key words: gender, identity, discourse, male-dominated engineering, Algerian female engineers.

Résumé:

La présente étude explore la construction discursive des identités professionnelles des femmes ingénieures algériennes sur le lieu de travail de l'ingénierie dans la société algérienne Sonatrach. Plus précisément, la présente étude analyse les problèmes d'(in)visibilité de la contribution des femmes, les stratégies pour faire face au sein d'une ingénierie à prédominance masculine, les défis des frontières marginales et la sous-représentation imposée par les hypothèses professionnelles et culturelles algériennes aux femmes ingénieures. En tentant d'explorer les expériences des femmes ingénieures algériennes à la lumière des contraintes actuelles dans le domaine de l'ingénierie, deux principaux instruments de recherche ont été sélectionnés. Le questionnaire a été administré à 50 hommes et 50 femmes ingénieurs. IL explore les perceptions et les expériences des participants sur le lieu de travail de l'ingénierie. L'entretien a été mené auprès de 15 femmes ingénieures. Il explore la construction discursive des identités professionnelles des femmes ingénieures en ce qui concerne les discours d'ingénierie disponibles sur la masculinité. L'étude révèle que le lieu de travail de l'ingénierie est discursivement genré. Les résultats indiquent que les discours des femmes ingénieures algériennes restent représentatifs d'une forme significative de résistance aux masculinités disponibles. De plus, les données révèlent une image de culture masculine extensive qui affecte leurs stratégies d'adaptation et met en évidence la prise de conscience des femmes dans le domaine professionnel tout en luttant pour obtenir leur statut professionnel. Les femmes ingénieures suggèrent que l'établissement de l'égalité des sexes en éliminant les différences entre les sexes sur le lieu de travail de l'ingénierie permettra aux femmes de retrouver leur reconnaissance en tant qu'ingénieures professionnelles.

Mots clés: genre, identité, discours, ingénierie à prédominance masculine, ingénieures algériennes.

الملخص

تستكشف الدراسة الحالية البناء الخطابى للهويات المهنية للمهندسات الجزائريات في مكان العمل الهندسي في شركة سوناطراك الجزائرية. تلقي الدراسة الحالية الضوء على قضايا الاعتبار/التجاهل في مساهمة الإناث، واستراتيجيات التعامل مع الهندسة التي يهيمن عليها الذكور، وتحديات الحدود الهامشية، والتمثيل الناقص الذي تفرضه السلوكيات المهنية والثقافية الجزائرية على المهندسات. في محاولة لاستكشاف تجارب المهندسات الجزائريات في ضوء القيود الحالية في مجال الهندسة، تم اختيار أداتين رئيسيتين لجمع البيانات. أولاً، تم إرسال الاستبيان إلى 50 مهندساً و 50 مهندسة يهدف إلى استكشاف تصورات المشاركين وخبراتهم في مكان العمل الهندسي. ثانياً، تم إجراء المقابلة مع 15 مهندسة. ويهدف إلى استكشاف البناء الخطابى للهويات المهنية للمهندسات في ضوء الخطابات الهندسية المتاحة للذكورة. تكشف الدراسة أن مكان العمل الهندسي محدد بين الجنسين بشكل المهيمن. تشير النتائج إلى أن خطابات المهندسات الجزائريات لا تزال تمثل أسلوباً مهماً في مقاومة الذكورية المتاحة. علاوة على ذلك، تكشف البيانات عن صورة للثقافة الذكورية الواسعة التي تؤثر على استراتيجيات التأقلم، وتسلط الضوء على زيادة وعي المرأة في المجال المهني بينما تكافح من أجل اكتساب مكانتها المهنية. كما تقترح المهندسات أن إرساء المساواة بين الجنسين من خلال القضاء على الفروق بين الجنسين في مكان العمل الهندسي سيمكن الإناث من استعادة الاعتراف بمن كمهندسات محترفات.

الكلمات المفتاحية: الجنس، الهوية، الخطاب، الهندسة الذكورية، مهندسات الجزائريات.