WOMEN FIREFIGHTERS' STRATEGIES FOR ADVANCEMENT IN THE FIRE SERVICE: BREAKING DOWN BARRIERS IN GENDER-BASED OCCUPATIONS

By

BARBARA R. RUSSO

Bachelor of Science in Sociology/Criminal Justice
Averett University
Danville, Virginia
1988

Master of Science in Fire and
Emergency Management Administration
Oklahoma State University
Stillwater, Oklahoma
2010

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Dissertation Approved:

Dr. Dave Neal

Dissertation Adviser

Dr. Brenda Phillips

Dr. Jeanette Mendez

Dr. Tamara Mix

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Abstract: This dissertation examines the barriers female firefighters face trying to advance through the ranks and the strategies they use to overcome these barriers. Despite the fact that women have been employed as career firefighters for nearly 40 years, their numbers have not reflected much growth or mobility through the ranks over this time period. The extant literature primarily focuses on issues faced by women attempting to enter the fire service, not what prevents them from advancing once they enter it. The study asks female firefighters to identify perceived obstacles to their advancement through the ranks and the strategies used to advance. A quantitative methods approach was taken for the dissertation. A survey was distributed online through the International Association of Women in Fire and Emergency Services over a period of one month (June 2013) and 224 female fire service members responded to the survey. Data from the survey, which included several open-ended questions, revealed several distinct perceived barriers to advancement. The data revealed findings related to: (1) mobility through the ranks, (2) perceived barriers to advancement, (3) strategies used to overcome these barriers, (4) educational practices of women in the fire service, and (5) the significant impact of organizational culture within the fire service. Multiple linear regression analysis demonstrated a statistically significant model determining that sexual harassment experience, coupled with total sexual discrimination experience and glass barrier variables predicted the number of promotions received in the current department. From a theoretical standpoint, the study confirmed that a glass ceiling does exist for women at the company officer (captain) level. It also identified how powerful organizational culture can be by providing one group with advantages while alienating others. It may come in the form of denied training requests, assignment to stations where limited experience can be gained, and denial of assignment to specialty teams – all of which may allow men to advance at faster rates than women. From a practical standpoint, the study offers insight into organizational culture and practices within the fire service that must be addressed by fire service leaders if diversity is ever to be truly achieved.

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CHAPTER I

PROBLEM DEFINITION AND RESEARCH QUESTIONS

Since its inception in 1736, the fire service has remained a profession comprised mainly of white males. Numerous court cases have opened doors for women and racial and ethnic minorities to enter the fire service, for example *Berkman v. City of New York and Stark v. City of Spokane.* Legal cases have similarly aided in providing advancement opportunities, for example, *Lewis v. the City of Chicago* and *Vasich v. City of Chicago*. Past research has focused primarily on barriers women face in an attempt to enter the fire service (*National Report Card,* 2008; Chetkovich, 1997, 2004). However, no research has clearly identified the obstacles women face in order to advance through the ranks of the fire service nor the strategies used to overcome such obstacles. This dissertation seeks to identify these obstacles and to unveil the strategies used by women to advance through the ranks while establishing long-term careers in the fire service. To that end, this chapter will focus specifically on the history of women in the fire service, the impact that gender has as both a visible and invisible barrier to promotion, and impacts on the perception of overall job competencies and advancement opportunities.

Advancement opportunities for women in the fire service are limited by several concepts to be detailed in this research (see Appendices E and F). Among the barriers facing female firefighters are role conflict, instances of tokenism, occupational segregation, glass barriers, and organizational culture.

Women in the Fire Service

The fire service has existed in the United States for more than 200 years. Historically, a male-dominated profession, women make up 4.5% of its ranks according to a 2011 Bureau of Labor Statistics Report. Judith Livers, hired in 1974 by the City of Arlington, Virginia, became the first female career firefighter in the United States. She completed a 25-year career, eventually retiring at the rank of battalion chief. While Livers' career went largely unnoticed outside of Arlington, Virginia, Fire Department of New York's (FDNY) Brenda Berkman's career had the total opposite effect. Berkman, most recognized for her suit against the City of New York, eventually opened the doors for women to enter the nation's largest career fire department. Throughout her 25-year career, the now retired captain fought for change within the fire service.

Berkman has remained an outspoken advocate for gender equality and, following 9/11, voiced concerns over the invisibility of female responders in related media stories. Indeed, the majority of 9/11 images portrayed represented heroic firemen and male police officers on that fateful day. Most accounts reinforced the notion of heroes as men, often referring to firefighters as "firemen' instead of the gender-neutral term and paid little attention to female workers at the scene. Her push to have women recognized for their contributions eventually led to the production of a video titled *"The Women at Ground Zero."* While Berkman garnered support from women's advocates and some of her

colleagues (though most will not do so openly), other female firefighters have not appreciated her approach. It is not uncommon for women in the fire service to feel that she has done more harm than good (Chetkovich, 2004). According to Chetkovich (2004), other female firefighters have rejected Berkman's efforts as found on discussion boards hosted by various firefighter forums such as *Firehouse.com*. In postings, female firefighters object to affirmative action or any forms of special treatment for women. They simply want to do the job and be accepted, not be afforded any special treatment (p. 122).

Anecdotal evidence provided by first-hand accounts from women in the fire service indicate widespread instances of harassment, gender bias, and assault. Such instances appear to continue despite training, education, and protections afforded by the Equal Employment Opportunity Commission.

Departments large and small, urban and rural, have been embroiled in lawsuits brought forward by female firefighters. One notable example is a 2010 lawsuit against the Houston Fire Department filed by firefighter Jane Draycott who alleged a pattern of hostility and retaliation. Draycott claimed to be the victim of sexist and racist graffiti. In addition, Draycott claimed that she was scalded by hot water while taking a shower after the cold water valve was turned off and was sexually harassed by a male firefighter. Draycott eventually withdrew her suit against the city. In 2012, retired Fairfax County, Virginia, firefighter Mary Getts Bland won a suit against the department for acts of harassment as the judge determined "a reasonable juror could find that [the department] knew or should have known about the harassment and failed to take effective action to stop it." A second firefighter in Fairfax Country, Stacey Bailey, won an earlier suit based on similar claims (MacDonald, 2012).

Other departments have found themselves in court over the disparate treatment of female firefighters. Miami Beach firefighter Marlenis Smart won an award of $700,000 in 2010 after finding her bathing suit splattered with semen and hidden in a locker and her bra hanging in the firehouse bay. She also reported being called a "stupid bitch" to her face. According to Jeanne Pashalek, past president of the International Association of Women in Fire and Emergency Services, "It is 2012, but we still have a lot of issues out there. It ranges from verbal abuse to physical assault to rape" (Bryan, 2012). The consequences of harassment and discrimination of women firefighters is though women enter the field, they leave after a short time.

The Firefighter Workforce and Blue-Collar Occupations

Women in the fire service face two major obstacles from the very beginning of their careers: (1) occupational segregation followed by (2) upward mobility issues once inside the profession. Historically, firefighting has been characterized as men's work. Such gendered occupational arrangements, particularly in a blue-collar profession, impedes the progress of women entering and advancing within the fire service ranks. Clearly, gender plays a significant role in the fire service not only in terms of entry, but also as an influence on occupational mobility once women enter the profession. In a nationwide survey, Floren (1980, 1981) found that two of the major obstacles most cited by female firefighters included negative attitudes from men, coupled with problems of acceptance. This same research also revealed female firefighters felt pressured to work harder than males and often received less difficult assignments. Thus, females find themselves disadvantaged with respect to promotional opportunities. According to a 2011 Bureau of Labor Statistics report, currently more than 70-percent of female firefighters are serving in non-supervisory roles.

Occupational Segregation

Occupational segregation is a "fact of the American work world" as described by Rosabeth Moss Kanter (1977a) in her groundbreaking work *Men and Women of the Corporation* (p. 16). Kanter studied a large corporation which had recently begun to integrate the ranks of its management by hiring women. Despite affirmative action policies, Kanter found that women remained concentrated in primarily female jobs and those who did advance into management positions failed to achieve equality with men. Furthermore, Kanter (1977a) found that female workers engaged in typical female work behavior. As a result, others within the organization deemed this as proof that women were not suited for traditionally male jobs.

Beller (1984) defined occupational segregation as "the fairly well established relationship between the sex differential in earnings and women's concentration in a small number of occupations" (p. 11). Despite the entrance of more women into the workforce since the 1960s, women still have not received a chance at some of the more powerful, higher-paying jobs. For example, female workers continue to be concentrated in occupations considered female such as teaching, nursing, and clerical work leading economist Hilda Kahne to write "women's work setting does not reflect the man's work world" (Kanter, 1977a, p. 16).

According to O'Farrell (1999), women's representation in blue-collar professions remained stable in the U.S. at around 18% through the 1980s and 90s. Evidence exists (Grube-Farrel, 1994) that women in male-dominated nontraditional, blue-collar occupations face significantly higher rates of gender bias. Such bias includes restriction from a full range

of work activities to denial of formal and informal training opportunities. Physical strength also remains important in most blue-collar professions and firefighting is very physical in nature, which has served as an assumption of female incompetence. Much blue-collar work is also quite dangerous and due to gendered assumptions, the more dangerous blue-collar jobs tend to be the ones with the most heavily skewed sex ratios (Browne, 2002).

Even today, blue-collar occupations such as firefighting remain non-traditional, male-dominated professions. The hostile culture of these occupations, or outright open discrimination they display, are some of the reasons why more women are not able to join or remain in the workforce in these professions. The mere presence of women in these occupations fosters everything from resentment, to skepticism, and various forms of harassment. Harassment often takes the form of hazing, and can escalate from verbal aggression to actual acts of violence. Such incidents are particularly heightened in occupations that pose great physical danger and rely on other workers for safety. This also includes occupations with high levels of social interaction during slow periods at work and ones having deeply rooted traditions (Floren, 1981).

Upward Mobility in Blue-collar Occupations

Upward mobility in work hierarchies (including blue-collar occupations), reflects gendered patterns as well (Yoder, 2001). In particular, women's efforts to move into leadership positions remains troubled with gendered stereotypes. Yoder (2001, p. 815) adds that we must never lose sight of the fact that leadership differs between men and women and that leadership does not take place in a "genderless vacuum."

A setting does not welcome women leaders if it is male-dominated, especially if the woman is a token; if the task is masculine in nature; if task completion is the only rewarded goal; and if hierarchy and power are stressed above everything else (Eagly & Johnson, 1990; Eagly & Karau, 1991). Because social status and power are linked to gender, the playing field for women is already uneven before they have a chance to act as leaders. In the fire service, women are seen as being too weak both physically and mentally to perform the job, so once promoted into officer positions their leadership abilities are immediately questioned (Craig & Jacobs, 1985, p. 62). Yoder (2001) suggests that the playing field can be leveled in one of two ways: either by enhancing women's status or by minimizing status differentials. The only way Yoder's suggested leveling strategies could occur in the fire service is if more women entered *and* advanced through the ranks. Until women have an opportunity to demonstrate their capabilities in leadership roles, challenges to their place in the fire service will likely continue.

Even when women do advance into leadership roles, they are disadvantaged when leading male-only groups. Clear empirical evidence indicates that when women operate in groups comprised of 85% or more men, they are more likely to experience the negative effects of tokenism (Kanter, 1977b). Tokens, according to Kanter (1977b) are "those treated as representatives of their category, as symbols rather than individuals" (p. 966). They are people identified by "ascribed characteristics (master statuses such as sex, race, religion, ethnic group, age, etc.) or other characteristics that carry with them a set of assumptions about culture, status, and behavior highly salient for majority category members" (p. 968). The consequences of tokenism may include added performance pressures, social isolation, and gender role stereotyping (Yoder,1991; Zimmer, 1998).

Despite women's entrée into the fire service beginning in the mid-1970s, women continue to maintain token status in the profession. As noted in the *2008 Report Card*, firefighting ranks in the lowest 11 percent of all occupations in terms of female employees. A large number of fire departments in this nation employ few or no women at all. In fact, not one career female firefighter has worked in more than half the nation's departments (Hulett et al., 2008). As a result of occupational segregation and tokenism, barriers to upward mobility continue to hinder women in pursuit of opportunities in the fire service.

Significance of the Research

Women first entered the fire service in a career capacity nearly 40 years ago, yet the number of women serving has not seen a significant increase. Likewise, even fewer women manage to advance through the ranks to hold administrative positions such as chief of a department. Though the barriers faced by women in the profession are great, strategies are being used to overcome them.

Given the clear, historic pattern of occupational segregation within the fire services, how do women successfully move upward in the profession? Extant literature specific to women's occupational mobility in the fire services remains minimal. Literature does exist for other similar occupations such as law enforcement, emergency medical services, and the military but even this is somewhat limited in scope (see Jurik, 1985; Hunt, 1990; Boyce & Herd, 2003; Boldry et al., 2001). The review of this literature indicates that women in these paramilitary-based professions face similar barriers, though the fire service remains the one profession that has failed to fully accept a woman's place within it.

This dissertation addresses a significant gap in the empirical literature by examining how women have successfully advanced through the ranks in the fire service given their marginalization in the service as a result of occupational segregation and mobility. The two main research questions at the foundation of this study are: 1) What obstacles do women perceive in establishing a long-term career in the fire service? and 2) What strategies do women follow to adapt to and succeed within a historically segregated occupation, namely the fire service? The findings of this research through the quantitation analysis of those two questions furthers existing literature to help explain the challenges unique to this profession. And finally, this research addresses implications for policy and practice for further advancement of women in the fire service.

CHAPTER II

LITERATURE REVIEW

Limited literature exists on women in the fire service. One notable exception is Carol Chetkovich's ethnography *Real Heat* (1997; see also Chetkovich, 2004), which described the struggles of female and minority recruits as they attempted to gain acceptance by their fellow firefighters. Chetkovich captured Oakland Fire Department Recruit Class 1-91's induction into the fire service, beginning with the class's participation in the fire academy through transition to shift during an 18-month probationary period. Her research provided an outsider's look at the fire service and the barriers still in place today that foster occupational segregation within the fire service. Despite her outsider status, Chetkovich painted a very vivid and accurate picture of what a recruit faces even today. So steeped in tradition and slow to change, the fire service continues to deal with the many issues Chetkovich brought to life in *Real Heat.*

In order to understand how women may experience upward mobility (or the lack thereof) in the fire service, one can look to relevant literature from other male-dominated occupations. This existing body of literature includes other first responders (particularly police), women in the military, and occupational segregation within other historically

male-dominated professions. Accordingly, this chapter is organized around these general occupational categories, with attention given first to firefighting and related occupations in policing, emergency medical services (EMS), and military work. Within each of these categories, certain concepts reveal the obstacles that women have faced. As this chapter progresses, the literature review will address additional concepts relevant to the research questions to include but not be limited to: tokenism, role conflict, glass ceilings and walls, upward mobility, and organizational culture.

This research examined the challenges faced by women in the fire service, and also identified how women overcame these obstacles while advancing through the ranks. Therefore, this literature review provides a conceptual framework for understanding women's advancement for upward mobility in the fire service and discusses the strategies used to overcome barriers impeding their movement through the ranks. Advancement through the ranks, or lack thereof, can be explained by four major theories addressed later in this chapter.

Women as First Responders

The term "first responder" can take on a number of meanings depending on the context used. Sawyer et al. (2004), delimits the occupation of first responders to "members of organizations and agencies such as emergency medical services; fire, rescue, and hazardous material response teams; law enforcement agencies; and the military" (p. 62) First responders are the first dispatched to emergencies and possess specialized training and skills necessary to mitigate the situation. The definition used by the federal government in the *First Responders Fighting Terrorism Protection Act of*

2009 provides an accurate description of first responders as used in this study. According to the *Act*, the term 'first responder' means any Federal, State, or local law enforcement agent, prosecution agent, border agent, immigration agent, transportation security agent, fire fighter, or emergency medical service provider, including:

> (A) any agent of the Department of Justice, the Office of the Director of National Intelligence and constituent agencies, the Department of Homeland Security, the United States Capitol Police, the Park Police, and the Intelligence and Criminal Investigation Divisions of each military department;
>
> (B) a State or Commonwealth attorney, an officer or agent of a State police department, an agent of a State Bureau of Investigation, an agent of any State Parks Commission police, State and federalized National Guard personnel, and any uniformed officer of Wildlife Fish and Game Commissions; and
>
> (C) a county or municipal district attorney, an agent of a county sheriff's department or municipal police department, an agent or officer of a county or municipal fire department, volunteer fire departments under contract with a State, county or municipality, or a county or municipal emergency service department.

For the purpose of this research, the discussion of first responders will be limited to those serving in the capacity of firefighters, law enforcement, emergency medical service and military personnel. One reason is that literature is not available for many other levels of responders (state and federal). More importantly, the term is bounded because of the similarities displayed among the public safety professions. Such

similarities include the fact they are predominantly male-dominated, paramilitary structures that generate blue-collar occupations. Women serve in all of the roles of first responders though in varying numbers. Despite advances in the workforce, women continue to contest the issues of occupational segregation and mobility in first responder professions. Rosell et. al (1995) found that women have encountered negative reactions and harassment among blue-collar occupations, including law enforcement, corrections, and the military. Male resentment ranges from subtle discriminations in job assignments, performance evaluations, and promotions to overt hostile treatment (p. 339).

Women in the Fire Service

Despite the fact that the fire service is more than 250 years old, women did not join the ranks of career departments until 1974. Women comprise slightly more than 4% (or approximately 11,000) of the 350,000 career firefighters in the U.S. as of 2013. The most recent study on women in the fire service (*Report Card*, 2008) notes tens of thousands of women may be interested in the career and are capable of serving. However, fire departments are not hiring women or they are leaving the ranks of the fire service altogether.

Over time, recommendations to increase the number of women in the profession were prompted by organizations such as the International Association of Women in Fire and Emergency Services. Such recommendations included having departments invest more time and resources into recruiting women and more effective means of recruiting women. As suggested by Hulett et al. (2008), the fact that departments often have more

applicants than they can hire should not deter them from continuing to seek qualified women.

A second significant aspect in recruiting is the fact that personal relationships are important. Introduction to the fire service often comes through family members or friends with ties to the profession. For males, the fire service is inter-generational, with fathers passing down the occupation to their sons. Women often hear about hiring through family and friends and some report being inadvertently recruited when their husbands or brothers were recruited (Hulett et al., 2008; Chetkovich, 1997). Therefore, if women are not "in the loop" so to speak, they will not be afforded opportunities to even consider applying for a position.

A third obstacle women face entering the fire service is the testing process used to assess physical abilities. Many departments administer the CPAT (Candidate Physical Abilities Test) which is a standardized test or develop a physical assessment of their own. It is true that firefighters need strength, stamina, and agility to perform fire and rescue duties safely and effectively, but the pass rates for women are often significantly lower than for men for a number of reasons. These reasons can include the tests themselves (e.g., validity, reliability, job relatedness); time of administration (enough notice for preparation); and most significantly, preparation by the candidates. Studies show that pass rates for both men and women are strongly influenced by whether candidates train prior to being tested. Departments with established preparation programs have reported higher pass rates. Moreover, those seeking to increase the number of female applicants make physical training a part of the recruitment and screening process (Hulett et al., 2008).

Women in Law Enforcement/Corrections

Research on law enforcement reports a similar history as that of the fire service, though women made entrée significantly sooner. According to the *National Center for Women in Policing*, the 1950's saw a marked increase in the number of women officers. From 1960 to 1980, the percentage of women in police agencies doubled and the greater numbers brought greater opportunities and challenges. From the 70's into the 90's women in law enforcement agencies have worked for an equal role in all facets of policing: on patrol, in command positions, and in promoting and recruiting officers. Nonetheless, police work remains a gendered occupation with institutionalized patterns of male-dominant hierarchies, gender segregation, and exclusion that female officers often experience (Garcia, 2003; Martin, 1996; and Charles, 1981).

As police officers, women are expected to display masculine behaviors while interacting with fellow officers and peers while at the same time displaying some degree of feminine behavior. As Martin (1996) explains in "doing gender on the job women police continuously must decide when and how to act like a cop and when to act like a lady" (p. 1).

One of the main arguments against allowing women to become police officers is an assumption of not having the physical strength. This same argument is the basis for not accepting women in the fire service (Charles, 1981). Women attribute the resistance experienced at work to the biased attitudes and behavior of male officers and supervisors (Jurik, 1985; Charles, 1981). Other obstacles faced by those seeking a career in law enforcement or corrections include negative attitudes towards women in beliefs about

their abilities (Horne, 1980; Marshall, 1973) and suitable positions for women with little to no improvement over time (Marshall, 1973). Despite changes in the nature of policing and the status of women, many male officers continue to believe that women cannot handle the job physically or emotionally and oppose their presence on patrol (Charles, 1981; Martin, 1996).

Indeed, women entering male-dominated professions have encountered negative reactions and harassment in many blue-collar sex-segregated workplaces including law enforcement, corrections, and the military. Male resentment can facilitate subtle job discrimination in job assignments, performance evaluations, and promotions including overt hostile treatment involving sexual harassment (Rosell et al., 1995). Beyond the negative attitudes of men there exists a work culture (much like that of the fire service) that is characterized by drinking, crude jokes, and sexism which demands that women tolerate such actions in order to achieve even a limited level of social acceptance (Young, 1991, p. 193).

Not surprisingly, recruitment of women into policing has been slow and retention has been difficult (National Center for Women and Policing 2001a). Like the fire service, consent decrees issued by the courts as a direct result of lawsuits opened the door for many women to enter policing, but keeping them is another issue. Martin (1989) found that policewomen have a higher turnover rate than policemen. Although this has not resulted in women abandoning the field entirely, consent decrees have continued the practice of segregating women into stigmatized assignments or specialties. The National Center for Women & Policing (2001a) also claims that an increased recruitment of women into policing will ultimately improve response to domestic violence.

Women in Emergency Medical Services (EMS)

Limited literature on emergency medical services exists as it relates to women serving in the profession (see Russ-Eft et al., 2008; Gonsoulin & Palmer, 1998). Emergency Medical Technicians (EMTs) are a critical component of pre-hospital medical care and emergency medical services. Despite the fact that the allied health professions such as nursing, medical assisting, etc. are largely comprised of females (93%), just 29% of all EMTs are female according to the report *EMS Workforce for the 21st Century: A National Assessment* (2005). Even though this may appear to be a low number in relation to health profession, it is quite high compared to the fact that females comprise just 4% of the fire service and 14% of law enforcement. The U.S. currently has 17,000 ambulance services and 815,000 registered EMTs, and while EMS is increasing in numbers, its diversity is not. White males continue to make up the majority of the EMS workforce.

Women in the Military

Like the fire service and law enforcement, the military remains a masculine institution. In the military as a whole, just 14% of the total force is female and only 2% of the officers at the highest levels are female despite the inclusion of women into the service academies beginning in 1976. On January 24, 2013, U.S. Secretary of Defense Leon Panetta announced the U.S. military would be lifting a ban on women serving in combat roles in the U.S. military, a monumental move toward gender rights that could ultimately change the face of war. While some jobs will remain closed to women, more than 200 jobs previously unavailable will be open to qualified women. Panetta went on record stating: “The department’s goal in rescinding the rule is to ensure that the mission

is met with the best-qualified and most-capable people, regardless of gender" (Llana & Eulich, 2013, para. 7).

According to gender stereotypes, men and women differ on a number of psychological and physical dimensions that are relevant to military performance. Beliefs include that men make decisions more easily and are more independent, self-confident, competitive, and leader-like than the average women. Women remain gender-stereotyped as more gentle, kind, helpful, and emotionally expressive than men. The beliefs about women are in stark contrast to the attributes needed to serve as a successful soldier. Hostility towards women in military settings continues to exist and is evident among cadets in military training (Boldry et al., 2001).

The armed forces also have their roots in time-honored masculine traditions. Uniforms, rituals, and a command structure are designed to transform boys into men and these traditions and practices frequently clash with effective female assimilation into the service. As a whole, men in the armed forces have resisted and been hostile towards attempts at gender integration. Scholars believe that men have resisted this integration because they find it threatening (Segal, 1995; Shields, 1999; Boldry et al., 2001). Women who succeed in the military break down the male traditions that have been long established (Shields, 1999).

One of the greatest obstacles faced by women in the military stems from a hostile and abusive work environment. Of particular concern is sexual harassment and instances of rape, which have garnered the attention of the media and Congress. Defense Secretary Chuck Hagel responded by saying: "This department may be nearing a stage where the

frequency of this crime and that there is a perception that there is tolerance of it could very well undermine our ability to effectively carry out the mission and to recruit and retain the good people we need" (Whitlock, 2013, para. 12). A recent report released by the Pentagon estimates the number of military personnel victimized by sexual assault and related crimes has surged more than 35 percent over the past two years (Whitlock, 2013, para.1).

The release of the report prompted President Obama to warn the Defense Department that its leaders are to take tougher legal action against offenders and redouble efforts to prevent such crimes. Senator Dianne Feinstein questioned the ability of the status quo military command structure to maintain a zero tolerance on this issue and called for a separate judicial process (Sullivan, 2013).

The military has found some strategies to make integration work, such as creating a more supportive environment and reducing tensions between the sexes. According to Shields (1988), "time, increased numbers of women, better matching of physical capabilities with jobs, changing expectations of youth cohorts, a greater sense of patriotism, more egalitarian attitudes towards women's role in society, and explicit military directives dealing with sexual harassment" (p. 108).

Barriers

To better understand barriers impeding women's advancement in the fire service, it is important to first understand barriers faced by women in general, in all types of employment settings. Gender impacts the occupational mobility of women and is evidenced in the existing literature (Wood & Lindorff, 2001; Yoder, 2001; Wilson,

1998). Furthermore, these barriers, which may be attitudinal, behavioral, and structural in nature, may continue to hinder career advancement for many women (Wood & Lindorff 2001). As such, one needs to understand contrasting perspectives on barriers to occupational mobility as well as the main concepts that characterize those barriers, i.e. tokenism, role conflict, glass barriers, and organizational culture. Appendix E depicts the key barriers impeding women's advancement in the fire service along with the key authors and concepts developed over time.

Perspectives on Barriers

Four major theoretical perspectives explain why gendered barriers develop. These include (1) the gender-centered perspective, (2) the organizational structure perspective, (3) masculinity theory and (4) social role theory.

The Gender-Centered Perspective

Fagenson (1990) has written extensively on theoretical perspectives in the field of women in management that predict the sex role identities of individuals in organizations (1985, 1986). The gender-centered perspective poses that intrinsic differences between men and women account for the difference in the number of men and women in senior management. Social identity forms at a very young age and differing genders fit different roles in society. Society believes men to have high masculine traits such as aggression, independence, and domination, which are all considered traits of a successful manager (Wood & Lindorff, 2001; Schein, 1973; Mattis, 1995). These presumed differences, according to Powell and Butterfield (2002), lead to a difference in aspirations between

genders, therefore individuals with a high concentration of masculine traits will aspire to attain management positions.

Kanter studied men and women in the corporate world and their reaction to leadership, which served as the basis for her book *Men and Women of the Corporation* (1977a). She argues these masculine traits have been legitimized over time stating:

> This masculine ethic elevates the traits assumed to belong to some men to necessities for effective management: a tough minded approach to problems; analytic abilities to abstract and plan; a capacity to set aside personal, emotional considerations in the interest of task accomplishment; and a cognitive superiority in problem solving and decision making. (p. 22-23)

The masculine traits identified by Kanter have led women to be stereotyped in the workplace.

Women are often segregated in organizations based on stereotypes (Blau, Ferber, & Winkler, 1998). Discrimination in job assignments that lead to future promotions is the number one barrier for women seeking management positions according to Dobbins, Cardy & Truxillo (1988). This discrimination is likely to also exclude women from access to informal networks of support and mentoring that would otherwise help their advancement (Roos & Reskin, 1984). By virtue of their low numbers, women are at a greater risk of experiencing workplace discrimination, including sexual harassment (Bergmann, 1986). In addition, women who represent a minority within non-traditional occupations such as the fire service and law enforcement are at an increased risk of being harassed (Gutek, Cohen & Konrad, 1990).

Examples of women considering careers in public office appear in studies conducted by Fox and Lawless (2003; 2004). Their research looks at some of the ways in which gender may interact with a woman's initial decision to run for office and findings indicate that "broad patterns of sex-role socialization continue to impede women from full inclusion in the electoral process" (Fox and Lawless, p. 19). They also attribute fewer women in the electorate to the fact that women and men tend to view their family responsibilities differently. Despite the decline of the historical norm of men seen as providers and women as caretakers of the home, stereotypes associated with these roles still exists (p. 21).

Organizational Structure Perspective

Gender continues as a theme in the organizational structure perspective further developed by Kanter (1977a). This perspective holds that there are two types of situations in organizations: advantageous ones and disadvantageous ones. The organizational structure perspective states that organization factors such as holding positions of limited power affect women's behavior and attitudes. These behavioral differences reduce women's chances of career advancement (Wood & Lindorff, 2001). Social and institutional systems embedded in gendered organizations influence women's advancement opportunities (Omar & Davidson, 2001). When gender traits required by leaders are masculine in nature and linked to specific occupations, the result can be a devaluation of female leaders within that occupation (Boldry et al., 2001). Thus, existing organizational culture reinforces differing occupations, which may be male or female in nature (Powell & Graves, 2003).

Many researchers believe organizations make it easier for men to acquire power than women. As Mann (1995, p. 9) points out: “where women are, power is not.” Still (1994) maintains that enough evidence exists to prove that organizational culture impedes women’s progress into senior management because of the gender bias. This is largely true because when organizations and management systems were first formed, only men were in the workforce (Mann, 1995). This led Kanter (1977a) to argue that such structures feed into a gender-biased structure. Despite the fact that women joined the workforce and management and that anti-discrimination, affirmative action, and equal opportunity laws appeared, Still (1994) notes that “there has been little fundamental change to the underlying culture” (p. 4).

Masculinity Theory

Masculinity theory, more commonly referred to as hegemonic masculinity, is a concept that surfaced in the 1980s and has considerably influenced the ways many think about men, gender, and social hierarchy in general (Connell & Messerschmidt, 2005). Three notable pieces of literature detailing the emerging concept of hegemonic masculinity included reports from a field study of social inequality in Australian high schools (Kessler et al., 1982); Connell’s (1983) work on the making of masculinities and the experience of men’s bodies; and in a debate over the role of men in labor politics in Australia (Connell, 1982).

Connell (2000) defines hegemonic masculinity as the culturally exalted form of masculinity, which guarantees the dominant position of men. According to Simpson (2004), early work on gender and organizations has traditionally assumed men and

masculinity to be the normative standard case against which difference (i.e. women) has been measured (p. 4). Promoting and sustaining the sexual division of labor and the social definition of task as either 'men's work' or 'women's work' is largely dependent upon the ideologies and discourses of gender (Simpson, 2004).

Notions of work, as suggested by Morgan (1992), are central to masculine identities and organizations exist as major sites for the construction and reconstruction of 'what it means to be a man' (Simpson, 2004, p. 6). It is these notions of work roles which cause gender imbalance creating heightened career barriers and limit career progress. Work roles also help create a hostile work environment for women in traditionally male-oriented professions such as the fire service (Simpson, 1997, 2000).

In the public services, hegemonic masculinity may be encouraged as early as recruit training. Prokos and Padavic (2002) describe a cultural practice— the creation of masculinity in police academy training that may be implicated in a structural outcome— the low representation of women on U.S. police forces. Likewise, this same cultural practice may be transferred to similar trainings completed by fire service recruits and military personnel alike. Their research notes that academy training teaches male and female recruits that masculinity is an essential requirement of policing and that women do not belong. Therefore, by watching and learning from instructors and each other, male students developed a masculinity that excluded female students and exaggerated the differences between male and female recruits while also denigrating women in general (p. 439).

Social Role Theory

Social psychologist Alice Eagly is often recognized as the founder of social role theory. Social role theory, according to Eagly (1987), suggests that almost all behavioral differences we know between males and females is the result of cultural stereotypes about gender—that is how men and women are *supposed* to act. According to social role theory, women and men confirm these gender stereotypes in a large part because the different roles they play place different social demands upon them (Vogel et al., 2003).

Women are believed to possess communal type beliefs and behaviors associated with femininity such as caring, nurturing, and sensitivity; whereas men possess beliefs and behaviors more closely associated with ambition, assertion, control, and independence. These stereotypes attached to gender roles impact career progress in a number of ways.

For example, some empirical evidence exists that women may perceive they have fewer opportunities than men for advancement to senior levels of management. Rosen et al. (1989) determined that women often report that the lack of career advancement opportunities have created problems in their careers; while women also perceive they have fewer promotional opportunities than men into senior management positions (Parker & Fagenson, 1994).

Social role theory also predicts that women often work in groups, influencing them to work in a nurturing, participative environment. Women who achieve success in their careers often attribute this to their ability to network and contribute in a supportive environment among their peers. Men, on the other hand, act assertively, ambitiously, and

independently and may attribute their success to these factors. To support this contention, Pringle and Goyma (1989) found that twice as many female managers as male colleagues report mentors, enthusiasm, and luck as contributing to their career success. Additionally, women also believe that career encouragement makes a positive impact on their career advancement, whereas men attribute their success simply to education and work experience (Tharenou et al., 1994). Finally, both men and women believe that gender is a factor in hiring decisions and other personnel matters as reported by Hede and Dingsdad (1994).

Finally, social role theory also suggests that women are less likely than men to aspire to senior management positions. Empirical research supports that managerial positions are seen as male dominated positions within an organization (e.g. Schein, 1994; Orser, 1994; Schein & Mueller, 1992). Research also shows that women are more likely to accept a job rather than pursue a career (Still, 1994) and are less likely than men to aspire to management positions (Hede & Ralston 1993).

Differences in social behavior can also adversely impact the advancement of women in management positions. Eagly and Wood (1991) detail nine specific differences between men and women in social behavior which include the following:

1. Women are better at sending and receiving messages non-verbally.
2. Women conform to group pressures more than men.
3. Women act more friendly and agree more with other group members in small groups.
4. Men are more strictly task-oriented in work groups.

5. All female groups typically perform better than all male groups.
6. Men are more likely to emerge as leaders in initially leaderless groups.
7. Men are more helpful in short-term interactions with strangers.
8. Men behave more aggressively to others than women, particularly when the aggression brings about physical harm or pain.
9. Women report more life satisfaction and happiness than men.

Organizations can balance power in favor of men through a number of different means, including encouraging workers to spend long days at the office and scheduling meetings at inaccessible times, for example breakfast— making it difficult for women who have families. Likewise, having inadequate or no childcare facilities or options can further isolate women with families. Socially, women may also face balance of power issues if "informal" meetings or conversation occurs in places inaccessible to women, e.g. men's restrooms or private clubs, if the conversations involve derogatory language or jokes, or if discussions include topics that a woman may not easily share in such as football. Finally, discriminating against women in selection creates and enforces a male majority while maintaining the status quo through internal promotion—a male-dominated workforce reinforces the bias (Mann, 1995).

The four major theories discussed earlier help explain the barriers faced by women in the fire service. However, it is also important to conceptualize these barriers so as to better understand the role they play in undermining advancement opportunities.

Conceptualizing Barriers

In this section, concepts that characterize the experience of barriers including tokenism, occupational segregation, glass barriers, occupational mobility, and organizational culture (see Appendix F) are addressed. In doing so, a framework is presented supporting the theories presented earlier in this chapter.

Tokenism

Kanter's (1977a) concept of tokenism and subsequent gender-based research often reflects back on her work and definition. Tokenism appears numerous times in literature addressing occupational segregation in the fire service, law enforcement, and the military (Rosell et al., 1995; Yoder & Aniakudo, 1997; Martin, 1996; Jurik,1985; Hunt, 1990; Silvestri, 2006; Grube-Farrell, 2002; Boldry et al., 2001; Boyce & Heard, 2003). According to Kanter (1977b), tokens are treated as as symbols rather than individuals and are placed into categories. They are people identified by specific characteristics such as sex, race, gender or age.

Female firefighters often find themselves described as "tokens" due to court decrees and in meeting affirmative action hiring practices. Kanter notes that token women were more likely to have their mistakes amplified, be isolated as a social out-group, and be encapsulated into roles undermining their status (1977a). Similar studies by Ott (1989), Yoder & McDonald (1998), and Yoder et al. (1983) further support Kanter's findings. Such general work on tokenism reflects well the anecdotal experience that female firefighters report when they try to enter a male-dominated workplace.

According to Cohn (2000), the "introduction of women into a male-dominated workforce threatens homophile and creates the potential for social disharmony. Men view work as a means to express their masculinity, whereas home and childcare express femininity" (p. 105). Chetkovich (1997) adds that men are concerned about preserving their all male environments in order to preserve their 'cultural ideal of masculinity' (p. 188).

Cohn (2000) notes that when women enter a male-dominated workspace, talk about sports increases and sexual jokes and comments become more overt. Derogatory comments about women and minorities become commonplace in conversation. Women can either react by avoiding the group or play along with it placing themselves in a subordinate position within a prescribed hierarchy (p. 100). Such behaviors can make a woman feel like an outsider and in turn, lead to occupational segregation as women do not feel accepted or welcome in their profession.

Occupational Segregation

Occupational segregation is the "historical concentration of women in few occupations, including clerical/secretarial work, teaching, nursing, sales, and domestic work" (Grube-Farrell, 2002, p. 334). After World War II, women began seeking entry to predominately male professions and occupations. Slight gains were made in blue-collar occupations, however, women still experience difficulty gaining entrée into areas such as construction, mechanical work, and in firefighting (Blau et al., 1998). Women remain underrepresented in the uniformed services (military, police, firefighting) as men

continue to view these occupations as a private resources or, particularly in the case of firefighting and police work, a "family business" (Grube-Farrell, 2002, p. 336).

Occupational segregation reflects acute levels of gender inequality in the fire service. Women who enter male-dominated professions report feeling harassed and isolated which may impact job performance (Kanter, 1977a) and diminish job retention (Jacobs, 1989). Work devaluation reduces gender-neutral opportunities for upward mobility and advancement (Cohen & Huffman, 2003; Reskin & Hartmann, 1986; Moller & Li, 2009) and can impede women from rising through the ranks of the fire service. For example, social closure processes describe the "means by which men resist attempts at job integration" (Maume, 1999, p. 486). Administrative rules and requirements based on skills and experience allow men to effectively limit the pool of women from competing for some of the better jobs in an organization as part of the social closure process.

Kanter (1977a) contends that social closure leads to short promotional ladders for women with few available supervisory opportunities. Furthermore, work efforts of women in the fire service are often devalued and ignored causing their careers to lag behind their male counterparts (Maume, 1999; *Report Card,* 2008). A number of social closure processes are embedded in the fire service.

Social closure processes in the fire service may include the exclusion of women from certain specialized teams such as hazardous materials, structural collapse, confined spaces, and water rescue. For example, women may be discouraged from becoming members of a structural collapse team if perceived they lack the upper body strength necessary for rescues requiring strong upper body strength. Likewise, as the military

opens combat positions to women, some special teams such as the Navy SEALS and the Army's Special Forces will remain closed to women due to the physical requirements of the assignments. A recent example of the ever-changing access to jobs by women involves the military's lift of the combat ban for women, which will open hundreds more jobs than available before. In the military, serving in combat positions such as the infantry remains critical to career advancement and the changes are certain to open more opportunities for women to advance. Women have long argued that by denying them such opportunities the military has unfairly held them back (Bumiller & Shanker, 2013). Similarly, the denial of such opportunities in the fire service continues to limit occupational mobility or advancement through the ranks.

Occupational Mobility

Occupational mobility refers to the "movement of an occupational group itself, or of an individual member of an occupation, or of an occupational vacancy, through the stratification system of social space" (Marshall, 1998, p. 523). Occupational mobility in the fire service is the process of rising through the ranks, promoting from one position to another within a paramilitary workforce. Occupational mobility within the fire service in general remains limited. Each department has its own rank structure and guides advancement through the ranks with promotional matrices. Promotional matrices contain all of the requirements needed in order for someone to become eligible for promotion. Such requirements may include years of experience, certifications and training, and education. Women's representation at advanced ranks in the fire service is limited. Although typically just three to five years of experience is required before firefighters can begin to apply for promotions, the *Report Card* (2008) noted "that on average 10 years

elapsed between the women at the entry-level and at any higher rank" (p. 9) Other impediments often linked to mobility include glass barriers, including glass ceilings and glass walls based on a department's organizational structure.

Glass Barriers

The notion of glass barriers has evolved over the past several decades to include notions of the glass ceiling and glass wall. Mainstream media helped coin the term glass ceiling. In an article by Carol Hymowitz and Timothy Schellhardt published in the March 24, 1986 edition of the *Wall Street Journal*, the term referred to invisible barriers that impede the career advancement of women in the American workforce. In a 1991 report released by the U.S. Department of Labor (*Report on the Glass Ceiling Initiative*), the Department defined glass ceiling as "those artificial barriers based on attitudinal or organizational bias that prevent qualified individuals from advancing upward in their organization into management-level positions" (p. 5). A special commission, the *Glass Ceiling Commission* (1991-1996) studied these barriers as applied not only to women but minorities as well.

Bell et al. (2002) have suggested, the barriers resulting in such disparities are often subtle. Barriers include gender stereotypes, lack of opportunities for women to gain necessary work experience to advance, and a lack of top management commitment to gender equality and equal employment opportunities. Considering the glass ceiling is an "invisible" barrier, legislation is highly unlikely to eradicate it. Affirmative action, consent decrees, and even numerous lawsuits have failed to eliminate the glass ceiling. The Federal Glass Ceiling Commission report (1997) suggests that informal networking

and mentoring are some of the best means of increasing the number of women in managerial positions.

Much like mentoring and informal networking, Meyerson and Fletcher (1999) believe that the glass ceiling in the new millennium will only be shattered through a strategy that employs small wins. Most effective they say are: "incremental changes aimed at biases so entrenched in the system that they're not even noticed until they're gone" (p. 128). According to their research, the small-wins strategy is a powerful way of chipping away at the barriers that hold women back without sparking a fury that scares people into resistance. While glass ceilings form one type of obstacle for female firefighters, glass walls are also found in the fire service.

Glass walls is a term used to describe the existence of obstacles that deter women's access to particular types of departments and the concentration of women in certain types of jobs or departments (Miller et al., 1999). Glass walls can also refer to the gender differences in roles and assignments at the same rank. Kerr, Miller, and Reid (2002) examined glass walls by looking at occupational segregation in U.S. state bureaucracies. They stated that glass walls are likely to persist when organizational culture inhibits change or when others do not value the skills necessary to perform certain jobs.

In the case of the fire service, glass walls often leaves higher-ranking women serving in the limited roles of prevention and inspections as opposed to operations. In doing so, perceptions of women as full members of the organization as well as their prospects for promotion are limited (*Report Card*, 2008). In effect, it sends a message to

others that women are not suited for the work required in operations and that they belong in roles where clerical skills and teaching skills are prevalent. Organizational culture is largely to blame for the status of women in the fire service today.

Organizational Culture

Pettigrew (1979) was the first to introduce the term organizational culture based on an anthropological paradigm. In so doing, he based his concept of culture on a family of concepts that consisted of symbol, language, ideology, belief, ritual, and myth. Symbols, according to Pettigrew, were derived from anthropology and represented the artifacts of culture from language and relationships to cultural objects and rituals. These symbols functioned as cultural representations that stood "ambiguously for a multiplicity of meanings, evoke emotions, and impel men to action" (p. 574).

As Schein (1990) notes, "organizational culture lies at the intersection of several social sciences including anthropology, sociology, social psychology, and organizational behavior" (p. 109). Thus, organizational culture as a concept has a fairly recent origin. Following Pettigrew's work, textbooks by Deal and Kennedy (1988), Ouchi (1981), and Peters and Waterman (1982) spread the popularity of the concept.

Several accepted definitions of organizational culture appear in the literature, however, most recent research on culture cite Schein's (1987) definition or use a derivation of his work. Schein, a sociologist, includes the integration of new employees into his definition:

> Organizational culture is the pattern of basic assumptions which a given group has invented, discovered or developed in learning to cope with its problems of

> external adaptation and internal integration, which have worked well enough to be considered valid, and therefore to be taught to new members as the correct way to perceive, think and feel in relation to those problems…it is the assumptions which lie behind values and which determine the behavior patterns and the visible artifacts such as architecture, office layout, dress codes, and so on (1987, p. 383).

According to Schein (1990), the problem of defining organizational culture stems from the fact that the concept of organization is itself ambiguous. An organization must have enough stability and common history to allow a culture to form. Some organizations may not develop an overarching culture because of high turnover rates or because they lack a common history. Other organizations can have "strong" cultures because of a long established history or because they have shared intense experiences (e.g., the military and its combat units).

Fire Service "Culture"

The fire service maintains a culture that is deeply rooted in tradition. Firefighting is a fraternity of sorts and has a culture like no other. Firefighters literally spend one-third of their lives on duty with their firefighter family. The intense nature of the work, 24-hour shifts, and the need for teamwork are unique parts of the job. A firefighter must possess strength, courage, skill, and composure at all times. Trust in this business is paramount—one must be able to trust his or her crewmates and company officer because lives depend upon it (Chetkovich, 1997, p. 37). Firefighters also work in a paramilitary organization where aggressive performance and action on the fire ground is often the basis for acceptance into its culture (Rosell et al., 1995; Chetkovich, 1997).

An initiation process takes place for newcomers to the fire service regardless of gender, race, age, or experience. Hazing, practical jokes, and other acts of minor abuse (such as making the rookie clean the toilets every morning) remind the newcomer constantly that he or she is at the very bottom of the ladder (Moore & Kleiner, 2001). The fire service requires its members to constantly prove themselves both on the scene and in the firehouse. Fire service is truly is a way of life.

Ward and Winstanley (2006) point out that the fire service provides an opportunity for individuals to interact in two distinct ways. In the first context, firefighters draw upon high levels of interdependence and trust when fighting fires and handling emergency situations. Secondly, they have many opportunities for informal interaction and discourse to take place during their "downtime", in between calls for service (p. 203).

A typical fire station is more like a home than a place of business. In most instances there is a lounge area (often referred to as a day room) with a television and recliners for group seating, a common kitchen area with seating for the duty crew, officer's quarters and an office, restroom facilities, laundry facilities, and the bunkroom where the line firefighters sleep. Many stations also have equipment for physical fitness as well as recreation, which may include pool tables or basketball goals.

Additional elements noted earlier and referenced by Schein (1987, p. 383) include architecture, office layout, and dress codes. Most firehouses today are designed and built as they were some 200 years ago but with more modern construction materials. Many still maintain the fireman's pole if more than one story in height and continue to make the

most out of space by utilizing traditional open bunkrooms with little privacy. Bunkrooms are often shared by both male and female firefighters with private rooms reserved for officers. Restrooms are usually gender-specific; however, older stations may still have unisex facilities allowing for single use at a time.

Most all areas of a station are considered common areas with access by all except for the office designated for the station's company officer or other administrative personnel. While dress codes vary, the fire service remains paramilitary in nature and formal (Class A) uniforms are worn for formal events such as funerals, presentations, etc. and consist of jackets, caps, shirts, ties, dress slacks, and dress shoes. Duty uniforms (Class B) consist of work pants, work boots, and a collared shirt, which are worn at the beginning and end of the shift at roll call. Finally, once the day is underway, personnel transition to a Class C uniform consisting of a t-shirt or polo, with duty pants and boots.

Based on the extant literature, appropriate research questions and related hypotheses for a study of women firefighters include:

Research Questions and Hypotheses

1. What obstacles do women perceive in establishing a long-term career in the fire service?

2. What strategies do women follow to adapt to and succeed within a historically segregated occupation, namely the fire service?

H1: Women who move through the ranks at slower rates are more likely to report sexual harassment.

H2: Women who move through the ranks at slower rates are more likely to report sexual discrimination.

H3: Women who move through the ranks at slower rates are more likely to report having hit glass barriers.

H4: Women who move through the ranks at slower rates are more likely to report organizational culture as a factor.

H5: Women who moved upward through the ranks are more likely to have benefitted from legal action (affirmative action, consent decrees, lawsuits).

H6: Women who moved upward through the ranks are more likely to have been afforded equal training opportunities.

H7: Women who moved upward through the ranks are more likely to have benefitted from mentoring relationships.

CHAPTER III

METHODOLOGY AND RESEARCH APPROACH

Barriers women face in an attempt to enter the fire service dominate the focus of past research (Hulett et al., 2008; Chetkovich, 1997, 2004). This research (*National Report Card*, 2008;Wang & Kleiner, 2001; Rosell et al., 1995; Ward & Winstanley, *2006*; Chetkovich, 1997) identified both the obstacles and strategies to overcome barriers, yet failed to address why some women successfully advance through the ranks while others fail to advance or leave the fire service altogether. This study identifies the types of strategies female firefighters have successfully used for advancing through the ranks as well as how they applied these strategies.

In order to address the gap in extant literature, this study attempts to answer two primary research questions:

1. What obstacles do women perceive in establishing a long-term career in the fire service?

2. What strategies do women follow to adapt to and succeed within a historically segregated occupation, namely the fire service?

A quantitative approach was taken for this research consisting of an online survey tool as the main source of data collection. The online survey was comprised of both closed and open-ended questions to record demographic data and to determine respondents' experiences as they related to discrimination, harassment, advancement opportunities, and related matters, such as training and mentoring (see Appendix C). Because of the dispersed geographical nature of this relatively small and targeted population, an online survey method was the most appropriate choice for data collection.

This researcher gained entrée to potential respondents via the general membership of the *International Association of Women in Fire and Emergency Services* (IAWFES), the largest organization comprised of women in the fire service. IAWFES is an interactive non-profit network providing education, support, and advocacy for women in the fire service. Current membership consists of approximately 600 members, 400 of whom are currently serving in the profession. The organization supports further research in the advancement of women in the fire service and has afforded research opportunities to many individuals through its membership. The organization approved the distribution of surveys to its membership in support of this researcher's study (see related email in Appendix B). Once approval from the Oklahoma State University's Institutional Review Board (IRB) was obtained (see Appendix A), the IAWFES's Association and Services Manager distributed the survey via the organization's e-mail distribution list and its monthly newsletter *FireWork*. The survey was available throughout the entire month of June (2013). The association sent weekly reminders to the membership to encourage completion of the survey which resulted in additional surveys being completed, albeit with an anticipated decline in completions over time.

This chapter describes the methods used to conduct the research by a discussion of the following areas: overview of quantitative research methods, IRB and ethical issues, sampling selection and procedures, and quantitative data protections.

Research Design and Methods

Quantitative Research

Quantitative research tests relevant theories through examining hypothesized relationships between specific variables (Creswell, 2009). By conceptualizing, operationalizing, and measuring concepts, quantitative analysis enables concepts (such as barriers to advancement) to be measured (indirectly) through variables. Accordingly, hypothesized relationships between the variables are then assessed using appropriate statistical analysis.

Quantitative research thus aims to find statistical patterns or trends in a population as a means to advance knowledge. Advantages for using quantitative methods are numerous including relatively quick data collection, more rapid data analysis via the use of quantitative software, resulting in the provision of precise, quantitative numerical data (Johnson & Onwuegbuzie, 2004).

In this study, female firefighter's upward mobility through the ranks served as the main dependent variable. A thorough review of relevant literature revealed several relevant concepts believed to explain upward mobility, which may include but not be limited to the following: (barriers) sexual harassment, sexual discrimination, glass barriers, organizational culture, (strategies) affirmative action, consent decrees, lawsuits, training, and mentoring. Appendix H details the dependent and independent variables in

this research. As described in more detail later and in Appendix H, these concepts can be operationalized through appropriate indicators that reveal the presence or absence of the concept. For example, the concept of sexual harassment has been studied by Fitzgerald and Shullman (1993) who inquired about a range of potentially harassing behaviors, posing more subjective questions about sexual harassment separately from questions about specific behaviors. Gefland et al. (1995) conceptualized sexual harassment as "a construct, with multivariate responses that are related" rather than as a simple event (p. 174). As such, this study took into account independent variables perceived to be related to sexual harassment as emanating from the extant literature.

IRB and Ethical Issues

Ethical considerations were addressed from the very beginning. Respondents were made aware of the purpose of the research and the types of questions they would be asked. A provision of confidentiality was presented along with the fact that they could choose to cease participation at any time without repercussions. When the prospective respondent accessed the on-line survey, she acknowledged consent. The following statement was included as provided in the online informed consent template from the Oklahoma State University Institutional Review Board: "If you choose to participate: Please, click NEXT if you choose to participate. By clicking NEXT, you are indicating that you freely and voluntarily and agree to participate in this study and you also acknowledge that you are at least 18 years of age. It is recommended that you print a copy of this consent page for your records before you begin the study by clicking below." The researcher met all Oklahoma State University IRB guidelines before proceeding with data collection. IRB approval and related consent forms can be found in Appendix A.

Due to the potentially sensitive nature of the research, the Oklahoma State University IRB closely evaluated the research proposal. One issue the IRB required to be addressed more specifically included the protection of respondents' identities. The IRB was fully aware of the uniqueness of the survey population and wanted to ensure identities of respondents would be fully protected. Anonymity was assured as IP addresses and other potentially identifying information were not collected.

A second IRB issue involved potentially sensitive subjects such as incidents of sexual harassment and sexual discrimination. Since such questions might possibly cause discomfort, respondents were informed they could skip questions or quit the survey at any point in the process. According to the survey results, some questions were skipped though no one quit the survey altogether.

Quantitative Sample Selection and Procedures

Since the population size for this research was relatively small, it required focus on a target population and resulted in a small sample size. Random sampling of fire departments across the U.S. would not capture the intended subjects based on the current number of women in the fire service. This researcher used a purposive sampling method in selecting respondents because the intent of the research focused on an intentional population specific to the research questions. The survey was made available to all members of the IAWFES (approx. n=600) via the organization's e-mail distribution list. The organization was selected as the primary distribution point for the survey because it is the largest professional organization of female fire service professionals.

Surveys

Respondents completed the surveys online via the provider *SurveyGizmo*. *SurveyGizmo* is a web-based software company giving researchers tools to create online surveys, questionnaires, and forms. The company provides affordable student accounts allowing for the capture and analysis of virtually any type of data essential for research.

Surveys are ideal instruments to assess knowledge, attitudes, and characteristics at the surface level. The online survey allowed for reaching a widespread geographical sample as the one proposed for this study. It was also cost efficient as it was distributed through an online provider. The data were directly imported to SPSS for further evaluation, which in turn allowed for more efficient handling and analysis of the data. Surveys were made available for 30 days following the request for participation. A follow-up reminder was sent weekly to assist response rates.

Response rates for online surveys are disputed in the literature and a number of studies specifically report and discuss response rates in Web based surveys, though much of the literature is somewhat dated (see Kay & Johnson, 1999; Crawford et al., 2001; Schaefer & Dillman, 1998). According to Schaefer and Dillman (1988), online surveys have failed to meet the response standard set by comparable mail techniques which average around 38%. The response rate for the survey distributed for this research project (38%) matched Dillman's suggested return rate of mail surveys. However, due to the fact the organization handled distribution via an email list serve, it is unknown if and how many may have been undeliverable due to bad emails or spam filters.

Schaefer and Dillman (1998) do suggest, however, ways in which the response to online surveys can be improved, including automated reminders to potential responders. In a review of online surveys conducted by Sheehan and McMillan (1999), they note that many researchers comment positively about the response rate and speed of online survey completion as compared to postal surveys. Reminders were sent on a weekly basis for four weeks as suggested by the existing literature and with each reminder a surge in responses occurred to reach the 38% response rate that was ultimately achieved.

Since a survey served as the main data collecting instrument, it was imperative to deliver a well-designed survey to gather the necessary data on the first attempt. According to Wolfer (2007), is important to keep several things in mind during the survey design. Researchers must be conscious of their audience and respondents need to feel their views are important to the researcher. The language of the question needs to fit the culture and expertise of the respondents and questions should not be worded in an overly academic manner or respondents may feel alienated. One should also avoid confusing or vague wording, biased questions, leading questions, and assuming prior knowledge on behalf of the respondents.

The survey was subject to two separate pilot test runs utilizing women in the fire service serving in both career and volunteer capacities. Pilot tests were run to ensure questions were appropriate and that they would capture the intended data. In the first run, two fellow graduate students (both female firefighters who have moved through the ranks successfully) reviewed and commented on the questions as written. They made several suggestions including making the questions more applicable to both volunteer and career firefighters, since both groups were potential respondents. The changes were accepted

and incorporated into the survey and a second pilot run was made. A slightly larger group comprised of six female firefighters of various ranks from both types of departments was used to finalize the survey before distribution.

For purposes of clarity, the survey required that all concepts be clearly defined for respondents in words that make sense to them. The definitions also had to reflect the same conceptual definitions used by the researcher. For example, extant literature presents some methodological problems in using surveys to assess the prevalence of sexual harassment. Arvey and Cavenaugh (1995) found that researchers use widely different definitions of sexual harassment in their survey methods. As a result, they argue that greater precision in the operational definition of sexual harassment needs to be established to make better sense out of such survey results.

As noted by LeCompte and Goetz (1982), reliability refers to the extent to which studies can be replicated and requires that a researcher using the same methods can obtain the same results as those of a prior study. To address the issues of reliability and validity for this study, this researcher adopted some survey strategies and questions from previous studies which have already proven to have some degree of reliability and validity (see Arvey & Cavanaugh, 1995; Gillespie & Leffler, 1987; Welsh, 1999; Glaser & Hacker, 1987; and Al-Alawi et al., 2007). Such studies have produced the leading literature in the areas of sexual discrimination and harassment and organizational culture and serve to support the reliability and validity of this research project.

Organizations and researchers have used surveys to estimate the number and percentages of women who perceive sexual harassment in various settings. Researchers

use widely different definitions of sexual harassment in their survey methods (Arvey & Cavenaugh, 1995). Others make similar note when they state "sexual harassment has proven difficult to research due to the lack of a commonly accepted definition and any standardized instrumentation that could provide comparable results across studies" (Fitzgerald et al., 1988, p. 192). Fitzgerald and Shullman (1993) stress the importance of having items written in behavioral terms with sufficient detail to ensure they are interpreted similarly. As a result, the survey created for this research did exactly that – based on the extant literature provided definitions to all concepts which could have broad definitions to preserve reliability and validity.

Nonetheless, a number of challenges exist in doing so. For example, greater precision in the operational definition of sexual harassment needs to be established to make better sense of survey results as suggested by Arvey and Cavenaugh (1995). As one strategy, they suggest including more behaviors and acts that parallel some of the legal definitions of sexual harassment (e.g., offensive notes, cartoons, pornography). This researcher included a number of parallel behaviors to include the ones previously mentioned in order to tap into the potential range of sexual harassment acts.

To deal with the complexity of the concept of sexual harassment, six suggestions were offered by Arvey and Cavenaugh (1995) in the design and use of surveys to capture sexual harassment-related data to include:

1. Develop precise definitions of sexual harassment to be used conceptually as well as to guide the development of the instrument.

2. Put some reasonable constraints on the time period for which sexual harassment is described.
3. Pilot studies should be conducted to gather evidence for the reliability and validity of those instruments.
4. Refrain from labeling particular kinds of behaviors as sexual harassment.
5. Review data bases for potential sample biases.
6. Acknowledge potential biases when they exist – no survey instrument is perfect (p. 49-50).

The survey instrument designed for this study adopted all six suggestions with the exception of the fifth one, as the sample was unique and purposive. Findings were not meant to be generalized across any other populations. As noted in the literature, unless similarities in workplace and respondent characteristics are demonstrated, great caution should be used when generalizing across populations (Arvey & Cavenaugh, 1995).

Organizational culture is also a concept with a broad and often complex definition. Despite all that has been written about organizational culture, many of the same pitfalls associated with measuring sexual harassment are present as well. As such, its construct still needs to be operationalized and measured as Glaser and Hacker note (1987). Most of the research has been conceptual and theoretical rather than empirical in nature (Pacanowsky & O'Donnell-Trujillo, 1983; Gudykunst et al. 1985). Considering the methodological challenges of assessing culture in an organizational setting this is understandable.

Fire service culture as discussed earlier is like no other. It has been best captured in the ethonographic work of Chetkovich (1987), Paul (1988), and Latour (2008). Much of the literature (Carbaugh, 1985; Louis, 1980; Pacanowsky & O'Donnell-Trujillo, 1983) either explicitly or implicitly embraces the need for qualitative research and ethnographic interview (Glaser and Hacker, 1987, p. 175). While this research remained quantitative in nature, variables representing acts specific to fire service culture (e.g. hazing, isolationism, offensive cartoons and comments) were identified and used to capture respondents' experiences. Some open-ended questions were used to afford respondents an opportunity to elaborate on their responses, which provided a deeper look into their experiences, painting pictures in a more qualitative form.

Such a position would hold true for all of the independent variables addressed in the survey to include such terms as sexual discrimination, glass barriers, etc. if more accurate responses were to be expected from respondents. Based on extant literature, the survey carefully explained the concepts in wording appropriate to the study population such as "Next this survey will ask you questions about sexual harassment. For the purposes of this survey, sexual harassment may include…" A copy of the final survey is included as Appendix C and the IRB approval is included as Appendix A.

In order to transition from concept to variable, it was necessary to organize the independent variables and place them into two distinct categories – inhibitors/obstacles and facilitators/strategies. The existing literature (Chetkovich, 1997, 2004; Hulett et al., 2008; Paul, 1998; Willing, 2011; Latour, 2008) provided a framework by identifying the most common obstacles faced by women in the fire service along with suggestions for

overcoming them. Appendix G includes the concepts, definitions, indicators, and variables.

Appendix H addresses the quantitative data collected through the surveys along with the level of measurement and appropriate statistical measurement including existing literature to support these choices. For example, respondents were asked to provide their rank, years of service, educational level and number of promotions. As ratio-based data, they were analyzed through the use of cross tabular analysis and coefficient of variation.

The next series of questions addressed personal experiences of touching, offensive jokes/remarks, sexual advances, hazing, sexual assault, isolationism, and privacy issues which are all nominal-based data and were analyzed through cross tabs and chi-square. Additional nominal questions followed regarding whether or not the respondents had taken legal actions or benefited from such as well as whether or not they had an opportunity for either formal or informal mentoring. Again, these were nominal-based data to be analyzed through cross tabs and chi-square. Finally, the last series of questions asked the respondents to apply a scale to rate the significance or the severity of these actions. As ordinal data, they were measured using cross tabs and Spearman's Rank Order Correlation.

Correlation and Regression

Two additional quantitative methods of analysis appropriate for this research included correlation analysis and regression analysis. According to Pollock (2009), correlation analysis produces a measure of association (also known as Pearson's r) that gauges the direction and strength of a relationship between variables. Regression analysis

produces a statistic (regression coefficient) that estimates the size of the effect of the independent variable on the dependent variable (p. 170). Specifically, the research sought to determine if the independent variables impacted the mobility (rank attainment) of female firefighters as they attempted to advance through the ranks of the fire service.

Regression analysis is more precise and produces a statistic revealing more concisely the nature of the relationship between an independent variable and a dependent variable. It is a robust technique allowing for statistical assumptions to be stretched more easily than other techniques. Nominal data (as dummy variables) can be used to ration data in doing regression, which is not possible with most other measures of association. Properly applied, regression can be used to detect and evaluate correlations and allows the researcher to model additive relationships and interaction effects. Existing literature on sexual harassment and glass ceilings (see Foulis & McCabe, 1997; Maume, 2004; Tang 1997; Kay & Hagan, 1995; Powell & Butterfield, 1994) clearly demonstrates the successful application of these methodologies, which in turn were applied to this study in the same manner.

Quantitative Data Protections

An important consideration when using online surveys includes data protection. *SurveyGizmo* proactively protects customer data, subscriber data, and survey data by keeping its servers up-to-date and its internal data security high. Account data were password-protected and only account holders had account access. A written request to permanently remove all response data from a survey following completion of collection was answered in two business days or less. *SurveyGizmo* then replied with written

confirmation that all files, database records and backups of this data had been destroyed. Data could not be recovered after this was performed. Upon receipt and download of the survey data this researcher requested that *SurveyGizmo* destroy the original data. Written confirmation of the destruction of all data was received by this researcher and can be found in Appendix D. At no point during the survey process were IP addresses or geographical locations of respondents recorded, affording additional identity protections.

Data analysis and findings will be presented next in Chapter IV Findings and Chapter V Summary and Conclusions.

CHAPTER IV

FINDINGS

This chapter presents the results of the statistical analyses of the data collected for this study. The research was designed to identify the obstacles women perceive in establishing a long-term career in the fire service. The research also identified strategies women use to advance within the historically segregated occupation of the fire service. A sample of 224 women in the fire service provided the data to test the seven hypotheses identified in Chapter II.

Data Analysis

Cross tabs, chi-square test of association, Spearman correlations, and multiple linear regressions were used to determine the relationships between female firefighter's upward mobility through the ranks and a variety of variables. Additional supporting data were collected from open-ended questions completed by the respondents.

Participants

Two hundred twenty six participants completed the survey. Two cases were removed because the respondents were male and not female. Participants completed several demographic questions as a part of the survey. The demographic data are summarized in this section in Table 3.1 and Table 3.2 through frequency distributions.

The majority of participants were Caucasian (88.3%) with a Bachelor's degree or above, and a current salary range from $6,000 to $180,000. The frequencies and percentages for these data are presented in Table 3.1.

As seen in Table 3.2, the average age was 43.43 (*SD* = 8.59) and ranged from 22 to 68 years of age. The starting salary ranged from 0 to $98,000 (*M* = 28,268.87, *SD* = 15207.02). Current salary ranged from 0 to $180,000 (*M* = 69,416.25, *S*D = 34,932.67).

How Did You First Learn About the Fire Service As a Career

The frequencies and percentages for how participants learned about the fire service as a career can be found in Table 3.3. The largest percentages of respondents reported learning about the fire service as a career from a friend (24.3%), another firefighter (27.4%), or some "other" source (24.8%).

Why Did you Become A Firefighter

The frequencies and percentages for "why did you become a firefighter?" can be found in Table 3.4. Respondents were asked to select all that apply. The largest percentages of respondents reported choosing to become a member of the fire service because it is a challenging job (51.3%), because it was a calling (41.6%), and because of pay and benefits (24.8%).

Career Information

The frequencies and percentages for survey questions related to career information can be found in Table 3.5. Fire departments are classified into three types of departments – career, volunteer, or combination. A career department is comprised entirely of paid personnel. Career departments are staffed 24 hours a day, seven days a week, 365 days a year. Volunteer departments are comprised of volunteers who perform

duties for little or no compensation. These departments are often not manned 24 hours a day; personnel only respond to emergency calls as needed. Combination departments are staffed by a limited number of paid personnel with the bulk volunteers. Paid personnel serve in officer capacities and operate as career professionals. The largest percentages of respondents reported they were in a career department (63.4%) and that their primary division assignment was Emergency response/operations (75.2%).

As seen in Table 3.6, the average number of personnel in the department was 587.46 (*SD* = 1303.07) and ranged from 12 to 10,500. Smaller municipalities (cities and towns less than 100,000 pop.) can operate with less than 100 personnel based on the community's needs. Larger departments such as FDNY and the Houston Fire Department can employ thousands of firefighters. The average number of women assigned to emergency response/operations within the department was 36.70 (*SD* = 74.38) and ranged from 0 to 500. The average number of women assigned to officer roles was 7.84 (*SD* = 21.33) and ranged from 0 to 250. Female officers in greater numbers are representative of larger career departments. Respondents had an average of 17.43 years (*SD* = 21.33) of experience with a range of 1 to 40 years.

Promoting through the Ranks

The frequencies and percentages for promotion information can be found in Table 3.7. The largest percentage of respondents reported receiving less than two promotions (60.9%) and most did not feel that less-qualified applicants promoted ahead of them based on gender (64.3%). The largest percentage of respondents also reported holding the

rank of firefighter (27.7%). Likewise, a total of 20.3% of the respondents did not feel they had to join another department for the advancement of their career.

As seen in Table 3.8, the average number of years it took participants to receive their first promotion was 4.91 (*SD* = 4.38) and ranged from 0 to 20 years. The average number of years it took women to be promoted to their current rank was 9.34 (*SD* = 8.23) and ranged from 0 to 60 years. The average number of years that elapsed between the most previous rank and the current rank was 4.91 (*SD* = 4.61) and ranged from 0 to 28 years. Respondents had worked for an average of 1.29 (*SD* = 0.97) fire departments in their career.

Analysis to Test the Hypotheses

Research Question 1

Research Question 1 was: What obstacles do women perceive in establishing a long-term career in the fire service? H1 was: Women who move through the ranks at slower rates are more likely to report sexual harassment. A series of chi-square tests of associations were used to determine if there was a relationship between experiences with sexual harassment and moving through the ranks (promotion).

Pornography. Supreme Court Justice Potter Stewart in the case of *Jacobellis v. Ohio (1964)* wrote: "I shall not today attempt further to define [obscenity]; and perhaps I could never succeed in intelligibly doing so. But I know it when I see it…." As such, pornography has no well-defined meaning nor a legal definition. However, female firefighters, like Stewart, know it when they see it. Often it can be found in pornographic

images left on computers as screensavers, adult magazines left lying around the station, and inappropriate calendars in bunkrooms.

The first chi-square test of association was used to determine the relationship between experiencing pornography in the workplace and the number of promotions received. The crosstabs for this analysis can be found in Table 3.9. The chi-square test of association indicated no statistically significant association between experiencing pornography and the number of promotions (x^2 (3) = 5.19, p = .15). As such, the hypothesis that those women who move through the ranks at slower rates are more likely to report sexual harassment can be rejected. However, experiences of sexual harassment may still occur, just not in terms of exposure to pornography at a statistically significant level.

Sexual Advances. Sexual advances include a multitude of acts, primarily unwanted sexual overtures and repeated requests for dates or sexual favors even after being denied. The next chi-square test of association was used to determine the relationship between experiencing sexual advances in the workplace and the number of promotions received.

The crosstabs for this analysis can be found in Table 3.10. The chi-square test of association indicated a statistically significant association between experiencing sexual advances in the workplace and the number of promotions (x^2 (3) = 10.25, p = .01). Those female firefighters who experienced sexual advances reported receiving fewer promotions. As such, the hypothesis that those women who move through the ranks at slower rates are more likely to report sexual advances was supported. To illustrate, one firefighter stated she experienced “unwanted sexual overtures” and others reported

"harassing text messages," "harassing letters," and "harassing phone messages" all of a sexual nature.

Sexual Harassment. Existing literature (Arvey & Cavanaugh, 1995; Gillespie & Leffler, 1987) noted in order for research to accurately capture experiences of sexual harassment, respondents should be provided with a clear definition of the term. In this research, the Equal Employment Opportunity Commission's formal definition was provided (see Appendix G). The next chi-square test of association was used to determine the relationship between experiencing sexual harassment in the workplace and the number of promotions received. The crosstabs for this analysis can be found in Table 3.11. The chi-square test of association indicated a lack of a statistically significant association between experiencing sexual harassment in the workplace and the number of promotions (x^2 (3) = 1.80, p = .61). As such, the hypothesis that those women who move through the ranks at slower rates are more likely to report sexual harassment was not supported.

Hypothesis 2

H2 was: Women who move through the ranks at slower rates are more likely to report sexual discrimination. A series of chi-square tests of associations were used to determine if there was a relationship between experiences with sexual discrimination and moving through the ranks (promotion).

Sexual Discrimination. Sexual discrimination in the workplace is defined as having hiring, evaluation, and promotion decisions based on a person's gender rather than performance or qualifications (Blanchard & Crosby, 1989). A chi-square test of association was used to determine the relationship between experiencing sexual

discrimination in the workplace and the number of promotions received. The crosstabs for this analysis can be found in Table 3.12. The chi-square test of association indicated a lack of a statistically significant association between experiencing sexual discrimination and the number of promotions (x^2 (3) = 6.10, p = .10). As such, the hypothesis that those women who move through the ranks at slower rates are more likely to report sexual discrimination was not supported. Despite the lack of statistical significance, 34.8% of respondents did report experiencing sexual discrimination.

Increased performance expectations. A chi-square test of association was used to determine the relationship between experiencing increased performance expectations in the workplace and the number of promotions received. The crosstabs for this analysis can be found in Table 3.13. The chi-square test of association indicated a lack of a statistically significant association between experiencing increased performance expectations and the number of promotions (x^2 (3) = 1.70, p = .63). As such, the hypothesis that those women who move through the ranks at slower rates are more likely to report sexual discrimination was not supported.

Denial of certain work assignments based on gender. A chi-square test of association was used to determine the relationship between denial of certain work assignments (e.g. serving on specialty teams such as structural collapse which are often associated with members having significant upper body strength) based on gender and the number of promotions received. The crosstabs for this analysis can be found in Table 3.14. The chi-square test of association indicated a statistically significant association between denial of certain work assignments based on gender and the number of promotions (x^2 (3) = 8.39, p = .03). A greater number of those with fewer promotions

reported the denial of certain work assignments based on gender. As such, the hypothesis that those women who move through the ranks at slower rates are more likely to report sexual discrimination was supported. In as much, respondents reported gender playing a role in their assignments on the survey. As one respondent put it, "I have been in operations my whole career. It may be beneficial to go into various areas such as training, fire prevention, etc. My only fear of that is that many departments tend to keep women in non-operational areas in what are considered 'office positions'." Likewise, another firefighter mentioned, "people saying that they would not be assigned with me due to my gender."

Denial of certain training opportunities based on your gender. A chi-square test of association was used to determine the relationship between denial of certain training opportunities based on gender and the number of promotions received. In the fire service, there are numerous trainings available on the local, state, and national levels. Training which leads to certifications is one of the requirements used in the promotional process. One respondent stated: "I was skipped over for training (that was required for promotion) multiple times so that less qualified men could be trained first." The crosstabs for this analysis can be found in Table 3.15. The chi-square test of association indicated a lack of a statistically significant association between denial of certain training opportunities based on gender and the number of promotions (x^2 (3) = 2.33, p = .50). As such, the hypothesis that those women who move through the ranks at slower rates are more likely to report sexual discrimination was not supported.

Denial of certain station assignments based on gender. A chi-square test of association was used to determine the relationship between denial of certain station

assignments based on gender and the number of promotions received. The old real estate adage that it's all about location holds true when it comes to station assignments in the fire service. If a firefighter is assigned to a station that has low call volume, it becomes difficult to gain the necessary experience to master the necessary skills for promotion. One respondent stated: "As a paramedic I was not allowed to work at a certain station due to them feeling there were not appropriate facilities onsite. I would have been at a very busy station. Instead, I got assigned to one of the slowest in our district." The crosstabs for this analysis can be found in Table 3.16. The chi-square test of association indicated a lack of a statistically significant association between denial of certain station assignments based on gender and the number of promotions (x^2 (3) = 4.00, p = .26). As such, the hypothesis that those women who move through the ranks at slower rates are more likely to report sexual discrimination was not supported. However, sexual discrimination (34.8%) was reported by respondents.

Hypothesis 3

H3 was: Women who move through the ranks at slower rates are more likely to report having hit glass barriers. A series of chi-square tests of association and Spearman correlations were used to determine if there was a relationship between hitting the glass ceiling and moving through the ranks (promotion).

Rank currently held in the department. A chi-square test of association was used to determine the relationship between rank in the department and the number of promotions received. The crosstabs for this analysis can be found in Table 3.17. The chi-square test of association indicated there was a statistically significant association between rank in the department and the number of promotions (x^2 (33) = 133.55, p = .00).

The data clearly illustrated the development of a glass ceiling in terms of promotions. The data revealed that 93.2% of all respondents earned just 1-4 promotions in their careers. In most organizations this would limit the firefighters' rank to that of Captain. As such, the hypothesis that those women who move through the ranks at slower rates are more likely to report having hit glass barriers was supported.

Number of Promotions Received

Next, a Spearman correlation was used to examine the correlation between years as a member of the fire service and number of promotions (see Table 3.18). There was a statistically significant correlation between years as a member of the fire service and number of promotions (r = .37, p = .00) indicating as years as a member of the fire service increased the number of promotions also increased.

A Spearman correlation was also used to examine the correlation between years in the current department and number of promotions (see Table 3.19). There was a statistically significant correlation between years in the current department and number of promotions (r = .44, p = .00) indicating as years in the current department increased the number of promotions also increased.

In the final analysis for Research Question 1, a Spearman correlation was used to examine the correlation between the number of fire departments worked for in career and number of promotions (see Table 3.20). There was a lack of a statistically significant correlation between the number of fire departments worked for in career and number of promotions (r = -.04, p = .23).

In the final analysis for Research Question 1, a multiple linear regression model was used to determine if total sexual harassment experience (i.e., this represents the sum

of sexual harassment events reported for each participant), total sexual discrimination experience (i.e., this represents the sum of sexual discrimination events reported for each participant), and the glass barrier variables predicted the number of promotions received in the current department. The model as a whole was statistically significant (F (5, 208) = 3.45, p = .00) and accounted for 19% (R^2 = .19) of the variance in the number of promotions received in the current department.

Several variables were significantly related to the number of promotions received in the current department (see Table 3.21). Length of time as a member of the fire service was positively and significantly associated with the number of promotions received in the current department (B = .01, p = .03); length of time in the current department was positively and significantly associated with the number of promotions received in the current department (B = .02, p = .00). Number of career fire departments worked for was negatively and significantly associated with the number of promotions received in the current department (B = -.102, p = .02). None of the other variables in the model were statistically significant.

Summary. Hypothesis 1, which indicated that those women who move through the ranks at slower rates are more likely to report sexual harassment, was partially supported given that there was an association between (a) experiencing sexual advances in the workplace and the number of promotions supported in this case. Hypothesis 2, which indicated that those women who move through the ranks at slower rates are more likely to report sexual discrimination, was partially supported given that there was (a) statistically significant association between denial of certain work assignments based on gender and the number of promotions. Hypothesis 2, which indicated that women who

move through the ranks at slower rates are more likely to report having hit glass barriers, was partially supported given that there was (a) statistically significant association between rank in the department and the number of promotions; (b) a statistically significant positive correlation years as a member of the fire service and number of promotions; and (c) a statistically significant correlation between years in the current department and number of promotions.

The regression model indicated that length of time as a member of the fire service and length of time in the current department was positively and significantly associated with the number of promotions received in the current department. In addition, the number of career fire departments worked for was negatively and significantly associated with the number of promotions received in the current department.

Research Question 2

Research Question 2 was: What strategies do women follow to adapt to and succeed within a historically segregated occupation, namely the fire service? This research question had four corresponding hypotheses: Hypotheses 4-7.

Hypothesis 4

Hypothesis 4 was: Women who move through the ranks at slower rates are more likely to report organizational culture as a factor. A series of chi-square tests of association were used to determine if there was a relationship between organizational culture and moving through the ranks (promotion).

Social isolation. A chi-square test of association was used to determine the relationship between social isolation and the number of promotions received. The crosstab for this analysis can be found in Table 3.22. The chi-square test of association indicated a lack of a statistically significant association between social isolation and the number of promotions (x^2 (3) = 0.50, p = .91). As such, the hypothesis that those women who move through the ranks at slower rates are more likely to report organizational culture as a factor was not supported. While overall the findings were not statistically significant, depending on the fire station design, some tend to lend themselves to social isolation while others do not. For example, older stations were built with wide-open bunkrooms prior to women entering the fire service. As such, this layout tended to prevent social isolation because there was nowhere to go for privacy. However, many newer stations have taken a co-ed population into consideration and are being built with private individual dorm rooms and more separate areas such as meeting and training rooms that would allow for isolationism to occur.

Privacy issues. A chi-square test of association was used to determine the relationship between privacy issues and the number of promotions received. The crosstab for this analysis can be found in Table 3.23. The chi-square test of association indicated a statistically significant association between privacy issues and the number of promotions (x^2 (3) = 13.56, p = .00). Those who had not experienced privacy issues were more likely to have less than two promotions than those who experience privacy issues. In addition, those who had experienced privacy issues were more likely to have 3-4 promotions than those who had not experienced privacy issues. As such, the hypothesis that those women who move through the ranks at slower rates are more likely to report the privacy element

of organizational culture as a factor was supported. The findings that those who experienced privacy issues tended to receive more promotions may be attributed to the fact that they were virtually made to interact more closely with other personnel than those who did not experience privacy issues.

Hazing. A chi-square test of association was used to determine the relationship between hazing and the number of promotions received. The crosstab for this analysis can be found in Table 3.24. The chi-square test of association indicated a lack of a statistically significant association between hazing and the number of promotions (x^2 (3) = 4.18, p = .24). As such, the hypothesis that those women who move through the ranks at slower rates are more likely to report hazing as part of organizational culture as a factor was not supported.

Offensive notes. A chi-square test of association was used to determine the relationship between offensive notes and the number of promotions received. The crosstab for this analysis can be found in Table 3.25. The chi-square test of association indicated a lack of a statistically significant association between offensive notes and the number of promotions (x^2 (3) = 1.85, p = .60). As such, the hypothesis that those women who move through the ranks at slower rates are more likely to report offensive notes or cartoons as part of the fire service's organizational culture as a factor was not supported.

Hypothesis 5

Hypothesis 5 was: Women who moved upward through the ranks are more likely to have benefited from legal action (affirmative action, consent decrees, lawsuits). A series of chi-square tests of association and Spearman correlations were used to

determine if there was a relationship between hitting the glass ceiling and moving through the ranks (promotion).

Ever filed a grievance for gender-related issues. A chi-square test of association was used to determine the relationship between having ever filed a grievance for gender-related issues and the number of promotions received. The crosstab for this analysis can be found in Table 3.26. The chi-square test of association indicated a lack of a statistically significant association between having ever filed a grievance for gender-related issues and the number of promotions (x^2 (3) = 4.40, p = .22). As such, the hypothesis that those women who move through the ranks at slower rates are more likely to have benefited from legal action (affirmative action, consent decrees, lawsuits) was not supported. In fact, just 30.5% of respondents (N=190) reported having filed a grievance or formal complaint related to gender-related issues.

Grievance resolved satisfactorily. A chi-square test of association was used to determine the relationship between grievance resolved satisfactorily for gender-related issues and the number of promotions received. The crosstab for this analysis can be found in Table 3.27. The chi-square test of association indicated a lack of a statistically significant association between grievance resolved satisfactorily and the number of promotions (x^2 (3) = 2.55, p = .46). Of those filing grievances (N=58), just 33.9% (N=19) were resolved to their satisfaction.

Ever taken external formal legal action. A chi-square test of association was used to determine the relationship between ever taken external formal legal action and the number of promotions received. The crosstab for this analysis can be found in Table 3.28. The chi-square test of association indicated a lack of a statistically significant association

between ever taken external formal legal action and the number of promotions (x^2 (3) = 1.93, p = .58). As such, the hypothesis that those women who move through the ranks at slower rates are more likely to have benefited from legal action (affirmative action, consent decrees, lawsuits) was not supported.

However, when women first entered the fire service and Affirmative Action and consent decrees were widely used to assist entrée, formal legal actions were more prevalent as evidenced by one respondent: "I came in and promoted when affirmative action was legal in California and the department was pursuing diversity in its ranks by recruiting women to serve and promote. That is no longer the case." She goes on to state: "There are fewer women entering and promoting now. Someone who wanted in today would NOT HAVE the opportunities I had. Today's exams and evaluation tools are skewed to those who already have contacts or family members already inside the department."

Legal issue resolved favorably. A chi-square test of association was used to determine the relationship between the legal issue being resolved favorably and the number of promotions received. The crosstab for this analysis can be found in Table 3.29. The chi-square test of association indicated a lack of a statistically significant association between the legal issue being resolves favorably and the number of promotions (x^2 (1) = 1.06, p = .30). It should also be noted that there was a great deal of missing data for this question. While some respondents reported taking legal action, they may not have reported the result of such action. As such, the hypothesis that those women who move through the ranks at slower rates are more likely to have benefited from legal action (affirmative action, consent decrees, lawsuits) was not supported. Again, this may be

attributed to the fact that affirmative action and consent decrees are no longer being applied.

Union involved in the legal action. A chi-square test of association was used to determine the relationship between the union being involved in the legal action and the number of promotions received. The crosstab for this analysis can be found in Table 3.30. The chi-square test of association indicated a lack of a statistically significant association between the union being involved in the legal action and the number of promotions (x^2 (1) = 0.48, p = .48). It should also be noted that there was a great deal of missing data for this question. As such, the hypothesis that those women who move through the ranks at slower rates are more likely to have benefited from legal action was not supported. However, not all firefighters are members of a union; moreover, the union does not become involved in every legal action. While just 18 respondents (out of 190) reported taking formal external legal action, 17 reported being union members and only 10 of them had union involvement on their behalf.

Hypothesis 6

Hypothesis 6 was: Women who moved upward through the ranks are more likely to have been afforded equal training opportunities. A series of chi-square tests of association and Spearman correlations were used to determine if there was a relationship between hitting the glass ceiling and moving through the ranks (promotion). A chi-square test of association was used to determine if there was a relationship between having been afforded equal training opportunities and moving through the ranks (promotion).

The crosstab for this analysis can be found in Table 3.31. The chi-square test of association indicated a lack of a statistically significant association between receiving

coaching/mentoring from senior personnel and the number of promotions (x^2 (3) = 2.32, p = .50). As such, the hypothesis that those women who moved upward through the ranks are more likely to have been afforded equal training opportunities was not supported.

Hypothesis 7

Hypothesis 7 was: Women who moved upward through the ranks are more likely to have benefited from mentoring relationships. A series of chi-square tests of association were used to determine if there was a relationship between hitting the glass ceiling and moving through the ranks (promotion).

Received coaching/mentoring from senior personnel. A chi-square test of association was used to determine the relationship between the receiving coaching/mentoring from senior personnel and the number of promotions received. The crosstab for this analysis can be found in Table 3.32. The chi-square test of association indicated a lack of a statistically significant association between receiving coaching/mentoring from senior personnel and the number of promotions (x^2 (3) = 4.46, p = .21). As such, the hypothesis that those women who moved upward through the ranks are more likely to have benefited from mentoring relationships from senior personnel was not supported.

However, a number of respondents reported informal mentoring experiences that were found to be valuable. One firefighter noted: “I had one unofficial mentor in my department after I made lieutenant, and one outside my department after I made captain, another woman who was a Battalion Chief from another state.” Another reported: “I have been fortunate enough to have a number of positive mentors. There have been a number of additional opportunities for me as long as I have set myself up right.” When asked how

important is mentoring for women in the fire service, 52.9% or respondents (N=225) felt is was extremely important with 93.3% in agreement it was important or greater for the advancement of women.

Tried to recruit other women into the fire service. A chi-square test of association was used to determine the relationship between tried to recruit other women into the fire service and the number of promotions received. The crosstab for this analysis can be found in Table 3.33. The chi-square test of association indicated a lack of a statistically significant association between women who tried to recruit other women into the fire service the number of promotions (x^2 (3) = 2.33, p = .50). As such, the hypothesis that those women who moved upward through the ranks are more likely to have benefited from recruiting other women was not supported.

In the final analysis for Research Question 2, a multiple linear regression model was used to determine if total organizational culture (i.e., this represents the sum of sexual harassment events reported for each participant), affirmative action, legal involvement, training, and mentoring predicted the number of promotions received in the current department. The model as a whole was statistically significant (F (5, 179) = 2.88, p = .01) and accounted for 7% (R^2 = .07) of the variance in the number of promotions received in the current department.

Two variables were significantly related to the number of promotions received in the current department (see Table 3.34). Organizational culture was positively and significantly associated with the number of promotions received in the current department (B = .11, p = .00. Receiving mentoring was also positively and significantly

associated with the number of promotions received in the current department (B = .23, p = .01). None of the other variables in the model were statistically significant.

Mentoring, as based on the open-ended comments, may be the single most important factor aiding in advancement through the ranks. “Mentoring should be formalized and available to all,” said one firefighter. Another firefighter added: “ Mentors can be invaluable.” Mentoring remained a theme throughout the survey as a firefighter said: “Mentoring is key. There needs to be more female officers to be role models. Find someone to help you practice and learn.”

Organizational culture also evoked some interesting responses. “I believe times are getting better for women in the fire service but we still have a long way to go. I have found that my coworkers are very receptive to differing points of view,” said one firefighter. She continued: “I feel women add balance to the entire culture and mentality of the fire service.” However, not all responses proved to be positive concerning organizational culture and changes over time. “There appears to be a gender gap. That upper management is causing and not allowing women to advance,” reported one firefighter. Another firefighter noted that she was told by her chief in the presence of others that “women should not be police officers or firefighters.”

After conducting open coding on responses related to organizational culture, a number of different categories emerged. The most common responses indicated that women are no more better off today than they were 40 years ago upon first entering the fire service. One firefighter stated: “I believe working in the fire service environment is about everyday survival for anyone, especially minorities and in the early years of one’s

career. It is a huge personal learning curve to work and find your place within such a unique institution." Another firefighter reported: "It is still a good ole boys club with promotions based on who you know."

Summary. The research sought to answer two primary research questions:

1. What obstacles do women perceive in establishing a long-term career in the fire service?

2. What strategies do women follow to adapt to and succeed within a historically segregated occupation, namely the fire service?

In the final analysis for Research Question 1, a multiple linear regression model determined that total sexual harassment experience (i.e., this represents the sum of sexual harassment events reported for each participant), total sexual discrimination experience (i.e., this represents the sum of sexual discrimination events reported for each participant), and the glass barrier variables predicted the number of promotions received in the current department. The model as a whole was statistically significant as noted earlier.

Several variables were significantly related to the number of promotions received in the current department (see Table 3.21). Length of time as a member of the fire service was positively and significantly associated with the number of promotions received in the current department and length of time in the current department was positively and significantly associated with the number of promotions received in the current department. None of the other variables in the model were statistically significant.

Additional open-ended questions also provided additional insight into perceived obstacles. The question: “Is there anything else you would like to share regarding your advancement through the ranks or any additional information that you feel should be shared regarding advancement?” elicited additional obstacles not previously identified.

One such obstacle involved family, especially from younger fire service members. One firefighter noted: “Women need to make plans and decisions in the very beginning about family, children, etc. A number of our young women are married or engaged to other emergency responders/firefighters and there is no such thing as 24-hour childcare. Deciding who will make what changes or sacrifices is critical. Also, examining career options (admin vs. ops, etc.) should be looked at and explored early. Make a plan!”

Another stated: “In my department there are very few women who apply, and fewer who stay due to pregnancy or other life changes.”

As for strategies, 207 of the 224 respondents answered the open-ended question “What did you personally do to assist in your own advancement?” After completing open-ended coding on the responses, it was determined that 79.7% (N=165) reported that training and education were part of their strategies to aid in their advancement. In contrast, 10 respondents chose not to advance or promote at all. One stated she “is not interested in becoming an officer” and another said “happy where I am.” The remaining 32 respondents (15.4%) stressed other strategies such as simply “volunteering to do other tasks”, “looking for other opportunities within the organization”, and “taking time to learn from others.”

Table 3.1

Participant Demographics (Frequencies and Percentages)

Demographic Characteristic	n	%
Race		
Caucasian	197	88.3
African-American	6	2.7
Hispanic or Latin	7	3.1
Other	6	2.7
Multi-Racial	7	3.1
Total	223	100.0
Martial Status		
Single (including divorced, separated, widowed)	74	33.3
Couple (married or partnership)	145	65.3
Other (please state)	3	1.4
Total	222	100.0
Highest Level of Education		
High school diploma/GED	6	2.7
Some college	44	19.6
Associates degree	38	16.9
Bachelors degree	96	42.7
Masters degree	39	17.3
Doctoral degree	2	.9
Total	225	100.0
Current Salary Range		
< $25,000	9	4.1
$25,001-$35,000	14	6.4
$35,001-$45,000	13	5.9

$45,001-$55,000	21	9.6
$55,001-$65,000	17	7.8
$65,001-$75,000	35	16.0
$75,001-$85,000	40	18.3
$85,001-$95,000	19	8.7
> $95,000	51	23.3
Total	219	100.0

Table 3.2

Descriptives for Participant Demographics

Demographic Characteristic	*N*	Min	Max	*M*	*SD*
How old are you?	224	22	68	43.43	8.59
What was your starting salary?	202	0	98000	28268.67	15207.02
What is your current salary?	205	0	180000	69416.25	34932.67

Note. *M* = mean, *SD* = Standard Deviation.

Table 3.3

Frequencies and Percentages for the Question "How Did you First Learn About the Fire Service As a Career?"

How did you first learn about the fire service as a career	*n*	%
Friend		
No	171	75.7
Yes	55	24.3
Total	226	100.0
Family member in the fire service		
No	187	82.7
Yes	39	17.3
Total	226	100.0
Another Firefighter	6	2.7
No	164	72.6
Yes	62	27.4
Total	226	100.0
Fire Department Recruiter		
No	219	96.9
Yes	7	3.1

Total	226	100.0
Recruiting fair		
No	221	97.8
Yes	5	2.2
Total	226	100.0
Job advertisement		
No	210	92.9
Yes	16	7.1
Total	226	100.0
Public education program		
No	223	98.7
Yes	3	1.3
Total	226	100.0
Station tour		
No	223	98.7
Yes	3	1.3
Total	226	100.0
Experienced an emergency response personally		
No	211	93.4

Yes	15	6.6
Total	226	100.0
The events of 9/11/2001		
No	224	99.1
Yes	2	.9
Total	226	100.0
Television or movies' portrayal of firefighters		
No	214	94.7
Yes	12	5.3
Total	226	100.0
Other		
No	170	75.2
Yes	56	24.8
Total	226	100.0

Table 3.4

Frequencies and Percentages for the Question "Why did you Choose to Become a Member of the Fire Service?"

Why did you Choose to Become a Member of the Fire Service	*n*	%
Pay and benefits		
No	170	75.2
Yes	56	24.8
Total	226	100.0
Challenging job		
No	110	48.7
Yes	116	51.3
Total	226	100.0
Felt it was a calling		
No	132	58.4
Yes	94	41.6
Total	226	100.0
Family tradition		
No	208	92.0
Yes	18	8.0

Total	226	100.0
Other		
No	171	75.7
Yes	55	24.3
Total	226	100.0

Table 3.5

Frequencies and Percentages for Career Information

Career Information	*n*	%
What type of department is your department		
Career	142	63.4
Volunteer	23	10.3
Combination	59	26.3
Total	224	100.0
What is your primary division assignment?		
Emergency response/operations	170	75.2
Administration	26	11.5
Prevention	8	3.5
Training	10	4.4
Other	12	5.3
Total	226	100.0

Table 3.6

Descriptive Statistics for Departmental Characteristics

Departmental Characteristic	*N*	Min	Max	Mean	*SD*
What is the total number of personnel in your department?	222	12	10500	587.46	1303.07
How many women are assigned to emergency response/operations within your department?	220	0	500	36.70	74.38
How many women are assigned to officer roles?	219	0	250	7.84	21.33
How many years of fire service experience ?	225	1	40	17.43	8.26

Note. *M* = mean, *SD* = Standard Deviation.

Table 3.7

Frequencies and Percentages for Promotion Information

How many promotions in rank have you received with your current department?	*n*	%
<2	134	60.9
3-4	71	32.3
5-6	12	5.5
>7	3	1.4
Total	220	100.0
In your opinion, were less-qualified applicants promoted ahead of you based on gender		
No	137	64.3
Yes	50	23.5
Unsure	26	12.2
Total	213	100.0
If you answered YES, were they male or female		
Male	49	98.0
Female	1	2.0
Total	50	100.0
What rank do you currently hold within your department?		

Firefighter	62	27.7
Inspector/Code Official	2	.9
Fire and Life Safety Educator	2	.9
Engineer/Driver	13	5.8
Lieutenant	22	9.8
Captain	41	18.3
Battalion Chief	16	7.1
Division/District Chief	15	6.7
Assistant Chief	4	1.8
Deputy Chief	5	2.2
Chief	8	3.6
Other	34	15.2
Total	224	100.0

Did you feel you had to join another department for the advancement of your career?

No	173	79.7
Yes	44	20.3
Total	217	100.0

Table 3.8

Descriptive Statistics for Promotion Characteristics

	N	Min	Max	Mean	*SD*
How long did it take you to receive your first promotion in rank after initial appointment with your current department (in years)?	194	0	20	4.91	4.38
How long did it take for you to promote to your current rank (in years)?	194	0	60	9.34	8.23
How many years elapsed between your most previous rank and your current rank (in years)?	192	0	28	4.91	4.61
How many career fire departments have you worked for in your career (in years)?	223	0	10	1.29	.97

Note. *M* = mean, *SD* = Standard Deviation.

Table 3.9

Crosstabs for Experiencing Pornography by Number of Promotions Received

		How many promotions in rank have you received with your current department?				
		<2	3-4	5-6	>7	Total
Pornography	Unchecked	66.4%	53.5%	70.0%	33.0%	61.9%
		(89)	(38)	(9)	(1)	(137)
	Checked	33.6%	46.5%	30.0%	66.7%	38.1%
		(45)	(33)	(3)	(2)	(83)
	Total	33.6%	71%	12%	3%	100%
		(134)	(71)	(12)	(3)	(220)

Table 3.10

Crosstabs for Sexual Advances by Number of Promotions Received

		How many promotions in rank have you received with your current department?				
		<2	3-4	5-6	>7	Total
Sexual advances:	Unchecked	69.4%	49.3%	80.0%	66.7%	63.3%
		(93)	(35)	(10)	(2)	(140)
	Checked	30.6%	50.7%	20.0%	33.3%	36.7%
		(41)	(36)	(2)	(1)	(80)
	Total	100%	100%	100%	100%	100%
		(134)	(71)	(12)	(3)	(220)

Table 3.11

Crosstabs for Sexual Harassment by Number of Promotions Received

		How many promotions in rank have you received with your current department?				
		<2	3-4	5-6	>7	< Total
Sexual harassment	Unchecked	69.4%	49.3%	80.0%	66.7%	63.3%
		(97)	(45)	(8)	(2)	(152)
	Checked	30.6%	50.7%	20.0%	33.3%	36.7%
		(37)	(26)	(4)	(1)	(68)
	Total	100%	100%	100%	100%	100%
		(134)	(71)	(12)	(3)	(220)

Table 3.12

Crosstabs for Sexual Discrimination by Number of Promotions Received

		How many promotions in rank have you received with your current department?				
		<2	3-4	5-6	>7	Total
Sexual discrimination	Unchecked	69.4%	54.9%	50	100	64.2%
		(93)	(39)	(7)	(3)	(142)
	Checked	30.6%	45.1%	50.0%	0.0%	35.8%
		(41)	(32)	(5)	(0)	(78)
	Total	100%	100%	100%	100%	100%
		134	71	12	3	220

Table 3.13

Crosstabs for Increased Performance Expectations by Number of Promotions Received

		How many promotions in rank have you received with your current department?				
		<2	3-4	5-6	>7	Total
Increased performance expectations based on your gender.	Unchecked	54.5% (73)	47.9% (34)	30.0% (5)	33.3% (1)	50.9% (113)
	Checked	45.5% (61)	52.1% (37)	70.0% (7)	66.7% (2)	49.1% (107)
	Total	100% (134)	100% (71)	100% (12)	100% (3)	100% (220)

Table 3.14

Crosstabs for Denial of Certain Work Assignments Based on Gender by Number of Promotions Received

		How many promotions in rank have you received with your current department?				
		<2	3-4	5-6	>7	Total
Denial of certain work assignments based on your gender	Unchecked	69.4%	52.1%	70.0%	100%	64.2%
		93	37	9	3	142
	Checked	30.6%	47.9%	30.0%	0.0%	35.8%
		41	34	3	0	78
	Total	100%	100%	100%	100%	100%
		(134)	(71)	(12)	(3)	(220)

Table 3.15

Crosstabs for Denial of Certain Training Opportunities Based on Gender by Number of Promotions Received

		How many promotions in rank have you received with your current department?				
		<2	3-4	5-6	>7	Total
Denial of certain training opportunities based on your gender	Unchecked	74.6% (100)	67.6% (48)	70.0% (9)	100.0% (3)	72.5% (160)
	Checked	25.4% (34)	32.4% (23)	30.0% (3)	0.0% (0)	27.5% (60)
	Total	100% (134)	100% (71)	100% (12)	100% (3)	100% (220)

Table 3.16

Crosstabs for Denial of Certain Station Assignments Based on Gender by Number of Promotions Received

		How many promotions in rank have you received with your current department?				
		<2	3-4	5-6	>7	Total
Denial of certain station assignments based on your gender	Unchecked	77.6% (104)	67.6% (48)	80.0% (10)	100.0% (3)	74.8% (165)
	Checked	22.4% (30)	32.4% (23)	20.0% (2)	0.00% (0)	25.2% (55)
	Total	100% (134)	100% (71)	100% (12)	100% (3)	100% (220)

Table 3.17

Crosstabs for Rank Currently Held in the Department by Number of Promotions Received

		How many promotions in rank have you received with your current department?				
		<2	3-4	5-6	>7	< Total
What rank do you currently hold within your department?	Firefighter	57	2	1	0	60
	Inspector/Code Official	0	2	0	0	2
	Fire and Life Safety Educator	2	0	0	0	2
	Engineer/Driver	11	2	0	0	13
	Lieutenant	16	6	0	0	22
	Captain	16	18	4	1	39
	Battalion Chief	2	14	0	0	16
	Division/District Chief	4	10	1	0	15
	Assistant Chief	1	1	1	1	4
	Deputy Chief	2	1	1	1	5
	Chief	1	4	3	0	8

Other	22	11	1	0	34
Total	134	71	12	3	220

Table 3.18

Spearman Correlation between Years as a Member of the Fire Service by Number of Promotions

		How long have you been a member of the fire service?
How many promotions in rank have you received with your current department?	*r*	.37**
	p	.00
	N	220

Note. ** indicates the correlation is significant at the .01 level.

Table 3.19

Spearman Correlation between Years in Current Department by Number of Promotions

		How long have you been a member with your current department?
How many promotions in rank have you received with your current department?	*r*	.44**
	p	.00
	N	217

Note. ** indicates the correlation is significant at the .01 level.

Table 3.20

Spearman Correlation between Number of Fire Departments Worked for in Career and Number of Promotions

		How many career fire departments have you worked for in your career?
How many promotions in rank have you received with your current department?	*r*	-.04
	p	.23
	N	217

Table 3.21

Regression Coefficients for the Relationship between Sexual Harassment, Sexual Discrimination, Glass Barriers, and Number of Promotions

Discrimination, Glass Barriers, and Number of Promotions

					Collinearity Statistics	
	B	Std. Error	*t*	Sig.	Tolerance	VIF
Sexual Harassment Total	.02	.04	.55	.58	.79	1.26
Sexual Discrimination Total	.02	.03	.59	.55	.795	1.25
How long have you been a member of the fire service?	.01	.00	2.16	.03	.45	2.18
How long have you been a member with your current department?	.02	.00	2.82	.00	.49	2.00
How many career fire departments have you worked for in your career?	-.10	.04	-2.19	.02	.78	1.27

Table 3.22

Crosstabs for Social Isolation by Number of Promotions Received

		How many promotions in rank have you received with your current department?				
		<2	3-4	5-6	>7	Total
Social isolation (i e being isolated from your crew or other women)	Unchecked	44.0% (59)	40.8% (29)	50.0% (5)	33.3% (1)	43.1% (94)
	Checked	56.0% (75)	59.2% (42)	50.0% (5)	66.7% (2)	56.9% (124)
Total		100% (134)	100% (71)	100% (10)	100% (3)	100% (218)

Table 3.23

Crosstabs for Privacy Issues by Number of Promotions Received

		How many promotions in rank have you received with your current department?				
		<2	3-4	5-6	>7	Total
Privacy issues (dormitory, restrooms, showers)	Unchecked	60.4% (81)	33.8% (24)	50.0% (5)	33.3% (1)	50.9% (111)
	Checked	39.6% (53)	66.2% (47)	50% (5)	66.7% (2)	49.1% (107)
	Total	100% (134)	100% (71)	100% (10)	100% (3)	100% (218)

Table 3.24

Crosstabs for Hazing by Number of Promotions Received

		How many promotions in rank have you received with your current department?				
		<2	3-4	5-6	>7	Total
Hazing (i.e., victim of pranks, forced to do things other crew members were not asked to do)	Unchecked	82.1% (110)	70.4% (50)	70.0% (7)	66.7% (2)	77.5% (169)
	Checked	17.9% (24)	29.6% (21)	30.0% (3)	33.3% (1)	22.5% (49)
	Total	100% (134)	100% (71)	100% (10)	100% (3)	100% (218)

Table 3.25

Crosstabs for Offensive Notes by Number of Promotions Received

		How many promotions in rank have you received with your current department?				
		<2	3-4	5-6	>7	Total
Offensive notes, cartoons, or other printed material	Unchecked	74.6%	67.6%	60.0%	66.7%	71.6%
		(100)	(48)	(6)	(2)	(156)
	Checked	25.4%	32.4%	40.0%	33.3%	28.4%
		(34)	(23)	(4)	(1)	(62)
	Total	100%	100%	100%	100%	100%
		(134)	(71)	(10)	(3)	(218)

Table 3.26

Crosstabs for Ever Filed a Grievance for Gender-Related Issues by Number of Promotions Received

		How many promotions in rank have you received with your current department?				
		<2	3-4	5-6	>7	Total
Have you ever filed a grievance or formal complaint within your organization for gender-related issues?	No	74.3%	60.3%	77.8%	50.0%	69.5%
		(84)	(38)	(7)	(1)	(130)
	Yes	25.7%	39.7%	22.2%	50.0%	30.5%
		(29)	(25)	(2)	(1)	(57)
	Total	100%	100%	100%	100%	100%
		113	63	9	2	187

Table 3.27

Crosstabs for Grievance Resolved Satisfactorily by Number of Promotions Received

		How many promotions in rank have you received with your current department?				
		<2	3-4	5-6	>7	Total
Was the grievance/complaint resolved to your satisfaction?	No	71.4% (20)	58.3% (14)	100.0% (2)	100.0% (1)	67.3% (37)
	Yes	28.6% (8)	41.7% (10)	0.0% (0)	0.0% (0)	32.7% (18)
	Total	100% (28)	100% (24)	100% (2)	100% (1)	100% (55)

Table 3.28

Crosstabs for Ever Taken External Formal Legal Action by Number of Promotions Received

		How many promotions in rank have you received with your current department?				
		<2	3-4	5-6	>7	Total
Have you ever taken external formal legal action (i.e., lawsuit, EEOC complaint) against your department for gender-related issues?	No	91.2%	87.3%	100.0%	100.0%	90.4%
		(103)	(55)	(9)	(2)	(169)
	Yes	8.8%	12.7%	0.0%	0.0%	9.6%
		(10)	(8)	(0)	(0)	(18)
	Total	100%	100%	100%	100%	100%
		(113)	(63)	(9)	(2)	(187)

Table 3.29

Crosstabs for Legal Issue Resolved Favorably by Number of Promotions Received

		How many promotions in rank have you received with your current department?		
		<2	3-4	Total
Was the legal issue resolved in your favor?	No	50.0% (4)	25% (2)	37.5% (6)
	Yes	50.0% (4)	75% (6)	62.5% (10)
	Total	100% (8)	100% (8)	100% (16)

Table 3.30

Crosstabs for the Union Being Involved in the Legal Action by Number of Promotions Received

		How many promotions in rank have you received with your current department?		
		<2	3-4	Total
If you are a union member, was the union involved in your legal action?	No	33.3% (3)	50.0% (4)	41.2% (7)
	Yes	66.7% (6)	50.0% (4)	58.8% (10)
	Total	100% (9)	100% (8)	100% (17)

Table 3.31

Crosstab for Being Afforded Equal Training Opportunities by Number of Promotions Received

		How many promotions in rank have you received with your current department?				
		<2	3-4	5-6	>7	Total
Denial of certain training opportunities based on your gender	Unchecked	74.6%	67.6%	70.0%	100.0%	72.5%
		(100)	(48)	(7)	(3)	(158)
	Checked	25.4%	32.4%	30.0%	0.0%	27.5%
		(34)	(23)	(3)	(0)	(60)
	Total	100%	100%	100%	100%	100%
		(134)	(71)	(10)	(3)	(218)

Table 3.32

Crosstab for Received Coaching/Mentoring from Senior Personnel by Number of Promotions Received

		How many promotions in rank have you received with your current department?				
		<2	3-4	5-6	>7	Total
I have received coaching/mentoring from senior personnel in my department	No	36.4%	35.2%	10.0%	0.0%	34.3%
		(48)	(25)	(1)	(0)	(74)
	Yes	63.6%	64.8%	90.0%	100.0%	65.7%
		(84)	(46)	(9)	(3)	(142)
	Total	100%	100%	100%	100%	100%
		(132)	(71)	(10)	(3)	(216)

Table 3.33

Crosstabs for Tried to Recruit Other Women into the Fire Service by Number of Promotions Received

		How many promotions in rank have you received with your current department?				
		<2	3-4	5-6	>7	Total
Have you tried to recruit other women into the fire service?	No	20.9% (28)	15.5% (11)	30.0% (3)	0.0% (0)	19.3% (42)
	Yes	79.1% (106)	84.5% (60)	70.0% (7)	100.0% (3)	80.7% (176)
	Total	100% (134)	100% (71)	100% (10)	100% (3)	100% (218)

Table 3.34

Regression Coefficients for the Relationship between Organizational Culture, Affirmative Action, Legal Involvement, Training, Mentoring and Number of Promotions

					Collinearity Statistics	
	B	Std. Error	*t*	Sig.	Tolerance	VIF
Organizational Culture Total	.11	.04	2.71	.00	.72	1.38
Ever filed a grievance or formal complaint within your organization for gender-related issues?	.12	.12	1.03	.30	.69	1.43
Ever taken external formal legal action?	-.29	.18	-1.59	.11	.71	1.39
Denial of certain training opportunities based on your gender?	-.03	.10	-.34	.73	.913	1.09
Received coaching/mentoring from senior personnel in my department	.23	.09	2.43	.01	.96	1.03

CHAPTER V

SUMMARY AND CONCLUSIONS

Introduction

The primary purpose of this research was to identify the obstacles perceived by women in the fire service that may hinder their advancement through the ranks. A secondary purpose was to identify the strategies used to overcome these same obstacles. By analyzing the data collected through a quantitative survey distributed through the IAWFES well-defined obstacles and strategies emerged. Additional qualitative analysis of open-ended questions revealed a richer and deeper set of experiences. As a result, the data revealed findings related to: (1) mobility through the ranks, (2) perceived barriers to advancement, (3) strategies used to overcome these barriers, (4) educational practices of women in the fire service, and (5) the significant impact of organizational culture within the fire service. Chapter V discusses conclusions drawn from the findings presented in the previous chapter along with recommendations for research, policy, and practice.

Conclusions

After more than 200 years, the fire service remains an institution deeply rooted in its traditions. Sadly, one of those traditions is excluding women and other minorities from

joining the ranks. The statistics tell the real story. According to the most recent Bureau of Labor Statistics Report (2011), today's career fire service is comprised of approximately 350,000 personnel. Women remain underrepresented and continue to make up just 3.4% of the fire service. Not only are women underrepresented, but minorities are underrepresented as well. Today's fire service is comprised of 95.1% Whites, followed by 10.0% Hispanics/Latinos, 2.9% African Americans, and 0.6% Asians. The issue of diversity clearly remains a challenge for the fire service.

This research began with two primary questions:

1. What obstacles do women perceive in establishing a long-term career in the fire service?

2. What strategies do women follow to adapt to and succeed within a historically segregated occupation, namely the fire service?

In order to answer the two research questions, seven hypotheses were considered. First, women who move through the ranks at slower rates are more likely to report having hit glass barriers. Multiple linear regression analysis demonstrated a statistically significant model determining that sexual harassment experience, coupled with total sexual discrimination experience and glass barrier variables, predicted the number of promotions received in the current department. Second, women who move through the ranks at slower rates are more likely to report sexual discrimination. Third, women who move through the ranks at slower rates are more likely to report sexual harassment. Fourth, women who move through the ranks at slower rates are more likely to report organizational culture as a factor. Fifth, women who moved upward through the ranks are more than likely to have benefited from legal action (affirmative action, consent decrees, lawsuits). Sixth, women who moved upward through the ranks are more likely to have been afforded equal training opportunities. Finally, women who moved upward through the ranks

are more than likely to have benefited from mentoring relationships. The present chapter addresses the research questions generally, with specific attention paid to survey findings.

Obstacles

Several obstacles to advancement were reported by survey respondents. The most prevalent and serious in nature as indicated on the Likert scales included sexual harassment, sexual discrimination, and organizational culture which will be revisted briefly now. An overarching theme was hitting the glass ceiling at the rank of captain, prohibiting further advancement through the ranks.

Glass Barriers and Mobility through the Ranks

Hypothesis 2, which indicated that women who move through the ranks at slower rates are more likely to report having hit glass barriers, was partially supported given that there was (a) statistically significant association between rank in the department and the number of promotions; (b) a statistically significant positive correlation years as a member of the fire service and number of promotions; and (c) a statistically significant correlation between years in the current department and number of promotions.

The majority of career departments in the U.S. have formal promotional processes in place, which may include such things as time of service, time in grade (e.g. time in current rank), training and certifications, formal education, a written exam, and panel interviews or a chief's interview as part of the process. Generally speaking, longevity of service should equate to more promotions in rank though that is not necessarily the case. The research findings indicated that women tend to be trapped by the glass ceiling at the rank of captain as noted earlier.

In terms of actually promoting through the ranks, a well-established glass ceiling was pinpointed at the rank of company officer (captain). However, no comparative data exists for men at this time. Of the 220 respondents to the question regarding number of promotions received,

205 (93.2%) received 4 or fewer throughout their careers stranding them at the rank of captain (see Figure 5.1 below). The *Report Card* (2008) and additional work by Hulett et al. (2008) further supports the existence of a glass ceiling at the rank of captain. A glass ceiling would certainly explain the lack of women in chief officer positions. Existing literature also supports these findings. In the *Report Card* (2008), it was reported that typically just three to five years of experience is required before firefighters can apply for promotions. However, the *Report Card* (2008) notes "that on average 10 years elapsed between the women at entry-level and at any higher rank" (p. 9). No other literature or study currently exists to clearly demonstrate the differences between men and women promoting in the fire service, but these numbers appear to tell the story.

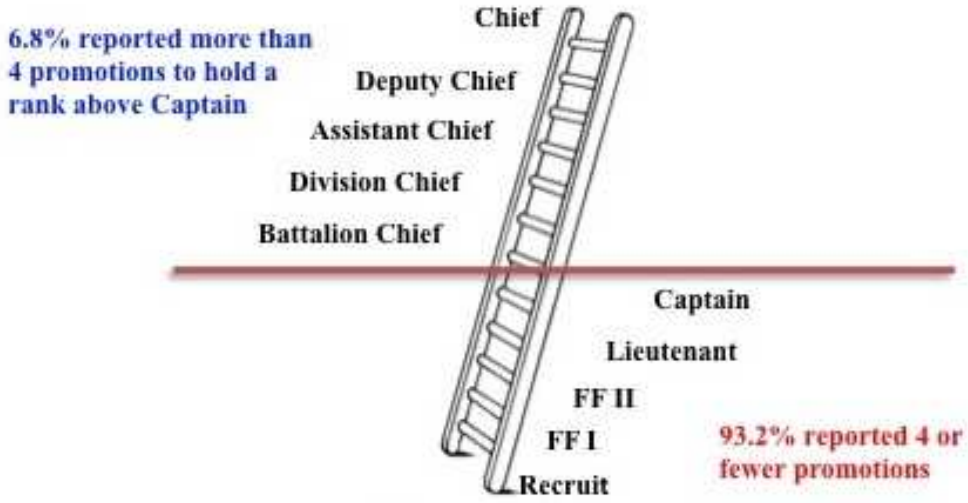

Figure 5.1 Glass ceiling for female firefighters exists at rank of captain

The regression model indicated that length of time as a member of the fire service and length of time in the current department was positively and significantly associated with the number of promotions received in the current department. In addition, the number of career fire departments worked for was negatively and significantly associated with the number of

promotions received in the current department. In the fire service, it is not uncommon for someone to spend an entire career (20 or more years of service) with the same department, working through the ranks.

However, the research demonstrated that females either had to move to a new department for promotional opportunities or regret not having done so. Said one female firefighter: "I have nowhere 'up' to go, short of changing departments. I am starting to look at starting my own consulting business, leaving the fire service altogether." Another reported: "No advancement – left the department I was on due to lack of respect." In some professions, changing employers is commonplace for advancement. However, in the fire service this practice can be looked upon negatively as one is expected to work one's way up through the ranks of the department. If a firefighter chooses to change departments it should be for more promotional opportunities and occur earlier in one's career. Departments will look at candidates for promotion within an organization before turning to the outside.

Outside hires often find themselves under increased scrutiny and may fuel dissention among the ranks who feel promotions should come from within. Following the fallout from the Boston Marathon bombing, Chief Steve Abraira, found himself under fire for what his deputy chiefs cited as lack of leadership. As the city's first Hispanic chief, he was also the first hired from outside the department's own ranks. In his resignation letter, Abraira said his outsider status hindered his efforts to fulfill his mission to modernize the department. "A number of members … preferred that the Chief be selected from within the ranks of the Department itself," he wrote (Lindsay, 2013, para.12).

Retired Madison (WI) Fire Chief Debra Amesqua faced similar challenges. When she was hired in 1996 she was criticized for being an outsider to the department. She brought with her only 13 years of firefighting experience and no formal education. Initially her critics claimed the

other candidates were more qualified and she was nothing but an affirmative action hire. After 15 years of service she retired at the end of 2011 after overcoming a no confidence vote by firefighters in 1998. Other administrative issues that brought unwelcome attention in her early years eventually faded away and she was able to finally do her job. As one reporter put it: “Debra Amesqua began her tenure in the fire department as a hated figure. She leaves with almost universal respect” (Bell, 2011).

While the glass ceiling for women in the fire service is evident, respondents reported a number of other obstacles. The most significant ones are found in Figure 5.2 below with a discussion of each to follow. Some obstacles are also part of a much larger category such as sexual discrimination (e.g. denial of training, work, or station assignments based on gender) and will be discussed in that respective section.

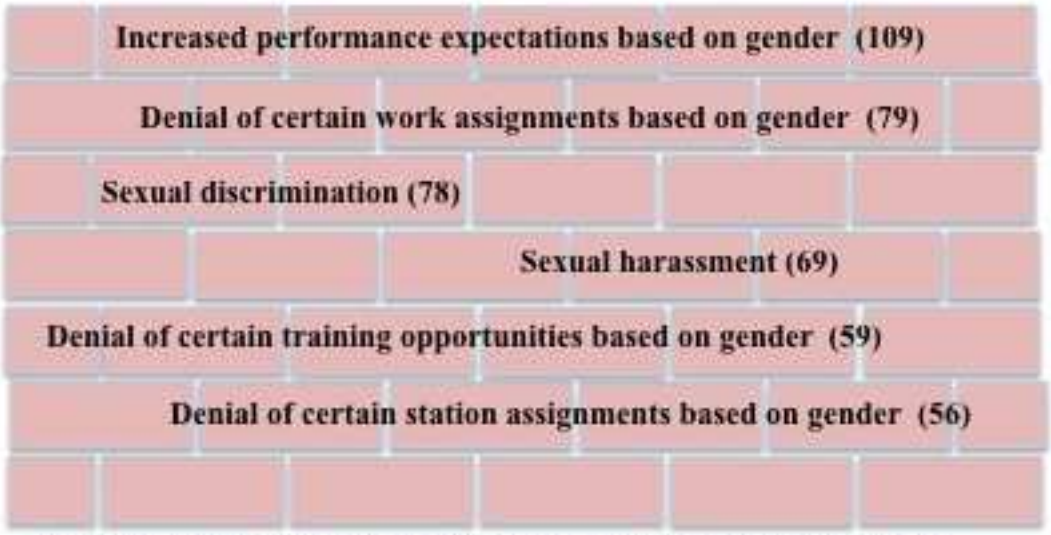

Figure 5.2 Greatest perceived obstacles to advancement as reported by respondents (number of those reporting the experience out of n=224)

Sexual Discrimination

Hypothesis 2, which indicated that those women who move through the ranks at slower rates are more likely to report sexual discrimination, was partially supported given that there was (a) statistically significant association between denial of certain work assignments based on gender and the number of promotions. In the fire service, one must often attain a particular rank to be eligible for promotion to a higher rank, which is largely dependent upon completion of additional training and certifications. If training is denied or access to certain station assignments is denied (i.e. a busy station versus a slow one), promotions may be hindered. A female firefighter noted: "When I was a rookie I aspired to move up the ranks, the sky was the limit. I never took a promotional test due to the hostile and harassing environment of the fire department. I completed a number of additional certifications beyond what many of the others earned. Many women on my department feel the same or have quit."

Kanter (1977) first noted that social closure leads to short promotional ladders for women. As work efforts of women in the fire service are either ignored or undervalued it can cause their careers to lag behind their male counterparts (Maume, 1999; *Report Card*, 2008). One example of closure processes present in the fire service is the exclusion of women from certain specialized teams such as hazardous materials, structural collapse, confined spaces, and water rescue. All of these areas require additional specialized training and assignments to stations that perform these functions.

For example, women may be discouraged from becoming a member of a structural collapse team if perceived they lack the upper body strength to aid in rescue. It is not much different than what women in the military have experienced until recently. Women in the military have long argued that by denying them the ability to serve in combat roles the military had unfairly held them back (Bumiller & Shanker, 2013).

Another significant example of social closure processes prevalent in the fire service is the continued use of the Candidate Physical Ability Test (CPAT) as part of the hiring process. As discussed in Chapter II and later in this chapter, physical abilities testing is one of the most legally contested aspects of the hiring process. It is this portion of the process that eliminates a large majority of female candidates. In the study conducted by Hulett et al. (2008), research demonstrated that in departments requiring a physical abilities test, the average pass rate for women was nearly half that of men (47.3% to 83.9%) (p. 198). The CPAT and other similar tests rely heavily on upper body strength where men typically out-perform women. Women, on the other hand, often display better stamina and endurance than their male counterparts. Such skills are also necessary for firefighting (Chetkovich, 1997, p. 217).

Sexual Harassment

Sexual harassment is mentioned most often in the literature pertaining to many of the recent lawsuits filed by female firefighters. In June of 2013 a federal judge awarded a female New Smyrna Beach (FL) firefighter $444,000 in her sexual harassment lawsuit against the city and ordered that she be rehired by the end of July. Melissa Ignasiak Smith claimed she suffered sexual harassment by superior officers and after complaints was terminated (Johnson, 2013, para. 1).

In a separate case, two female members of the Westbrook (ME) fire department agreed to settle a sexual harassment lawsuit for $846,000. The women alleged sexual harassment and discriminatory promotional practices. Their lawsuit said after filing complains the department failed to address the issues that contributed to a hostile work environment. Among the allegations included several male firefighters watching pornography at the station to sex at a fire department gathering. Both of the cases were similar to numerous others filed throughout the years (Richardson, 2010, para. 25).

As for the results of this research, 73.9% of the respondents (51 of 69) perceived the harassment to be moderate to severe on the Likert scale. Despite this fact, just 30% of respondents (58 of 190) reported filing a grievance or formal complaint with their organization. Of the 58, just 18 (9.5%) took external formal legal action. The low number of formal complaints or external legal action implies that even though women are experiencing acts of discrimination and harassment, the acts may be going unreported. Women may choose not to report such acts, fearing it may cause a negative impact on their ability for promotion. One female firefighter stated: "I worked hard, kept my mouth shut, ignored discrimination and took it so I wasn't blackballed. I also proved myself through my work and work ethic, and worked hard to 'be one of the guys'."

Existing literature from Cohen (2000) supports this finding. In fact, he notes that women can either react by avoiding the group or by playing along with it. By doing so, they inherently place themselves within a prescribed hierarchy (p. 100). However, excluding women from social opportunities outside of work can make women feel like outsiders leading to occupational segregation. Women may still not feel welcome or accepted in the profession. It is further supported by researchers who believe that work devaluation reduces opportunities for upward mobility and advancement (Cohen & Huffman, 2003; Reskin & Hartmann, 1986; Moller & Li, 2009).

Organizational Culture

Women continue to report that the culture of the fire service remains hostile towards women (as well as minorities) as evidenced by the numbers presented earlier. Despite the fact that quantitative data reported no significant findings, open-ended questions provided additional insight. As such, this suggests that the lived experience of organizational culture remains difficult to capture quantitatively. Qualitative data from the survey indicated that female firefighters

reported numerous instances of organizational culture impacting their ability to advance as their male counterparts.

One female claimed: “I have been waiting to be signed off (by the chief) for months, when other men on the job get signed off without the chief’s written permission.” Another female firefighter provided an additional perspective: ”It was a bit painful. I was the first female to be hired for a paid position and there were some hard feelings initially among the male ranks. Over the years, I experienced some of the commonly-reported challenges such as always having to prove myself, not being included in after work social events, etc.”

Organizational culture in the fire service extends well beyond attitudes. It can escalate into actions that outsiders would most likely find offensive and unacceptable in any type of work setting. In the survey, several women reported things such as: “destruction of personal property, placing human excrement on the toilet seat and more,” “tampering with my protective equipment, death threats,” and even “being left to fend for myself while getting burned at a fire.”

While organizational culture first found itself formally defined by Pettigrew in 1979, it had already been well established in the fire service for more than 200 years. Hazing, practical jokes, and other acts of minor abuse (such as making the rookie clean the toilets every shift) remind the newcomer that he or she is at the bottom of the ladder (Moore & Kleiner, 2001). The fire service requires its members to constantly prove themselves.

This research discovered that organizational culture continues to serve as a significant barrier to women advancing and remaining in the fire service for long-term careers. It is supported by research conducted by Ward and Winstanley (2006) who noted that the fire service allows members to interact in two distinct ways. The first is through the development of trust and to a degree independence and confidence while handling emergency response situations. Both Chetkovich (1997) and Rosell et al. (1995) also found this to be true. The second includes the

opportunities for informal interaction during "downtime", in between calls for service (Ward & Winstanley, 2006, p. 203). If women are excluded from the social process as indicated above, the fire service culture will continue to exclude women on numerous levels of the organization.

Strategies

Over time, women in the fire service have had to adopt strategies to assist in their own advancement. Initially, this research hypothesized legal action would force change and aid in advancement. However, the data revealed that consent decrees and affirmative action appear to be strategies of the past. Firefighters who take formal legal action against a department are more likely to accept a settlement so they may get on with their careers or leave the fire service altogether as part of their settlement agreement. Many settlement agreements are confidential according to the reports. Such is the case with the Westbrook (ME) firefighters. Monetary figures were released but the other conditions were not made public. In others, such as Smith's case, the federal judge's order was part of public records.

Affirmative Action and Consent Decrees

Hypothesis 5, which indicated that those women who moved upward through the ranks are more likely to have benefited from legal action (affirmative action, consent decrees, lawsuits), was not supported. It is not surprising, since affirmative action and consent decrees are no longer the issues they were when women first entered the fire service nearly 40 years ago. Just one respondent reported joining the fire service with assistance of affirmative action. She noted that: "There are fewer women entering and promoting now. Today's exams and evaluation tools are skewed towards those who already have contacts or family members inside the department."

The existing literature makes few references to affirmative action and consent decrees (Chetkovich, 1997, 1994; *Report Card*, 2008). Likewise, the research resulted in just the one respondent stating she benefited from such action. Today, the literature focuses on lawsuits and

actions being taken by women after joining the fire service for instances of harassment, discrimination, and other serious offenses (see MacDonald, 2012; Bryan, 2012). Many of these legal actions have resulted in large settlements awarded to the plaintiff as in the case of Miami Beach Firefighter Marlenis Smart who was awarded $700,000 after male firefighters hung her bra in the firehouse bay and splattered her bathing suit with semen (Bryan, 2012*).*

Education and Training

How do women increase their chances at upward mobility? In this study, female firefighters indicated that education and training are a significant factor in advancement through the ranks. As evidence, out of 207 respondents, 165 (79.7%) cited education and/or training as tools for personal advancement. Furthermore, female firefighters have embraced education as evidenced by their responses to the question concerning highest level of formal education achieved. Some 77.8% of all respondents to the question (n=225) hold associates degrees or higher. Areas of concentration include fire science and emergency services; however, a number of the advanced degrees include organizational leadership, emergency management and disaster research, business and public administration, and education. The data support the U.S. Census Bureau's most current reports, which show that in 2009 women earned 58.7% of all degrees awarded in the U.S.

No research exists to demonstrate the educational attainment levels of men and women in the fire service. However, the data gathered for this research suggests that there may exist a possibility that women have pursued more formal education than their male counterparts. It may be in an attempt to assist in advancement or to have a secondary career to fall back upon, but it certainly warrants more investigation.

Interestingly, the fire service throughout its history has not embraced formal education, according to Dr. Denis Onieal, Superintendant of the National Fire Academy (Sendelbach, 2011)

That trend has changed over the past decade with the emergence of fire-related higher education programs. A large driving force behind this movement has been the NFA's Fire & Emergency Services Higher Education (FESHE) project.Onieal points out that municipalities are hiring people using education as a line of demarcation and applicants with degrees have a distinct advantage over those with lesser credentials (Sendelbach, 2011). Onieal stated: "There will come a time, not in my lifetime, when this fire profession will be just like doctors and nurses and teachers. That's when you'll know that the fire service has become a profession and is no longer just an occupation" (Sendelbach, 2011, p.5).

Mentoring Relationships

The hypothesis that those women who moved upward through the ranks are more likely to have benefited from mentoring relationships was not supported. Despite this finding, the regression model indicated that organizational culture and receiving mentoring was positively and significantly associated with the number of promotions received in the current department. If this holds true, an organizational culture accepting of women which provides some form of mentoring for support would assist women in advancement through the ranks.

The survey results indicated that 93.3% of respondents (210 of 225) felt mentoring was important to very important for the advancement of women. As organizational culture improves and women are able to develop mentoring relationships, one would expect more women to be able to advance through the ranks.

According to Jacobi (1991), the concept of mentoring has been traced back to the Greek myth of Odysseus, but the more recent research on the topic began in mid-1970s. Mentoring received increasing attention during this period in the fields of education, management, and psychology. Kanter's work, *Men and Women of the Corporation* (1977), credits her with being

one of the early pioneers in this area. Her analysis underscored the association between having a sponsor, or mentor, and achieving success in business (p. 506).

Kanter (1977) discusses the difficulties women experience in identifying and establishing mentor relationships. While respondents indicated the significance of mentoring, they also noted it was often difficult to establish mentoring relationships. With few women in the fire service, mentors may not be available especially if one is the only female within the department. As suggested by one respondent, she took it upon herself to locate a mentor outside of her department and this aided in her professional growth and ability to successfully promote.

Strategies for Overcoming Obstacles to Promotion

So what can women do to advance through the ranks in the fire service? Figure 5.3 below depicts the strategies most cited by respondents in the survey data as strategies for advancement. What follows are suggestions that have been deemed successful by women in the fire service.

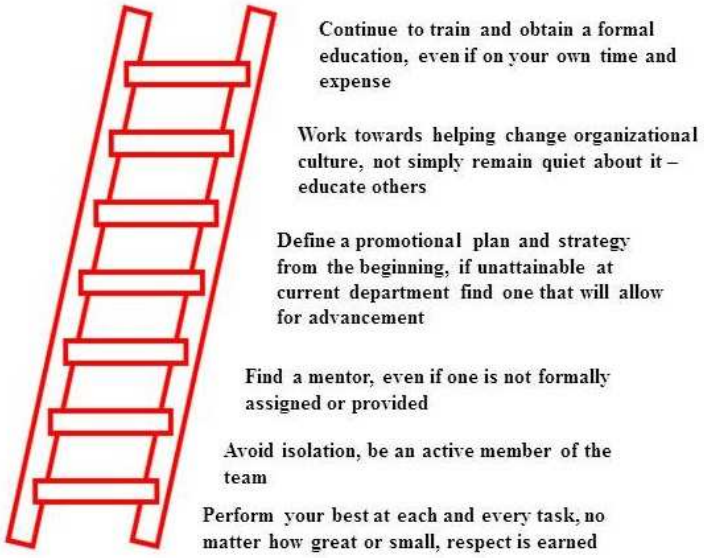

Figure 5.3 Suggestions to aid female firefighters in advancing through the ranks as suggested by survey respondents

One of the most significant measures one can take is continued training and education, regardless of the departments' commitment or support. Adopting a mentor, even if one is not formally provided, will provide additional support as challenges on the job arise. Educating others is also recommended, as a means for facilitating a change in culture. Likewise, developing a promotional plan from the beginning and taking ownership of one's career path is also significant in promoting through the ranks. Finally, making every effort to be a part of the team and earn respect of others by working hard every day. Every firefighter must go through this process regardless of gender – respect is earned, not automatically handed out.

Recommendations

Recommendations for Research

Overall, the findings presented here contribute to our further understanding of women in the fire service, the obstacles they perceive, and some of the strategies they use to overcome them. However, the limitations of quantitative research demonstrate the need to take this research further with additional qualitative study. Taking a quantitative approach to this research allowed this researcher (an insider) to remain an outsider, thus protecting any possible bias from impacting the research. Though, as evidenced by the open-ended responses of the participants, many stories are yet to be told. Until they are, we may not be able to capture all of the answers we seek to aid women in advancing in the fire service.

To demonstrate this desire of participants' willingness to share their stories, more than two-thirds of the respondents offered to participate in one-on-one interviews. Out of 224 participants, 155 (69.2%) volunteered to be contacted for interviews. This speaks volumes about the women serving today. They genuinely wish to help others, especially future generations of women, who choose to enter this profession. While 89.8% of respondents would recommend the fire service to other women and another 81.4% have tried to recruit other women to the service,

just 45.2% have reported success in doing so. Clearly there are underlying factors yet to be determined and only qualitative research may be able to provide those answers.

If this researcher were to continue this study, a recommendation to use qualitative research methods to put some flesh on the bones of this study would be a priority. Additional qualitative research would provide an opportunity for the respondents to further elaborate on their experiences. Close-ended questions limit their ability to fully share their stories and experiences. Because respondents were asked to rate the severity of their experiences based solely on their perceptions, follow-up open-ended questions could possibly evoke additional information. Such information would give greater context and meaning to initial responses.

This study documents that despite 40 years of involvement in the career fire services, women and minorities still have a very long way to go. The findings in this study indicate that in order to effectively address and increase the number of women in the fire service, organizational culture must be a major part of that discussion. It is no longer acceptable to simply state that one is trying to recruit more women, the culture must be accepting of women if it truly wishes to embrace them in the profession.

Recommendations for Policy and Practice

Despite the fact that women have held career positions in the fire service for nearly 40 years, this research demonstrated many women continue to face challenges that should have been eliminated years ago. Why then, after nearly 30 years since Brenda Berkman first challenged the FDNY's hiring practices, are women still having to challenge hiring practices across this country? Could it be that the fire service has a deeply rooted tradition discouraging change? Case in point, in June 2013 the Chicago (IL) Fire Department agreed to settle a 2011 discrimination lawsuit that alleged requirements of the department's old PAT (physical abilities test), were "arbitrary and discriminatory" (Huffington Post, May 6, 2013). As a result the Chicago Fire Department has

agreed to begin using the Candidate Physical Ability Test (CPAT), a more nationally standardized evaluation developed by the International Association of Firefighters.

On the surface this may seem like a positive change for the Chicago Fire Department.

Historically, however, there have been challenges to this test as well. According to Hulett, et al. (2008) the job relatedness of the CPAT has not been validated using the standard statistical method – "criterion-based validation". Criterion-based validation focuses on whether the tasks in the test equate to actual job duties. Too many factors can impact the pass rates including weather, equipment, and access to practice with the actual equipment prior to testing (p. 199). It is recommended that departments look at their physical abilities test to ensure it is valid and reflects job-relatedness. The administration of the test as well as its weight in the overall hiring process should also be considered. In doing so, women's pass rates could conceivably increase without sacrificing their personnel's ability to perform their work safely and effectively as meaningful contributors to the department.

While testing for physical abilities helps explain fewer women in the fire service to begin with, it is not responsible for women's inability to advance through the ranks. Nor is testing responsible for women leaving the fire service altogether in order to pursue other careers. Despite the fact the quantitative data did not demonstrate the significance of organizational culture in the fire service, the qualitative data said otherwise. Organizational culture may play a greater role in whether or not women decide stay and advance through the ranks of the fire service than ever thought of before. A complex concept with numerous nuances, organizational culture dictates virtually every aspect of the fire service. While there are some signs of promise, there are many other challenges to face as well.

A change in organizational culture requires education. Today's fire-related and public administration degree programs emphasize ethics and diversity in organizations. Both of these are

critical if the fire service plans to move forward as a profession. Tomorrow's fire service leaders must embrace and execute practices that *include* rather than *exclude* women and minorities if the profession truly wishes to reflect the communities it serves.

When it comes to recruitment, diversity should be emphasized with an attempt to reach out to underrepresented groups. Ideally, fire departments should mirror the communities to which they serve. Unfortunately, this is often not the case. Minorities and women remain underrepresented despite targeted recruiting efforts. Some larger municipalities such as the City of Charlotte (NC) and City of Madison (WI) Fire Departments have concerted efforts at recruiting from the gay and lesbian community. Many others continue to reach out to females and other minorities as part of their regular recruiting practices. However, until the fire service is seen as being more diverse, many groups will continue to feel unwelcome.

In fact, the International Association of Fire Fighters (IAFF) Diversity Initiative released a report *Achieving and Retaining a Diverse Fire Service Workforce*. It found that despite never having been under a consent decree, the City of Madison Fire Department has "an over-representation of Blacks, community representation of Hispanics, and very good representation of women. This department is ranked #1 in our sample for excellent diversity for all groups."

In developing hiring processes, the profession must ensure the integrity and fairness of every step taken. In doing so, the physical abilities testing portion of the hiring process should be validated and measure what it is intended to measure. The CPAT as developed by the IAFF should not be the only choice of test for departments. Once hired, all members should be treated equally in every aspect including the issuance of properly fitting gear, assignment to housing appropriate for both sexes, equal training and education opportunities, and mentoring programs.

Finally, and most importantly, the development of policies that prohibit any and all forms of discrimination and harassment coupled with a zero tolerance policy resulting in serious

disciplinary action leading up to and including termination based on the seriousness of the offense. Today, municipalities require sexual harassment training for all employees regardless of department or position. However, the fire service is exposed to many more opportunities for sexual harassment and discrimination and training programs should be specific to the fire service. Leadership must start from the top down if the number of women and minorities in the fire service is to grow.

Concluding Remarks

The opening of this study noted that women experience difficulties advancing and remaining in the fire service throughout their careers. Female firefighters continue to seek legal action against departments and individuals for blatant acts of sexual harassment, sexual discrimination, and a host of other behaviors deemed inappropriate for any workplace setting. Yet despite these experiences, women continue to fight for their place in the fire service.

The study attempted to identify the perceived obstacles and barriers women in the fire service face on a regular basis and the strategies they use to overcome them. From a theoretical standpoint, the study confirmed that a glass ceiling does exist for women at the company officer (captain) level. It also identified how powerful organizational culture can be by providing one group with advantages while alienating others. It may come in the form of denied training requests, assignment to stations where limited experience can be gained, and denial of assignment to specialty teams – all of which may allow men to advance at faster rates than women. From a practical standpoint, the study offers insight into organizational culture and practices within the fire service that must be addressed by fire service leaders if diversity is ever to be truly achieved

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APPENDICES

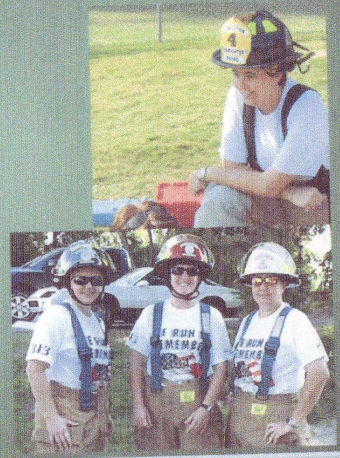
APPENDIX A

IRB Approval Letter and Supporting Documents

Call for Participants

Female firefighters needed for participation in a research project (surveys) to better understand the experiences of female firefighters advancing through the ranks. All responses will be kept confidential.

Survey available at
www.tobeprovidedlater.com
for additional information
barb.russo@okstate.edu



APPENDIX B

Letter of Survey Assistance from International

Association of Women in Fire and Emergency Services

Russo, Barbara

Subject: FW: iWomen: assistance]

From: Sharon Baroncelli [mailto:SBaroncelli@iafc.org]
Sent: Monday, January 14, 2013 2:12 PM
To: Russo, Barbara
Subject: iWomen: assistance]

Hi Barb,
We look forward to helping you in any way that we can. Your ideas below will work with us. We can send out your survey link via our email group and/or newsletter. Just keep us posted. Can't wait to see your results as well.
Sharon

Sharon Baroncelli
Association and Services Manager
International Association of Fire Chiefs (IAFC) IAFC Foundation, iWomen, NSEFO
4025 Fair Ridge Drive, Suite 300
Fairfax, VA 22033
703.896.4822
-------- Original Message --------
Subject: assistance
From: "Russo, Barbara" <brusso@uncfsu.edu<mailto:brusso@uncfsu.edu>>
Date: Thu, January 10, 2013 12:03 pm
To: "staff@i-women.org<mailto:staff@i-women.org>"
<staff@i-women.org<mailto:staff@i-women.org>>
Good Afternoon Ms. Baroncelli,

I am hoping you and the Association can help me out. I am a PhD student at Oklahoma State University and have been an iWomen member the past few years and appreciate the efforts our organization does to promote women in fire and emergency services as well as being our go-to place for the latest issues affecting us in the fire service.

My dissertation is going to be along the lines of an extension to Carol Chetkovich's work. I had the opportunity to have her lecture in one of our courses last year and she has informally mentored me on this project – there couldn't possibly be a better resource. I want to look at what obstacles women perceive in establishing a long-term career in the fire service and what strategies they follow to adapt and succeed within a historically segregated occupation. To gather my data I am going to need a little help from the Association if possible.

First I would like to know if it is feasible to distribute a call for members to respond to an online survey that will then give them an option to be interviewed as part of my research via the Association? I think this will happen in early spring after the survey clears our IRB at OSU. Our organization is the largest to serve our population and I feel it is my best opportunity to gather the most accurate and complete data possible.

Secondly, if it will be possible, I could use a rough estimate of current membership numbers, as I will certainly be asked to include it in the IRB proposal for the survey. Any assistance the Association can provide to help support my research effort would be greatly appreciated.
Thanks for your time and assistance in advance.
Barb Russo

1

APPENDIX C

Survey

Introduction

PARTICIPANT INFORMATION FOR ONLINE SURVEY

Oklahoma State University

Women in the Fire Service

You are invited to participate in an on-line survey aiding research investigating the experiences of female firefighters in moving through the ranks. There are five sections to the survey and it is expected that it should take you no longer than 15 minutes to complete the survey. What follows is a detailed explanation of the purpose, expectations, risks and benefits, as well as your protections as participants in this survey. Please read the information carefully. You may print a copy of this for your records before beginning the survey.

Investigator: Barbara R. Russo, M.S., (Ph.D. Candidate) Oklahoma State University

Purpose: The purpose of the research study is to understand the experiences of female firefighters in moving through the ranks.

What to Expect: This research study is administered online through survey provider SurveyGizmo. Participation in this research will involve the completion of one online survey and participants will be asked if they wish to be considered for additional interviews if selected as a case study in order to gain more detailed information about personal experiences. No personal identifying information will be used to protect confidentiality. The online survey will ask about fire service experiences. The interviews will ask for more detailed descriptions of answers provided in the online survey. You may skip any questions you choose not to answer and may end the survey at any time. You will be expected to complete the online survey just once. It should take no longer than 15 minutes to complete and a progress bar will be located at the bottom of the screen so that you may follow your progress.

Risks: There are no risks associated with this project which are expected to be greater than those ordinarily encountered in daily life.

Benefits: Participants may benefit from gaining greater awareness of women's experiences as they try to advance through the ranks of the fire service and contributing to research aimed towards gaining knowledge that may help other women better understand the possible challenges allowing for further advancement for women in their careers.

Compensation: No compensation is provided for participation in this research, it is voluntary.

Your Rights and Confidentiality: Your participation in this research is voluntary. There is no penalty for refusal to participate, and you are free to withdraw your consent and participation in this project at any time, without penalty.

Confidentiality: All personal identifying information about you will be kept confidential and will not be released. Research records will be stored securely and only researchers and individuals responsible for research oversight will have access to the records. Results of the survey will be aggregated to further protect confidentiality. Pseudonyms will be used in place of actual names in the interviews. Upon completion of the research, data may be reported in journals or other professional, scientific communications.

Contacts: You may contact any of the researchers at the following addresses and phone numbers, should you desire to discuss your participation in the study and/or request information about the results of the study: Barbara R. Russo, M.S. 919-922-2625 barb.russo@okstate.edu. If you have questions about your rights as a research volunteer, you may contact Dr. Shelia Kennison, IRB Chair, 219 Cordell North, Stillwater, OK 74078, 405-744-3377 or irb@okstate.edu.

If you choose to participate: Please, click YES at the bottom of the page if you choose to participate. By clicking YES, you are indicating that you freely and voluntarily and agree to participate in this study and you also acknowledge that you are at least 18 years of age. Completion of the survey is considered to be consent.

It is recommended that you print a copy of this consent page for your records before you begin the study.

1) Do you consent and agree to take this survey?*

( ) Yes

( ) No

Entering the Profession

This section asks about your entry into the profession and length of service.

2) How did you first learn about the fire service as a career option?
Please check all that apply.

[ ] Friend

[ ] Family member in the fire service

[ ] Another Firefighter

[ ] Fire Department Recruiter

[ ] Recruiting fair

[ ] Job advertisement

[ ] Public education program

[ ] Station tour

[ ] Experienced an emergency response personally

[ ] The events of 9/11/2001

[ ] Television or movies' portrayal of firefighters

[ ] Other

3) Why did you choose to become a member of the fire service?
Please check all that apply.

[ ] Pay and benefits

[ ] Challenging job

[ ] Felt it was a "calling"

[ ] Family tradition

[ ] Other

4) Number of Years

How long have you been a member of the fire service?:

How long have you been a member with your current department?:

Your Department

This section asks about the type of department you serve with and number of personnel and assignments.

5) What type of department is your department?

( ) Career

( ) Volunteer

( ) Combination

6) Please answer the following:

What is the total number of personnel in your department?:

How many women are assigned to emergency response/operations within your department?:

How many women are assigned to officer roles?:

Your Career

This section asks about your personal career and advancement opportunities.

7) What is your primary division assignment?

( ) Emergency response/operations

( ) Administration

( ) Prevention

( ) Training

( ) Other:

8) How many years of fire service experience do you have?

9) How many promotions in rank have you received with your current department?

( ) <2

( ) 3-4

( ) 5-6

( ) >7

10) Please answer the following:

How long did it take you to receive your first promotion in rank after initial appointment with your current department?:

How long did it take for you to promote to your current rank?:

How many years elapsed between your most previous rank and your current rank?:

11) In your opinion, were less-qualified applicants promoted ahead of you based on gender?

( ) Yes

( ) No

( ) Unsure

12) If you answered YES, were they male or female?

( ) Male

( ) Female

13) What rank do you currently hold within your department?

( ) Firefighter

( ) Inspector/Code Official

( ) Fire and Life Safety Educator

( ) Engineer/Driver

( ) Lieutenant

( ) Captain

( ) Battalion Chief

( ) Division/District Chief

( ) Assistant Chief

( ) Deputy Chief

( ) Chief

( ) Other:

14) How many career fire departments have you worked for in your career?

15) Did you feel you had to join another department for the advancement of your career?

( ) Yes

( ) No

16) What did you do personally do to assist in your own advancement?

17) Is there anything else you would like to share regarding your advancement through the ranks or any additional information that you feel should be shared regarding advancement?

Personal Experiences and Perceptions

18) Please answer the following

	Yes	**No**
I have experienced different treatment because of my gender.	( )	( )
My gender has created barriers to my career advancement.	( )	( )
Males and females are treated the same during the training academy and/or probationary period.	( )	( )
Males and females are treated the same during the applicants' physical ability screening.	( )	( )

Promotions are decided upon fairly.	( )	( )
Personnel in my department are treated differently because of their sexual orientation.	( )	( )
The hiring process in my department fairly selects and hires applicants.	( )	( )
I have received coaching/mentoring from senior personnel in my department.	( )	( )

19) How important is mentoring for women in the fire service?

( ) Not important

( ) Somewhat Important

( ) Important

( ) Very Important

( ) Extremely Important

20) Please answer the following

	Yes	**No**
Would you recommend the fire service profession to other women?	( )	( )
Have you tried to recruit other women into the fire service?	( )	( )
Have you had success in recruiting other women into the fire service?	( )	( )

21) Based on your time in the fire service, do you believe that you have experienced any of the following? (check all that apply)

[ ] N/A - I have not had these types of experiences

[ ] Social isolation (i.e. being isolated from your crew or other women)

[ ] Privacy issues (dormitory, restrooms, showers)

[ ] Verbal harassment

[ ] Pornography

[ ] Sexual advances

[ ] Sexual discrimination (Sex discrimination occurs when employment decisions such as selection, evaluation, promotion, or reward allocation are based on an individual's sex rather than on productivity or qualifications)

[ ] Sexual harassment (As defined by the EEOC: Unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature constitutes sexual harassment when submission to or rejection of this conduct explicitly or implicitly affects an individual's employment, unreasonably interferes with an individual's work performance or creates an intimidating, hostile or offensive work environment.)

[ ] Threats of violence

[ ] Physical assault

[ ] Increased performance expectations based on your gender

[ ] Denial of certain work assignments based on your gender

[ ] Denial of certain training opportunities based on your gender

[ ] Denial of certain station assignments based on your gender

[ ] Hazing (i.e. victim of pranks, forced to do things other crew members were not asked to do)

[ ] Offensive notes, cartoons, or other printed material

[ ] Other

Please rate the severity of the experience:

Not severe at allSlightly severeModerately severeVery severeExtremely severe

22) My immediate supervisor addresses complaints concerning gender-related issues.

( ) Yes

( ) No

( ) Unsure

23) Have you ever filed a grievance or formal complaint within your organization for gender-related issues?

( ) Yes

( ) No

Was the grievance/complaint resolved to your satisfaction?

( ) Yes

( ) No

24) Have you ever taken external formal legal action (ie. lawsuit, EEOC complaint) against your department for gender-related issues?

( ) Yes

( ) No

Was the legal issue resolved in your favor?

( ) Yes

( ) No

If you are a union member, was the union involved in your legal action?

( ) Yes

( ) No

Demographic

25) Gender:

Congratulations! You have reached the last section of the survey. After the previous questions these may sound simple, but they are just as important so please be sure to answer them all.

( ) Male

( ) Female

26) How old are you?

27) What is your race?

( ) Caucasian

( ) African-American

( ) Hispanic or Latin

( ) Asian-American

( ) Multi-Racial

( ) Other:

28) Which best describes your marital status?

( ) Single (including divorced, separated, widowed)

( ) Couple (married or partnership)

( ) Other (please state):

29) What is the highest level of formal education that you have obtained?

( ) High school diploma/GED

( ) Some college

( ) Associate's degree

( ) Bachelor's degree

( ) Master's degree

( ) Doctoral degree

30) What is your degree and major?(e.g. Associate's degree Fire Science)

31) In what range does your current annual income fall?

( ) < $25,000

( ) $25,001-$35,000

( ) $35,001-$45,000

( ) $45,001-$55,000

( ) $55,001-$65,000

( ) $65,001-$75,000

( ) $75,001-$85,000

( ) $85,001-$95,000

( ) >$95,000

32) What was your starting salary?

33) What is your current salary?

34)

Request to Participate in Interview

Thank you again for completing the initial survey for this project. The results are invaluable in helping others understand issues facing females in the fire service at all levels.

If you are willing to participate in an interview to further elaborate on your responses, please click YES and you will be redirected to another page within 2 seconds where you can enter your contact information and preferred method of contact. If you prefer not to participate in an interview simply click NO and you will be directed to close your browser.

Remember, no personal identifying information will be used in order to protect your confidentiality. The interviews will ask for more detailed descriptions of answers provided in the online survey. A separate, more detailed informed consent will be presented to those wishing to participate in the interview process. Thank you for taking the time to participate in this research project. I hope you will consider participating in the one-on-one interviews so that your experiences can help other women as they choose to enter the fire service and/or advance in the profession.

( ) Yes

( ) No

Thank You!

Appendix D

Destruction of Data Confirmation Letter

WIDGIX, LLC dba SurveyGizmo
4888 Pearl East Circle
Suite 300 W.
Boulder, CO 80301
Phone: 800.609.6480
Fax: 425.920.8175

Dear Barbara,

This letter is to confirm that all files, database records and backups of data associated with account ID 224637 have been destroyed.

Best Regards,

Joshua Nielsen

Appendix E

Barriers to Women's Advancement in the Fire Service

Barriers	Key Authors/Citations	Key Concepts/Findings Within the Literature
Tokenism	Kanter 1977 McDonald et al. 2004 Zimmer 1988	Token women Social status token women Tokenism in the workplace
Role Conflict	Kane 1992 Varvel 2009 Greenfield 1980 Ruble et al. 1984	Gender stratification Gender and role conflict among firefighters Attitudes and background factors facing women in male-dominated jobs Sex stereotypes and barriers
Occupational Segregation	Reskin & Bielby 2005 Browne 2005 Lewis & Nice 1994	Stratification and div. of labor Women in blue collar occupations Segregation in state/local governments
Glass Barriers	Maume 1999 Bell et al. 2002 Budig 2002	Glass ceilings and elevators Discrimination, harassment and glass ceilings Glass escalator
Occupational Mobility	Elliott & Smith 2004 Smith 2002 Reskin & Bielby 2005	Gender and workplace power Gender and job authority Gender and career outcomes
Organizational Culture	Ward & Winstanley 2006 McTague et al. 2009 Yoder 1988 Schein 2010	Culture and sexual minorities in the workplace Organizational approach to sex segregation Sexist discrimination in the workplace General organizational culture

Appendix F

Concepts and Their Definitions

Key Concepts	Definitions
Tokenism	"Tokens are those treated as representatives of their category, as symbols rather than individuals." "Tokens are not merely deviants or people who differ from other group members along any one dimension. They are people identified by ascribed characteristics (master statuses such as sex, race, religion, ethnic group, age, etc.) or other characteristics that carry with them a set of assumptions about culture, status, and behavior highly salient for majority category members." (Kanter, 1977)
Occupational Segregation	"Occupational segregation is the distribution of people based upon demographic characteristics, most often gender, both across and within occupations and jobs." (Bergmann, 1981)
Glass Barriers	"The glass ceiling metaphor refers to occupational segregation attributed to barriers that restrict women's access to certain types of jobs or restrict them to certain types of jobs within an organization." (Kerr et al., 2002)
Occupational Mobility	"The movement of an occupational group itself, or of an individual member of an occupation, or of an occupational vacancy, through the stratification system of social space" (Marshall, 1988).
Organizational Culture	"A pattern of shared basic assumptions that the group learned as it solved its problems that has worked well enough to be considered valid and is passed on to new members as the correct way to perceive, think, and feel in relation to those problems." (Schein, 2010)

Appendix G

Dependent and Independent Variables

Type	Concepts	Conceptual definition	Indicator presence/absence	Variables
DV	**Upward mobility**	"The movement of an occupational group itself, or of an individual member of an occupation, or of an occupational vacancy, through the stratification system of social space" (Marshall 1988).	Whether or not respondent has been promoted additional ranks since entry	Number of promotions? Years between promotions? Rank held?
Inhibitors/Obstacles				
IV	**Sexual harassment**	"Unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature constitutes sexual harassment when submission to or rejection of this conduct explicitly or implicitly affects an individual's employment, unreasonably interferes with an individual's work performance or creates an intimidating, hostile or offensive work environment" (EEOC 2013).	Whether or not respondent has reported experiencing any acts of sexual harassment	Experienced verbal harassment? Experienced gender-based derogatory comments? Experienced sexual advances (ask for date, sex?) Experienced pornography?
IV	**Sexual discrimination**	"Sex discrimination occurs when employment decisions such as	Whether or not respondent has experienced discrimination in employment based	Years of education? Gender created barriers to career advancement? Males and females treated

		selection, evaluation, promotion, or reward allocation are based on an individual's sex rather than on productivity or qualifications. Job qualifications can be defined to include educational or professional credentials, length of service, experience, and/or performance" (Blanchard & Crosby 1989).	on sex	equally during academy? Less-qualified applicants promoted ahead based on gender?
IV	**Glass barriers**	"The glass ceiling metaphor refers to occupational segregation attributed to barriers that restrict women's access to certain types of jobs or restrict them to certain types of jobs within an organization" (Kerr et al. 2002).	Whether or not respondent has been assigned to positions deemed more suited for females (i.e. prevention/education)	Current job title? Denial of certain work assignments? Denial of certain station assignments?
IV	**Organizational culture**	"A pattern of shared basic assumptions that the group learned as it solved its problems that has worked well enough to be considered valid and is passed on to new members as the correct way to perceive, think, and feel in relation to those problems"	Whether respondent has experienced behaviors attributed to fire service culture (i.e. hazing) and the perceptions of severity of those instances	Experienced acts of hazing? Experienced isolationism in the firehouse? Experienced privacy issues in the firehouse? Experienced degradation related to gender (i.e. sexist comments, cartoons, images)?

		(Schein 2010).		
Facilitators/Strategies				
IV	**Affirmative action**	"Affirmative action can be defined as attempts to make progress toward substantive, rather than merely formal, equality of opportunity for those groups, such as women or racial minorities, which are currently under-represented in significant positions in society, by explicitly taking into account the defining characteristics – sex or race – which have been the basis for discrimination" (Mullen 1988).	Whether respondent has filed an affirmative action complaint with EEOC; has the respondent benefited from affirmative action policies or programs.	Affirmative Action complaints filed? Was it resolved to your satisfaction?
IV	**Consent decrees**	"One entered by consent of the parties; it is not properly a sentence, but is in the nature of a solemn contract or of the parties, made under the sanction of the court, and in effect an by them that the decree is a just of their rights upon the real facts of the case, if such facts had been proved" (*Black's Law Dictionary* 2009).	Whether respondent has been involved in legal proceedings resulting in consent decree	Awarded a consent decree?

IV	**Lawsuits**	"An action or a suit brought before a court, as to recover a right or redress a grievance" (*Black's Law Dictionary* 2009).	Whether respondent has brought legal action against a person/department/ municipality	Filed a lawsuit (individual, class action)?
IV	**Training**	"Training on the job, ranges from formally organized activities such as apprenticeships and other training programs to the informal processes of learning from experience" (Mincer 1962).	Whether respondent has been afforded equal training opportunities and educational opportunities for career advancement	Denied equal training opportunities?
IV	**Mentoring**	"Mentoring involves an intense relationship whereby a senior or more experienced person (the mentor) provides two functions for a junior person (the protégé), one function being advice or modeling about career development behaviors and the second function being personal support, especially psychosocial support" (Kram 1985).	Whether respondent has been afforded an informal or formal mentor	Received coaching/mentoring from senior personnel in department?

Appendix H

Variables and Measurement

Variables	Level of Measurement	Measures of Association	Tests of Significance	Literature References/Citations
Rank (DV)	Interval	Pearson's R	F-test	National Report Card on Women in Firefighting (2008). Hulett, D., Bendick, M., Thomas, S., and Moccio, F. (2008). Rosell, E., Miller, K., and Barber, K. (1995).
Years of service (DV)	Ratio	Pearson's R	F-test	National Report Card on Women in Firefighting (2008). Hulett, D., Bendick, M., Thomas, S., and Moccio, F. (2008). Rosell, E., Miller, K., and Barber, K. (1995).
Educational level (IV)	Ratio	Pearson's R	F-test	National Report Card on Women in Firefighting (2008). Hulett, D., Bendick, M., Thomas, S., and Moccio, F. (2008). Rosell, E., Miller, K., and Barber, K. (1995).
Number of promotions (IV)	Ratio	Pearson's R	F-test	National Report Card on Women in Firefighting (2008). Hulett, D., Bendick, M., Thomas, S., and Moccio, F. (2008). Rosell, E., Miller, K., and Barber, K. (1995).
Experienced touching (IV)	Nominal	Lambda	Chi-square	National Report Card on Women in Firefighting (2008). Hulett, D., Bendick, M., Thomas, S., and Moccio, F. (2008). Rosell, E., Miller, K., and Barber, K. (1995).
Experienced offensive jokes/remarks/ Gossip (IV)	Nominal	Lambda	Chi-square	National Report Card on Women in Firefighting (2008). Hulett, D., Bendick, M., Thomas, S., and Moccio, F. (2008). Rosell, E., Miller, K., and Barber, K. (1995).
Experienced sexual advances (IV)	Nominal	Lambda	Chi-square	National Report Card on Women in Firefighting (2008). Hulett, D., Bendick, M., Thomas, S., and Moccio, F. (2008). Rosell, E., Miller, K., and Barber, K. (1995).
Experienced sexual assault (IV)	Nominal	Lambda	Chi-square	National Report Card on Women in Firefighting (2008). Hulett, D., Bendick, M., Thomas, S., and Moccio, F. (2008). Rosell, E., Miller, K., and Barber, K. (1995).
Experienced hazing (IV)	Nominal	Lambda	Chi-square	National Report Card on Women in Firefighting (2008). Hulett, D., Bendick, M., Thomas, S., and Moccio, F. (2008). Rosell, E., Miller, K., and Barber, K. (1995).
Experienced isolationism (IV)	Nominal	Lambda	Chi-square	National Report Card on Women in Firefighting (2008). Hulett, D., Bendick, M., Thomas, S., and Moccio, F. (2008). Rosell, E., Miller, K., and

				Barber, K. (1995).
Experienced privacy issues (IV)	Nominal	Lambda	Chi-square	National Report Card on Women in Firefighting (2008). Hulett, D., Bendick, M., Thomas, S., and Moccio, F. (2008). Rosell, E., Miller, K., and Barber, K. (1995).
Benefitted from affirmative action policies (IV)	Nominal	Lambda	Chi-square	Grube-Farrell, B. (1994).
Filed affirmative action complaint (IV)	Nominal	Lambda	Chi-square	Grube-Farrell, B. (1994).
Awarded a consent decree (IV)	Nominal	Lambda	Chi-square	Grube-Farrell, B. (1994).
Filed a lawsuit (IV)	Nominal	Lambda	Chi-square	Grube-Farrell, B. (1994).
Equal access to training and education (IV)	Nominal	Lambda	Chi-square	National Report Card on Women in Firefighting (2008). Hulett, D., Bendick, M., Thomas, S., and Moccio, F. (2008).
Had formal mentor (IV)	Nominal	Lambda	Chi-square	Bozeman, B. and Feeney, M. (2007). Pollock, R. (1995). Hulett, D., Bendick, M., Thomas, S., and Moccio, F. (2008).
Had informal mentor (IV)	Nominal	Lambda	Chi-square	Bozeman, B. and Feeney, M. (2007). Pollock, R. (1995). Hulett, D., Bendick, M., Thomas, S., and Moccio, F. (2008).
Significance of mentoring (IV)	Ordinal	Gamma	Spearman's Rank Order Correlation	Bozeman, B. and Feeney, M. (2007). Pollock, R. (1995). Hulett, D., Bendick, M., Thomas, S., and Moccio, F. (2008).
Severity of sexual harassment (IV)	Ordinal	Gamma	Spearman's Rank Order Correlation	Arvey, R. and Cavenaugh, D. (1995). Rosell, E., Miller, K., and Barber, K. (1995).
Severity of sexual discrimination (IV)	Ordinal	Gamma	Spearman's Rank Order Correlation	Arvey, R. and Cavenaugh, D. (1995). Rosell, E., Miller, K., and Barber, K. (1995).

VITA

Barbara R. Russo

Candidate for the Degree of

Doctor of Philosophy

Thesis: WOMEN FIREFIGHTERS' STRATEGIES FOR ADVANCEMENT IN THE FIRE SERVICE: BREAKING DOWN BARRIERS IN GENDER-BASED OCCUPATIONS

Major Field: Fire and Emergency Management Administration

Biographical:

Education:

Completed the requirements for the Doctor of Philosophy in your Fire and Emergency Management Administration at Oklahoma State University, Stillwater, Oklahoma in December, 2013.

Completed the requirements for the Master of Science/Arts in Fire and Emergency Management Administration at Oklahoma State University, Stillwater, Oklahoma in 2010.

Completed the requirements for the Bachelor of Science in Sociology/Criminal Justice at Averett University, Danville, Virginia in 1988.

Experience:

Program Director and Assistant Professor of Fire and Emergency Services Administration at Fayetteville State University (NC), 2012-present.

Division Chief of Training and Standards at the City of Jacksonville (NC) Fire Department, 2009-2012.

Program Director and Instructor of Emergency Preparedness Technology at Wayne Community College (NC), 2004-2009.

Professional Memberships:

Member of the International Association of Emergency Managers.

Member of the NC Society of Fire and Rescue Instructors.