A CORRELATION STUDY OF GENDER-BASED COMPENSATION IN THE CONSTRUCTION INDUSTRY

By

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A Dissertation Presented in Partial Fulfillment

of the Requirements for the Degree

Doctor of Management in Organizational Leadership

University of Phoenix

July 2011

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Abstract

More and more companies recognize the need to improve the diversity of their employees and management in order to remain competitive in the global marketplace. The purpose of the quantitative correlation study was to explore gender-based compensation inequities within the U.S. construction industry using archived survey data gathered in 2007 during the Construction Management Association of America annual conference in Las Vegas, Nevada. By employing descriptive and correlation analysis, compensation factors were analyzed that found gender-wage inequities for specific compensation factors in the construction industry and four significant relationships between compensation factors and gender. Inequities were identified in the descriptive analysis of compensation factors that included (a) base salary; (b) additional compensation; (c) base increase per year; (d) educational background; (e) time off; (f) tuition benefits; (g) vehicle allowance; and (h) retirement benefits. The compensation factors that favored men were additional compensation, base increase per year, educational background, time-off, and vehicle allowance, while base salary and retirement benefits favored women. No inequity was found between entry-level compensation and professional development. Significant relationships were found in correlation analysis between gender and time-off, base salary and additional compensation, tuition and retirement benefits, and time-off and vehicle allowance. Future research was recommended to further investigate the significant relationships identified, and to consider qualitative methods to explore perceptions and experiences of gender-based compensation inequities in the construction management industry.

Dedication

Of highest significance is my thankfulness to God who gave me continued strength during this program of study and reminded me to have patience and keep the belief all things happen for a reason. This dissertation is dedicated to my co-workers, college friends new and old, lost relationships that did not sustain the length of this journey, Aries, and to my mother, Alice. I will always be thankful for her continued support and encouragement that filled my heart and soul, especially during the times that were hard to continue. This accomplishment is as much as her success as it is mine.

Acknowledgments

With the support and encouragement of many has emerged the success of my doctoral journey. My sincere thanks go out to my mentor, Dr. Robin Throne, for her direction and rally round support throughout the dissertation process. I would also like to recognize Dr. Throne's expertise and her unwavering patience during the process. In addition, I would like to thank my committee members, Dr. Stacey Mulder and Dr. Lee Burch for their advice, expertise, and support throughout the doctoral journey.

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Chapter 1: Introduction

After the United States Armed Forces, the construction industry is the largest employer in the United States (U.S.) (Sims, 2007). According to the 2002–2012 U.S. Department of Labor State of the Construction Industry Report, construction is the only goods-producing sector in which employment is projected to grow, creating a new demand for competent office management and leaders in the construction industry (Sims, 2007). The 2000 U.S. Census Bureau reported median annual earnings for construction managers of $50,000 for year-round, full-time workers, but women were paid only 80% of what men earned (Weinberg, 2004). The nonexperimental correlation study was an exploration of trends associated with gender-based compensation inequality as related to leadership roles and duties in the construction industry. Other stereotypical variables in the industry have been explored and discussed. Chapter 1 presents an overview of the study background, problem, purpose, and design. The study scope, limitations, delimitations, assumptions, and definitions are also provided.

Background of the Problem

Historically, women have substantially represented themselves in the American workforce. For example, the U.S. Department of Labor Occupational Safety and Health Administration (OSHA) reported that nearly 60% of women age 16 and over participate in the workforce (1999). While women have established a presence in occupations traditionally held by men, the construction industry remains predominantly male (Pineiro, 2009). According to the U.S. government, during the autumn of 2006, “the average hourly wage of women working full-time in the U.S. was 17.2% lower than men, and women part-time workers earnings were 38.5% less” (Burd, & Davies, 2006, p. 13). The

statistics highlight the continued gender inequalities in compensations since the Equal Pay Act of 1963 was implemented over 45 years ago.

Recent census data indicated that the income gap has been growing. For example, in the state of Georgia between 2006 and 2007, 5% of the incomes in Georgia's richest households rose to $295,255, more than a 10% increase (Grantham, 2008, p. 1). Conversely, the income of the 20% of middle-range households rose by less than 5% to $49,139 (p. 1). Statistics reported by the U.S. Department of Labor showed "apparent wage differences between men and women, but the reasons for the inequity require further study" (as cited by Weinberg, 2004, p. 4). The construction industry is a nontraditional employer of women. The predominant perception of the male-dominated construction industry is that workers require "brute strength and a good tolerance for outdoor conditions, inclement weather and bad language" (Agapiou, 2002, p. 594).

With the continuing increase of job opportunities in the construction industry, it has become more important to study stereotypical variables that may enlighten the reasons for pay inequality among leaders in construction management (Sims, 2007). Previous studies have determined the existence of gender-based compensation inequality without detailing the cause (Bilbo, Burt, Kumar, & Spiegel, 2003). Discovering stereotypical variables of the construction industry could reveal an underlying problem, as well as identify and reconcile gender-based unequal pay in leadership roles. This study is an exploration of trends associated with gender-based compensation inequality for leadership roles in the U.S. construction industry.

The Economic Mobility Project reported, "a trend of income inequality that was mirrored nationally among the poorest 20% of households earning only 3.4% of total

income resulted in a 15% drop over two decades" (Bilbo, Burt, Kumar, & Spiegel, 2003, p. 1). Current government leaders are endorsing legislation to deal with the problem of gender-based compensation inequality, which continues to be a serious problem for women in the workforce (Grantham, 2008). When more traditional corporate organizations implemented strategies to increase diversity, effectiveness within the workplace improved (Bishop, Scott, & Burroughs, 2000).

The Catalyst Group (Prime & Carter, 2005) recently collected data on organizations devoted to building wide-ranging environments and growing opportunities for women that demonstrated stereotyping is alive and well. Men are seen as "influencing, delegating 'problem solvers' and women are still seen as supportive, consultant 'caretakers" (Hogg, et al. 2006, cited in Roberts, 2005, p. 10). The income inequality proves to be even greater as stated in the *Leadership Quarterly* "when leader demographics and norms vary significantly from those of the other group members" (Hogg et el., 2006, p. 340).

Companies that address diversity issues as business issues, not just as human resources issues, will acquire rewards both inside and outside the company, especially concerning genders (Levin & Mattis, 2006). In 2002, women made up 46% of all U.S. labor force professions, including managerial, professional, and related jobs, which represented an increase from 29.6% in 1950 (Levin & Mattis, 2006). Nonetheless, "more than 45 years have passed since the Equal Pay Act was ratified, and women still tend to receive less pay than men with similar educational backgrounds, skills, and experience" (American Federation of Labor and Congress of Industrial Organization [AFL-CIO], 2009, p. 1).

More and more companies recognize the need to improve the diversity of their employees and management in order to remain competitive in the global marketplace (Offerman & Gowing, 1990; Yaprak, 2002). "Women comprise a highly educated group from which corporate America may want to recruit and develop as future leaders to be leaders in the global marketplace" (AFL-CIO, 2009, p. 1). The study clarifies the factors that affect pay inequality between men and women leaders in the construction industry.

Statement of the Problem

The general problem is that women tend to be paid less than men for the same job in spite of the Equal Pay Act governing and ensuring gender equities in workforce management. According to the U.S. Census Bureau, in 2007, women were paid only 77 cents for every dollar a man was paid (AFL-CIO, 2009, p. 1). "Women of color were paid even less, at 72 cents for every dollar a man was paid" (AFL-CIO, 2009, p. 1). In May 2007, the U.S. Supreme Court ruled, "women who believe they are being denied equal pay must file suit within 180 days after the discrimination occurs" (AFL-CIO, 2009, p. 1).

The female presence is increasing in the U.S. labor pool; yet, there is also a growing need to study leadership in the context of gender-based compensation inequalities related to leadership in the construction industry (AFL-CIO, 2009). The study is a quantitative correlation study. The nonexperimental correlation study utilized archived data collected from a survey administered at the 2006 Construction Management Association of America (CMAA) annual conference held in Las Vegas, Nevada. The archived survey data include self-reported information on 2007 salaries,

benefits, and demographic information from construction management professionals from nine U.S. regional divisions.

Purpose of the Study

The purpose of the quantitative correlation study was to explore gender-based wage inequities within the U.S. construction industry. Specifically, the study used archived survey data gathered in 2006 during the CMAA annual conference in Las Vegas, Nevada, regarding 2007 compensation. The survey data, which included quantitative salary and benefits information and self-reported perspectives by construction management professionals in response to their compensation earned in 2007 served as archived data for the study (CMAA, 2006).

A correlation research study is an opportunity to foretell results and explain the relationship among variables (Creswell, 2008). In a correlation research, no attempt is made to control or manipulate the variables as in experimental design; however, the correlation statistic is used to describe and measure the degree of relationship between two or more variables or sets of scores (Creswell, 2008; Lappe, 2000). Typically, the individual or small group of individuals being examined possess some skill or an unusual problem. In the current study, the problem was gender-based salary and benefits inequities in leadership positions in the construction industry.

A quantitative correlation study was deemed the most appropriate approach for the study design since the purpose of the study was to explore compensation factors related to gender inequality within the construction industry, and specifically at the management level. By gathering quantitative survey data from the annual CMAA conference in Las Vegas, Nevada, data analysis provided insights on the perceptions that

are associated with gender inequality in the construction industry. Whereas, a qualitative phenomenological study may be initially best to study structures of experiences, or consciousness, a quantitative correlation study was deemed best to initially explore perceptions within the industry to provide further insight into gender-based compensation inequality.

Significance of the Study

The significance of the study was characterized by the continued expected growth of the construction industry, even though it under-utilizes women leaders who have joined the predominately male industry (Goldenhar, Hunting & Welch, 2000). "Women in the construction industry earn 20% less than their male counterparts, prompting an investigation of the factors that existed between inequality of wages and stereotypes of leaders in regards to gender" (Weinberg, 2004, p. 12). Successful corporations respond to current and future leadership needs in order to continue to attract new hires and retain "minority executive talent" (Green, 1999, p. 1). A report from Building California Construction Careers (BC3) (2007) stated, "equal pay isn't just a women's issue," (Green, 1999, p. 2) "when women get equal pay, their family incomes rise and the whole family benefits," (Green, 1999, p. 2). The report also noted that equal pay ensures basic justice and fairness and enhances basic family economics.

Significance of the study to leadership. Rivaled only by the U.S. Government and Armed Forces, the construction industry was the second largest employer in the nation, (Sims, 2007). Construction positions at every level offering both hourly wages and salaries and ranging from entry-level to executive leadership provide gratuitous employment opportunities. However, "the success of a company depends on how it

utilizes the talent within the organization" (Greene, 1999, p. 1). Identifying the trends and factors that may lead to inequitable compensations between men and women can improve an industry who may be under-utilizing women who represent almost half the managers in the U.S. companies. The purpose of this study was significant to the field of leadership in the construction industry by which it offers a more equitable wage standard that may result in a more efficacious organizational body that accommodates both genders (Management Issues, 2008).

Nature of the Study

The purpose of the correlation study was to explore gender-based compensation inequalities within the U.S. construction industry. The study utilized a correlation design to analyze archived quantitative surveyed data from the CMAA to identify the relationships between factors that may illustrate inequality of compensation and other benefits among leaders in construction management. The key principles of the correlation approach as applied in this study were to indentify association between compensation variables and gender. The response to the survey questions offered nominal and numeric data for analysis. This approach offered an initial understanding of gender-based pay inequality and relationships between compensation factors in the construction industry (Finlay, 1999).

Descriptive statistics were used in the analysis for the quantitative responses and were followed by correlation analysis. Microsoft Excel® 2007 Data Analysis Pack was used to prepare and examine the quantitative data, and SPSS 19.0 was used to assess relationships between variables using Spearman's rho due to the nominal-level data used for this analysis. Once the data were collected and prepared, the descriptive and

correlation data analysis were applied to assess the strength of relationships between the study variables as they related to gender-based compensation inequality in the construction industry.

The Construction Management Association of America (CMAA) was the only organization in North America that is exclusively organized on behalf of the interests of professional construction and project management. In 2006, a quantitative survey was used to collect responses related to construction management salaries and benefits from the professional members of the CMAA's nine regional U.S. divisions regarding 2007 wages and other compensation (CMAA, 2008). Archived data from this survey was used for the current study to explore the voluntary responses from 418 construction management professionals representing every part of the country.

The American Professional Constructor similarly reported a study that confirmed the existence of a gender-based wage gap in the construction industry (Bilbo et al., 2003). Bilbo et al., (2003) attempted to identify and evaluate the factors that may contribute to the wage differential within construction, but the results confirmed the need for further in depth analysis. Thus, the current study investigated specific trends related to gender-based compensation inequality in the construction industry. According to Creswell (2009), conducting a qualitative or mixed methods research study would likely be ineffective for the current study as no qualitative data were collected during survey administration. Furthermore, a naturalistic study is inappropriate to answer the research question, as it is less statistically rigorous and robust than a quantitative correlation study design.

Overview of the design appropriateness. The correlation study is frequently used as a means for looking for relations between variables when experiments cannot be done to collect and examine the data. The study design is appropriate to investigate associations among variables (Davis, Gamble, Humphries, Mitchell, & Pendergrass, 2011). The goal of the research was to explain or explore in-depth a unit of analysis in order to identify and determine if there is a relationship between two or more variables. In general, a correlation study is a quantitative method of research in which two or more quantitative variables are from the same group of subjects (Waters, 2011). The correlation design was well suited as preliminary research to determine the need for further studies that can be done to evaluate cause and effect relationships between variables and inferential methods of analyses (Lappe, 2000).

Similarly, a quantitative correlation study was appropriate because it involved the collection of data to determine whether, and to what degree, a relationship existed between two or more quantifiable variables (Gay, 1992). Creswell stated "a correlation is a statistic, its use in research has contributed to a specific research design called correlational research. An explanatory correlational design explains or clarifies the degree of association among two or more variables at one point in time" (Creswell, 2008, p. 343). This was applied to the current study by investigating how gender inequality affects management within the construction industry based on nominal and numeric responses to an industry survey. This evidence was in the form of archived data of the self-reported perceptions of construction officials as well as archived statistical data in response to 35 survey questions with a discrete set of response choices. Not only was gender inequality substantiated, but implications of the research problem were also

evidenced by the survey responses of the participants. In this way, the data analyzed established a comprehensive, full-dimensioned argument that warranted further research.

Research Questions

A U.S. Department of Labor report reflected apparent gender-based wage differences; however, the reasons for gender-based pay inequality required further study (Weinberg, 2004). The factors of the wage differences between men and women managers were explored through the analysis of the perceptions of construction management leaders as voluntarily reported in a CMAA survey. The following research questions served to guide the study:

RQ_1: Do gender-based wage inequities exist within the construction management industry?

RQ_2: What is the relationship between gender-based compensation factors in the construction management industry?

Theoretical Framework

Employment theory. The classical theory of employment has two fundamental hypotheses (a) wage is equal to the marginal product of labor; and (b) the utility of the wage when given volume of labor is employed is equal to the marginal disutility of that amount of employments (Keynes, 2007). In the late 1970s and early 1980s, black and white employment and wage inequality in the labor market was a problem confronting primarily workers – particularly women (Bound & Freeman, 1992). According to Aticha Suebsawangkul, economic inequality is subjective and difficult to measure; this is why the debate whether it is increasing is indefinite. For Weber (1978), “economic inequality is not only economic, but also political and societal. The implication is that economic

inequality is innate because of the exiting of different classes and status groups in a society. Economic inequality will become a social problem when economically irrational consumption patterns are created." Brown (1999) said, "economic inequality in the United States continues to be inextricably linked to both race and gender, even after many years passage of civil rights in 1964." As Keynes (2007) noted in the *General Theory of Employment, Interest, and Money*, the lack of competition between resources is not a measure to reduce wage or benefits, and may be a stereotypical variable of pay inequality is gender-based. Given these theoretical constructs, previous studies reported the 'salary gap' between men and women within the U.S. workforce, and prior studies and statistical research have already determined the existence of inequality of wages between men and women in the construction industry (Bilbo et al., 2003; Conry, 1998). However, these past studies were limited to the presentation of the wage gap and often had limitation in explaining the differences in pay scales in construction management that were not addressed.

Workforce stereotypes. According to a study presented at the 2003 Women in Construction Week Conference, "Women contribute to the construction industry in a variety of ways. Whether as an engineer, architect, tradeswoman, safety consultant business owner or any of many careers in construction, women in construction play important roles "(Bilbo et al., 2003, p. 19). Given the common perception of the construction industry as male-dominated, the industry is changing and adapting with growing numbers of women employees. Findings from the U.S. Labor Statistics report (2006) indicated that gender-based wage inequality was the result of various forces,

including different characteristics that men and women bring to the workplace as well as discrimination toward women by employers (Bilbo et al., 2003).

Nelson (2005) found that the lack of women in nontraditional roles perpetuated societal messages that women were marginalized and denied equal senior leadership roles. Typical perceptions of the male-dominated construction industry are that workers are physically strong with traditional beliefs about male and female roles, work styles, work-life balance, and the stereotype of the good old boys club that excludes women (Agapiou, 2002; Dainty & Lingard, 2006).

Pay inequity as myth. Gender-based wage inequality was not universally accepted as a workforce issue. In the article, *The Wage Gap for Women is a Big Myth*, Kerrigan (1999) dismissed pay scale assumptions about women in the workplace. The study maintained that women were achieving pay equality in the business sector and were continuously decreasing and eliminating the so-called wage gap. Kerrigan also purported that the glass-ceiling phenomenon was declining and, in fact, could have been a myth. Men have often been discriminated against, receiving lesser pay from their female counterparts (Bilbo et al., 2003). Nonetheless, earnings statistics reports from the U.S. government indicated that women were paid less than their male counterparts, substantiating the continuation of gender-based pay inequities (Bilbo et al.; Kerrigan; U.S. Labor).

Definition of Terms

The following operational terms are used throughout the study:

Construction industry: The industry is divided into three major segments or three types of construction. The first is the construction of building segments, which includes

contractors; who build residential, industrial, and commercial buildings. The second is heavy and civil engineering constructions that build sewers, roads, highways, bridge, and tunnels. The third is specialty trade contractors that perform specialized actions related to carpentry, painting, plumbing, and electrical work (Bureau of Labor Statistics, 2008-2009).

Construction management: A project delivery method through which the client retains a construction manager to provide certain preconstruction expertise, which includes cost estimating, value engineering, and scheduling. During the construction phase of the project, the construction manager will coordinate all construction activities (University of Colorado, 1997).

Equality of Pay Law of 1963: An amendment to the Fair Labor Standard Act of 1938, which is a federal law that requires employers to pay all employees equally for equal work, regardless of their gender (Pogeman, 2009).

Glass ceiling: The glass ceiling phenomenon entails attitudinal, behavioral, and organizational bias that prevent qualified minorities from advancing to senior management positions (Cox & Smolinski, 1994).

Stereotypes: Stereotypes are usually oversimplified, rigid, and generalized beliefs about groups of people in which all individuals from the same group are regarded as having the same set of characteristics. Stereotypes of members of a national, religious, or racial group may affect the impressions people form of individuals who are identifiable members of that group (Clutterbuck & Ragins, 2002, p. 114).

Workforce diversity: Policies and practices that seek to include people within a workforce who are considered different from those in the existing population (McInnes, 1999).

Assumptions

Assumptions are concepts that are accepted as truths or "statements about the nature of things that are not observable or testable" (Creswell, 2005, p. 49). Two assumptions guide the study: (1) the archived data from CMAA are truthful and accurate and (2) findings of the study are evaluated objectively and free from personal biases of the researcher. These assumptions ensure that the conclusions and recommendations generated in the study are reflective to the real environment and occurrences being studied.

Scope and Limitations

The scope of the study is confined to survey responses of the 418 construction management professionals on the subject of their compensation, including salary and benefits, as contained in the CMAA archived survey data (CMAA, 2007). The sampled population in the 2006 CMAA archived survey was limited to the construction professional working in the construction industry in the U.S. Data generated from the survey captured perceptions at point in time rather than over an extended period of research. There were also sufficient limitations since the survey was anonymous and accuracy of responses could not be validated. The thoroughness of the CMAA staff administering the screening measure may also have had an effect on the internal validity of the CMAA survey. Other confounding or extraneous variables that could have had an effect on internal validity included, but not limited to: truthfulness of responses given by

participants, participant's motives or secondary gains, and administration issues of the CMAA survey.

The study was also limited by the lack of published research of compensation inequality in the construction industry, limiting the ability to provide reference sources within the past 5 years. On the other hand, the data collected from the CMAA survey method and the approaches in gathering the data may have influenced validity (Creswell, 2005). Finally, a limitation existed from the limited sample size, and that perceptions were limited only to conference attendees and membership in one industry organization.

Delimitations

A delimitation of the current study is that the sample was not randomly selected from the entire construction industry; rather, it was drawn from the membership of CMAA, and the CMAA archived survey database provides the basis for sample selection. The generalizability of the research findings is limited as the sample is not necessarily representative of a larger population. The study was further delimited to the CMAAS archived survey data with which the qualitative data was further investigated to ascertain emerging themes in the light of the research question sought in the study. This was supported by quantitative data regarding the perceptions of those in management positions in the construction industry in order to determine factors that may contribute to compensation inequity and its influence within the construction management industry.

Summary

As early as the 1990s, many economists have explored the gender-based wage inequality in many industries (Mitra-Kahn, 2006). Sims (2007) highlighted the findings on inequality of wages based on labor statistics. However, in spite of numerous

investigations, explanations for gender-based compensation inequities have not been derived from the relevant literature. The purpose of the correlation study design was to explore gender and compensation factors in the light of ongoing gender-based compensation inequities within the U.S. construction industry (AFL-CIO, 2009; Bilbo et al., 2003; Finlay, 1999; Green, 1999). Chapter 2 presents the review of the relevant literature related to gender-based compensation inequality, assumed roles in the construction industry, construction leadership and management, and an overview of previous and current U.S. discrimination law. Chapter 2 also includes a review of industry-specific issues regarding promotion policies and the socio-historical trends of the industry.

Chapter 2: Review of the Literature

The correlation study explored factors in light of gender-based compensation inequities within the United States (U.S.) construction industry. The study utilized archived survey data gathered in 2006 during the CMAA annual conference. Similarly, the data included projected 2007 salary and benefits information as self-reported by the construction management professionals (CMAA, 2007). A correlation study research design was employed to investigate factors of the gender-based compensation inequities in the construction management industry.

Chapter 2 presents a review of the available literature pertaining to the research problem. This chapter includes an analysis of the research on men and women compensation variations, gender roles in the construction industry and management, U.S. discrimination laws, leadership roles and duties in construction management, and the promotion trends in the construction industry. Secondly, the review also presents a historical overview of the background and issues of business economics within the construction industry. Finally, the chapter also identifies a gap in the research literature related to the gender-based compensation and duties in the construction industry.

Documentation

The literature review was drawn from germane scholarly information published from 1985 to 2009 to generate the fullest dimension of both historical and contemporary literature in the review. The title searches garnered the context to identify and locate data relevant to the subject of the study. The scope of the literature review includes the glass ceiling, discrimination, gender, race, feminist theory, organizational culture, leadership

theory, job satisfaction, male-dominated cultures, construction, women in the construction industry, and women in management positions.

The literature review included a search through the online databases of EBSCOhost and ProQuest to obtain past and current peer-reviewed journal articles on the primary concepts in the study. The primary areas of research investigated the construction industry and its management practices. Search results revealed sources that included journal articles, books, dissertations, and web sites. Key words that were used in order to procure the literature used in this study from these resources include glass ceiling, women's advancement, gender and leadership, women executives, discrimination, senior executive service, organizational culture, gender diversity, and a combination of these terms in order to ensure optimal relevance.

Theoretical Construct of the Gender-based Compensation

According to Keynes (2007), the framework of the *General Theory of Employment, Interest, and Money* stated that a lack of competition between resources is not a measure to reduce wages or benefits, which may be a stereotypical variable of pay inequality between males and females (Keynes, 2007). The classical theory of employment has two fundamental hypotheses; the first is that wage is equal to the marginal product of labor, and the second states that the utility of the wage when given a volume of labor employed was equal to the marginal disutility of that amount of employment (Keynes). Given these theoretical constructs, there were previous research studies conducted reporting the 'salary gap' between men and women within the U.S. workforce (Conry, 1998). Prior studies and statistical research have already determined the existence of inequality of compensations between men and women in the construction

industry (Bilbo et al., 2003). However, these studies were limited to the presentation of the wage gap and often had the limitation to explaining the differences in pay scales in construction management.

According to Women in Construction Week Conference held on 2003 (as cited by Bilbo et al, 2003), "Women contribute to the construction industry in a variety of ways. Whether as an engineer, architect, tradeswoman, safety consultant, business owner or any one of many careers in construction, women in construction play important roles" (Bilbo et al, 2003, p. 19). Given the common perception of the construction industry as male-dominated, the industry has been changing and adapting with growing numbers of women employees.

Historical Overview of Compensation and Working Women

Since 1850, census documents have reported earnings (sum of wage and salary incomes and self-employment income) by occupations for all workers listing men and women separately. Referencing the Census 2000 Report, Weinberg (2004) identified the inequalities of earnings (wages) of men and women by classified occupations in 509 categories, including four special codes for uniquely military occupations. The report clearly showed that women earned less than men for every earning distribution in the same occupation. The report however, was limited to identifying geographic locations, educational opportunities, industrial growth, culture, marriage, and employment practices. It excluded gender-based preferences, work history and experience, and other factors that could have been linked to differences in wages (Weinberg).

Glass ceiling. A majority of the germinal research documented the persistent nature of the glass-ceiling phenomenon (Bell & Nkomo, 1994; Catalyst, 2000; DOL,

2006; Morrison & Von Glinow, 1990; Naff, 1994). Glass-ceiling barriers have been identified as corporate culture, male-dominated work environments, lack of mentors, lack of career advancement opportunities, and lack of informal social networks (Catalyst, 2000, 2008). The glass ceiling research timeline indicated in Table 1 provides background for understanding the glass-ceiling phenomenon.

Table 1

Glass Ceiling Research Timeline

Period	Highlight
1985-1986	Glass ceiling terminology introduced and first coined (Hymowitz & Schellhardt, 1986).
1986-1990	Research focused on documenting the effects and proving the existence of the glass ceiling (Morrison & Von Glinow, 1990).
1991-1995	Research focused on describing the glass ceiling phenomenon and the importance to organizations and to society as a whole (DOL, 1991, 1992; FGCC, 1995; Naff, 1994).
1996-2000	Research focused on developing approaches to shattering the glass ceiling, such as mentoring (Catalyst, 2000; Morrison & Von Glinow, 1990; White 2007).
2001-2005	Research focused on examining if the glass ceiling still existed and exploring the glass ceiling as a global phenomenon (Cotter et al., 2001; Lockwood, 2004; Naff, 2001)
2005–2008	Research focused on reassessing progress in cracking the glass ceiling, international research, and alternative views. Strategies to address the glass ceiling focused on changing organizational culture rather than fix the person or human capital excuses (Browne & Misra, 2003; Catalyst, 2008; Combs, 2003)

Note. Adapted from Cracking the glass ceiling: Catalyst's research on women in corporate management (p. 145), by Catalyst, Copyright 2000, New York: Catalyst Group.

Women and social identity. Identity has been a main driving force in society and is a vehicle of integration into the workplace. Personality therefore is an essential

component in assimilating not only on a macroscopic level of society, but into the workforce or countless other subgroups. Cote's (2002) *identity capital model* is based on personality (who one is), interaction (how one presents one's self) and social structure (how one is socialized). This model perceived gender positions as a very influential factor to how women are perceived, treated, and accommodated for, in the workplace.

Cote (2002) in stated that the model represents a sociological approach to the development of personal identity. The model integrated various theoretical conclusions within both psychological and sociological fields as they applied to identity. It was founded on the assumption that contemporary institutional support for development was progressively insufficient, leaving most people to their own inexperienced devices in setting and achieving objectives (Cote, 2002).

Personal identity has been a projected conceptualization of the self. It deals more on the trajectory of choice than monetary gain. Croft (2007) stated these trajectories can be simplified into a "default with the identity passively flow along a pre-defined or designed lifestyle choice and where individualization was merely a facade based on consumer choice - and 'developmental' with the identity actively forming by interacting with oneself and other and the environment towards a reflexively formed individualized lifestyle" (Croft, 2007). Lifestyle therefore becomes an important backdrop when considering economic growth.

Paap (2006) took this model a step further when she recounted experiences in the labor force in the construction industry. Results of Paap's survey revealed that women often found it outrageous, or 'crazy' to entertain the idea of going into a field traditionally reserved for men. In addition, Paap found that a great deal of women had not even made

plans after college, relinquishing their life goals to the traditional role of homemaker, despite talent or professional potential. Indeed, Paap concluded that some women were "more willing to walk away from money than they were to look 'crazy'" (Paap, 2006, p. 10).

Historically, women's lifestyle revolved around the idea of home and children while men were the breadwinners. However, since the late 1960s, there has been a surge of female presence in higher education and the workforce. Identity has served as representative of a shift in social conscience where women are not viewed as the prize, but rather the competition. The lifestyle of the past for women has now become an actual choice rather than a social standard. This could potentially result in negative responses from men. As members of the gender that has been hitherto perceived to be superior, it may be hard for men to accept women in equal professional positions. Hence, social tensions and unjust business practices may ensue.

Women and culture. Unlike identity capital, culture capital references material perceptions. Culture capital is based upon the notion of the socio-cultural status. Bourdieu (1992) describes culture capital as "aristocratic, as it assumes the position of benefiting mostly the educated and upper echelon of society," (p. 11). The belief in a social hierarchy determines superiority that can be analyzed further in the light of the sender-based inequities. Culture capital therefore can very easily be a biased structure based on gender, ethnicity, and class. Skeggs (2004) stated that social capital was a process that considers culture an exchangeable value deeming certain endeavors and practices an enhancement of the overall value of self-perception. An example of this

could be activities such as visiting galleries, museums, and ballets, which are considered concurrently moral and necessary to enrich social interaction.

The investment in cultural practices fortifies identity. One of the most frequently occurring was the inheritance of cultural capital through family (e.g., inheritance) (Dubner, 2008). The *nouveau bourgeoisie* depend more on the progression of cultural capital morphing into educational capital. Educational capital solidifies social class. It reinforces job stability, wealth, and lifestyle. Thus, one can see the interconnectivity between identity, culture and educational capital as each one affects the other respectively. In culture capital, the economic advantages are delegated by the infrastructure of a society where, in this case, numerous discrepancies already existed in the distribution of wealth (Skeggs, 2004).

Social classes have been positioned based on who was included in each class, and how one can pass from one class to another. Often, this sort of conceptual framework resulted in the disenfranchisement of minority groups, whether these groups are perceived minorities due to ethnicity, gender, or affluence. Unfortunately, some frameworks may be able to supersede others, which educational background and the monetary familial background does little to affect the perceived gender role of women (Bruckner, 2004).

Women and human capital. Human capital has been considered the transfer of skills and knowledge into economic gain, the very foundation of the workforce and is the product of identity, culture, and social and education capital. More importantly, human capital has been viewed from a lens of gender. Becker (1993) argued that investments of human capital are a rational response to changes in the social infrastructure, such as the

broadening of education for women. For example, in the 1960s, women were more likely than men to graduate from high school, but graduates were less likely to continue to college. Furthermore, those who did attend college typically avoided studies in the sciences, business, and law, and instead gravitated toward humanities studies that could potentially enrich their household maintenance once they became wives and mothers. This situation has changed dramatically since, with the female population in many post secondary institutions outnumbering the male population across all fields of study.

In the vast surge of women in the workforce (especially married women) one sees a markedly increased value in market skills of women, ignoring the traditional belief imposed on women in the workforce, and providing the avenue to women entering the historically male-dominated fields of study and research (Becker, 1993, p. 19). Human capital is simply the value of the person producing. The shift into contemporary society has redefined human capital as gender specific and no longer dominated by one sex. Instead, one sees human capital in terms of identity, education and culture capital. The gendered presence of human capital has implied that women have created a significant ripple within the workforce.

Women and social capital. Baker (2000) stated "social capital in personal and business networks include information, ideas, leads, business opportunities, financial capital, power and influence, emotional support, goodwill, trust, and cooperation" (p. 1). The capital was not solely owned and communal, hence the term social. Therefore, it was more along the lines of whom one knows rather than what one knows. Social capital has been very closely related to culture capital. The examples of a child introduced and enrolled in ballet, or attending galleries, are points of networking. Much like culture

capital, social capital intertwines the two by (a) the disposition that culture capital usually leaves a person; and (b) what the person does with the opportunities vested. Thus, networking becomes a by-product of lifestyle or education. Clearly, the better institute you attend or work for will definitely improve ones contacts and economic mobility.

The definition of "individualism – the cultural belief that everyone succeeds or fails because of individual efforts and abilities - is merely a myth and an obstacle for social capital" (Baker, 2000, p. 2). It is an impossibility to establish a variable, relative scale for a standard perspective based on a set of generally acknowledged principles. If capital is derived from the perceptions of others, then the perceptions of self only serve to affect how one applies him or herself to a goal—but not the perceived outcome. The collective is far stronger than the one, as evidenced in the emergence of women in the workforce. While the presence of women in the workforce has been challenged, increasing the number is undeniably uncontrollable. However, social capital cannot solely exist without human capital. A requirement for all other capitals to exist equates to the existence of human capital.

Women and emotional capital. Emotional capital generates devotion, generosity, and solidarity. Bourdieu argued that the "responsibility of conveying emotional capital vastly falls upon women, as they are largely perceived to be responsible for maintaining relationships" (Bourdieu as cited by Reay, 2004, p. 57). Emotional capital is the most explicitly gendered capital that focuses on the relationship between a mother and the child's educational development (which coincides with social capital). Like all the prior capitals, each starts within the family, where the mother has the central role in emotional development. Generally, emotional capital "is confined within the

bounds of affective relationships of family and friends and encompasses the emotional resources you hand on to those you care about" (Reay, 2004, p. 60).

Since emotional capital appears solely in the private sector, such as the home, as opposed to the public sector, as with both social and culture capital; it implies that the engendered capital is somewhat moot and confined only to the children and husband (Reay, 2000). Therefore, the disadvantage for the woman has been on a broader scale amd limited her productivity mainly to the home. However, a clear and decisive emotional attachment to children and an invested interest into their education created productive members on a larger scale thus influencing society in all forms of capital (Reay, 2000).

Emotional capital therefore becomes a basis toward human capital, productivity, and social networking. As relationships within the home have been fundamental to a child's development, so is his or her relationship with the outside world. Despite Bourdieu's (as cited in Reay, 2000) insistence that emotional capital is strictly female, it is without doubt that the relationship between father and child and siblings is as important as the vested emotional relationship with the mother. Unfortunately, the expectation of emotional capital investment is on the mother, with little more expected of the father than to earn money. This once again reinforces perceptions that are carried into other forms of capital. The result reinforces perceptions that women belong at home and in support of their families rather than pursuing careers (Skeggs, 2004).

To deny emotions of other family members – especially the father, regardless of the historical roles, is to limit the objectivity of capital. Paula England (2002) argues that such a "*separative* model for capital presumes that humans are autonomous, impervious

to social influences, and lack sufficient emotional connection to each other to make empathy possible" (Paula England, 2002, p.154). Thus, the emotional relationship present in families is not confined to the home in reality; instead, it plays into identity, culture, and social capitals.

Typical stereotypes in male-dominated industries. The U.S. Department of Labor defined a "nontraditional occupation for women as one in which less than 25% of those employed in the field were women" (U.S. Department of Labor Women's Bureau, 2009, p. 1). "Women could expect to earn 20% to 30% more in a construction career than in a more traditional woman's career" (BCCC, 2009, p. 3). Women are generally expected to enter the retail and service fields, which are two of the lowest paying fields in the workforce (Bruckner, 2004). Nonetheless, women can also expect to earn 20% less than men in the construction field especially regarding leadership positions (Weinberg, 2004). Therefore, although it could be asserted that there has been a wage gap between women and men in the workforce due to a difference in career affinity, there are more focused instances of compensation disparity that may be gender-based.

Williams (1991) presented powerful gender stereotypes in occupations in her book, *Gender Differences at Work.* William interviewed male nurses and female marines to explain how men and women attempted to maintain their traditional gender identities in role-reversal occupations. Williams used psychoanalytical theory to investigate gender differences and gave details on men's and women's respective personas that originated from "early life experiences and thus shape people's future expectations of their roles" (1991, p. 10).

Williams reported that gender roles were reinforced by policies that limited women and men from participating in nontraditional occupations. Nelson (2005), on the other hand, stated that the lack of women in nontraditional roles sent a message to society that it was acceptable to marginalize women and deny them equal senior leadership roles. As a result, women are perceived, and thus regarded in a certain way before their efficacy in their professional positions has been assessed. This only reinforces presuppositions about women's participation in the workforce, even in the event of expedition performance at the workplace.

Paap (2006) introduced an explanation for men's perceived dominance in the construction field. Quoting one carpenter's opinion of women's intentions when they enter the construction field, Paap exemplified attitudes of men in response to women in the workforce, especially when a woman was filling a perceptively masculine position: "Well, you're either bitch, a dyke, a whore, you're looking for a boyfriend, or you're looking for a lawsuit" (Paap, 2006, p. 79). Paap explained that this was because to men who feel this way, it was inconceivable that a woman would actually fill a position in a field like construction unless she harbored ulterior motives. Ultimately, it was a negative response conveyed sincerely due to preconceived notions fostered by socially imbued gender roles.

Self-perceptions of women. Although the global workforce has become increasingly *feminized*, the majority of women migrate toward positions such as domestic workers, sex workers, or entertainers (Thapan, 2005). Nonetheless, "[women] now identify themselves as being more independent" (Thapan, 2005, p. 2). Due to the lack of female homogeny in the workforce described in previously explored literature, women do

not necessarily have a standard interest in workforce pursuit, and although there was a predominance of women in the service industry, there was no shortage of women in high-profile, high-income professional fields. According to Takhar (2003), "women are thus able to exercise agency through these organizations which [*sic*] have also developed into service providers." Male authority has coped with such women-centered social groups and microcosms that have developed in pursuit of networking and collective social power.

According to Cohn and Useroff (2009), women find it difficult to communicate with males in their workplace. Without a feasible standard of communication that can be sustained between genders, there will always be the possibility of conflict. For women to be effectively introduced into the workplace, cooperation was needed from both the business entities when hiring women and the men who will be working alongside with the women. Fishman (2009) stated, "Women find men to be more competitive" and some are ready to grab attention and acclaim for new ideas and concepts (Fishman, 2009, p. 1). Perrewe and Nelson noted that "being assertive in the workplace, without being too aggressive, is a skill that both sexes should learn" (Perrewe & Nelson, 2004, p. 368).

Invisibility was not only a social problem that prevents women from being acknowledged in the workforce, but also a way that women perceive themselves. Data from the 1996 Canadian Census concluded, "that only 9.4% of registered nurses employed in Canada identify themselves as members of a visible minority" (Andrews, Boyle & Carr, 2002, p. 2). Andrews, et al. highlighted the report from the Bureau of Labor Statistics, which reported that the growth of Hispanic women in the workforce was 85%, and Asian women was 83%,; Hispanic men was 68% and Asian men was 61%,

Black women was 33%, Black men was 24%, and of White women was 22% (Andrews, et al.).

Feminine and female capital. Bourdieu (2001) indicated that the current social distinction between genders was accepted generally as a natural order of things, and either as normative, inevitable, or both. Not only that there are 'sexed' institutions (such as the work environment or the home), the whole of the social world has been developed around an infrastructure based on "schemes of perception, thought, and action" (Bourdieu, 2001, p. 8).

The observation of Bourdieu (2001) in a gendered society illustrated the relevance of gender in human capital. Feminine and female capital refers to the skills and knowledge women possess within the economic market. "Laws, cultural beliefs, and other discriminatory practices have excluded most women from politics, religious leadership, military positions, and traditionally male crafts and professions within paid employment" (England, 2007, p. 155).

These exclusions are significant as they draw the lines of worth between female and male capitals. The roles and the importance of women have always held true to domestic duties of family, children, and husband. Under a strict patriarchal pedagogy, the female capital failed to be anything outside the confines of the home. Such myopic rewards fall short of the positions that yield the highest honors, power, and money.

Although few records of the first women to work in the construction industry exist, *Rosie the Riveter* was an iconic symbol for women who filled jobs of the male employees who joined the armed services during World War II. In fact, the Rosie the Riveter Memorial was founded in 2000 in Rosie the Riveter Memorial Park in Richmond,

Virginia to honor American women's labor contributions during WWII. "Rosie the Riveter may be iconic, but women executives in construction have faced an uphill battle securing contracts in a male-dominated industry" (Luby, 2008, p. 1).

Gender-based leadership styles. Men have typically been characterized by a strong and authoritative style of leadership (Bass, 1996). Van Vianen and Fischer (2002) concluded that organizations were based on traditional values and belief systems that were embedded into society. Van Vianen and Fischer also supported a belief that masculine cultures or substructures "consist of hidden assumptions, tacit norms and organizational practices that promote forms of communication, images of leadership, and organizational values, which are stereotypically masculine" (Van Vianen & Fischer, 2002, p. 316).

Research showed that men were more likely than women to become leaders in a men and women group (Carli & Eagly, 2001). In society, leadership and leadership skills were based on role models that were typically reserved for men. "If there are emotion-expression differences between men and women, and if emotion is linked to effective leadership, then a reasonable area for exploration is the extent to which men and women leaders differ in their expression of emotion" (Callahan, Hasler & Tolson, 2005, p. 513). Research results revealed that women showed more emotion in leadership positions than their male counterparts (Vecchio & Van Rooy, 2004).

Men and women also differed in the language they used in the workplace. Language played an important role in creating identities with gender, cultural or social interactions (Sheridan, 2007). Conversations of women tended to be more intimate than those of men did; men would interrupt more and were less likely to ask questions

(Sheridan, 2007). Language differences caused communications problems between men and women in the workplace. Research showed that men used organizational jargon more than women, which negatively affected the advancement of women (Sheridan).

Men and women also had different leadership styles. Men and women used a range of transformational leadership styles in the workplace (Schyns & Sanders, 2005). Bass (1996) found that women were more relationship-oriented and connected better with their employees, which gave them an advantage over men in leadership positions.

Men and women also differed in strategy (Wolfram, Mohr & Schyns, 2007). Research results showed that women tended to lead in a more democratic manner, whereas men had a more autocratic leadership style (Wolfram et al., 2007). The results confirmed that women used a gentler approach and were more expressive than their men counterparts (Wolfram et al., 2007). Leadership was typically based on men traits and ideals; women leaders who had different styles were evaluated negatively (Wolfram et al., 2007). Another factor that impeded women from succeeding was sexual discrimination and workforce discrimination (Tindal, 2006). Drew (2005) believed that the lack of advancement of women was due to hitting a glass ceiling in the workforce.

Dillon (2008) noted women qualities in leadership as a primary factor in attaining upper-level positions. Dillon stated that women were better positioned than men to meet today's leadership expectations based on the new style of leadership that deviated from standard rules and created new ones. A McKinsey and Company study (as cited in Dillion, 2008) identified four characteristics that helped women move into senior leadership positions. These are meaning, managing energy, positive attitude, and engaging (McKinsey & Company as cited in Dillon, 2008).

Drakich and Stewart (2007) identified five traits that characterized today's new leadership style: relationship building, effective communications, listening skills, sharing information, and power. The new leadership style was creating a deeper sense of trust with the organization (Drakich & Stewart, 2007). At the opposite end of the spectrum, women were held to stricter standards than their men counterparts (McKinsey & Company as cited in Dillon, 2008).

Defining the glass ceiling. Leaders at the U.S. Department of Labor created the Report on the Glass Ceiling Initiative (NSF, 2006). The glass ceiling was defined as an unseen obstruction or ceiling created by an organization that may have a bias, which put a stop to qualified minorities from moving upward into senior leadership positions (NSF, 2006). The Commission identified three types of artificial barriers that affected the advancement of women.

The first was the societal barrier, which could not necessarily be controlled by an organization. A societal barrier related to educational opportunity and stereotyping that was unconsciously and consciously evident in society (NSF, 2006). Stereotyping included bias or prejudice toward ethnicity, race, or gender (NSF, 2006). The second was the artificial barrier, which was an internal structure that businesses could control. The barrier related to corporate cultures and climates that may have alienated women with a lack of mentoring, lack of training, and a lack of career advancement opportunities (NSF, 2006). The third barrier was government. Government barriers included a lack of enforcement of equality laws or reporting or disseminating correct information about the glass ceiling (NSF, 2006).

The Glass Ceiling Commission surveyed corporate male executives and results from the report suggested that men and women had different ideas about the glass ceiling. Male CEOs believed that the glass ceiling was no longer a problem for women, and believed that white and minority women had reached equal pay status (NSF, 2006). In 2002, data from a report by the U.S. Government Accountability Office, entitled *A New Look Through the Glass Ceiling: Where are the Women?* indicated little progress had been made since the 1995 Glass Ceiling Commission Report (Dingell & Maloney, 2002).

In 2005, Catalyst conducted a report called *Women and Men in U.S. Corporate Leadership: Same Workplace, Different Realities?* Results from the study indicated that women and men attempting to move into leadership positions aspired for advancement; both had similar strategies that were used to advance into these positions, but women faced more cultural hurdles in attempting to advance into senior leadership positions than men (Doak, 2006). The report also addressed barriers such as gender-based typecasts, restriction from male networks, lack of mentors, and an unfriendly corporate environment (Doak, 2006).

Conversely, gender-based compensation inequality has not been universally accepted as a workforce issue. In the article, *The Wage Gap for Women is a Big Myth,* author Kerrigan (1999) dismissed pay scale assumptions about women in the workplace. The study maintained that women were achieving pay equality in the business sector and were continuously decreasing and eliminating the so-called wage gap. Kerrigan also stated that the glass ceiling phenomenon was declining and, in fact, could have been a myth, and further noted that men were often being discriminated against, receiving lesser pay from their women counterparts. Nonetheless, earnings statistics reports from the

U.S. government indicate that women were paid less than men counterparts, prompting the research study to investigate this inequity.

Workplace equal rights laws. In 1991, the Civil Rights Act prohibited discrimination against women and mandated penalties for those who failed to abide by the act (Jackson, 2003). Despite the legislation, women continued to face barriers in many areas and, in particular, in men-dominated industries. The media introduced the term 'glass ceiling' in 1984 (Baxter & Wright, 2000. The term described a type of invisible barrier minorities may encounter when attempting to move up to higher management positions (Baxter & Wright, 2000).

The U.S. Equal Employment Opportunity Commission [EEOC] monitors federal agency compliance with Equal Employment Opportunity (EEO) laws. The EEOC presented an annual report to Congress with data that gauged the federal government's progress in affirming equal employment policies. Although discrimination was against the law, some forms of discrimination still existed (Dennis & Kunkel, 2004; EEOC, 2006a; Sanchez & Brock, 1996).

Inequality in the workplace experienced by women was a driving force for the establishment of the Federal Glass Ceiling Commission (FGCC) in 1991. The Department of Labor Glass Ceiling Commission created the Civil Rights Act of 1991 to prevent prejudice against women and authorized strict punishment for failure to comply (NSF, 2006). The Federal Glass Ceiling Commission was charged with identifying barriers that prevented the movement of women into leadership positions. The Commission also identified successful practices that would advance women in senior leadership positions (Jackson, 2003). Findings from the Commission suggested that a

glass ceiling was a significant factor in preventing women and minorities from entering into top-level positions (Jackson, 2003).

The Federal Glass Ceiling Commission (1995) convened town hall meetings and gathered personal stories and testimonies from women across the country documenting problems with glass ceilings in corporate America. Findings from the FGCC (1995) indicated that glass-ceiling barriers existed at all levels of organizations and affected people at different levels. Women faced varied issues and barriers that were often difficult to describe.

Women have traditionally held a small percentage of the top senior positions in Fortune 500 companies (Catalyst, 2005). Women have been attempting to reach equality in the workplace since they entered the work environment. According to Black (2008), even though women continued to face barriers when entering into leadership positions, change was taking place as women were gaining access to positions that had previously been dominated by men. Women continued to struggle with what was called the glass ceiling (Bailey & Cervero, 2008). The glass ceiling described the invisible glass barrier that prevented women from advancing to senior leadership positions in organizations (Singer, Cassin & Dobson, 2005). This suggested that the tradition of women holding a small percentage of upper-echelon positions within organizations was deliberate. Further research may reveal ways of avoiding factors that lead to the glass ceiling, especially in the intentional counterproductive behavior of members of the organization.

The National Association of Women in Construction (NAWIC), which was founded in 1953 by a group of sixteen women who worked in various positions within the construction industry, indicated various responses in the perceived state of minority

of women in the workforce (Rigg, 2009). The association was founded to deal with the fact that women represented only a small fraction of the construction industry. The founders organized NAWIC to create a support network. The Association gained its national charter in 1955 and became the National Association of Women in Construction (Rigg, 2009). According to NAWIC's marketing director Julie Lyssy, the number of women in construction fields was expected to increase to about 10% (Rigg, 2009). Part of the reason may have been that women, just like men, could apprentice in the various aspects of the industry without having a formal education.

Labor statistics have steadily tracked the trends in various industries within the U.S. *Management Today* (Burd & Davies, 2006) reported, "that average hourly earnings for women working full-time were 17.2% lower than men, while women part-time worker's earnings were 38.5% lower" (Burd & Davies, 2006, p. 5). The statistics reflected that compensation inequality has not changed since the Equal Pay Act was implemented more than 45 years ago. As previously mentioned, this may be a result of organizational avoidance due to gender-based unjust business practices, gender biases of organizational leaders or coworkers, or the preferences of women themselves.

The Women and Work Commission was expected to recommend a comprehensive makeover for equal pay laws to possibly allowing employees to bring about class action and require employers to appoint 'equality representatives' with power to demand information about salaries from corporations (Burd & Davies 2006). The Employment Appeal Tribunal ruling launched a tougher test for employers seeking to justify paying men and women differently for equal work (Burd & Davies, 2006). The Women's Ownership Act of 1988 was a government regulation that mandated the hiring

of women in construction firms. A survey of the Center for Women's Business Research (2005; as cited in Luby, 2008) revealed the Act had increased the number of women-owned construction businesses nationwide up to 57% from 1997 through 2004, according to a 2005 survey by the Center for Women's Business Research (Luby, 2008, p. 2).

Current Findings

Construction employment was predicted to continue its strong growth. The surge in retirements by the baby boomers will coincide to the increasing construction employment (Brown & Jacobsohn, 2008). Construction jobs paid far better wages than traditional 'women's work,' making them an attractive option for the millions of women mired in poverty. In 2008, a significant ratio of one of every 25 construction workers were women (Brown & Jacobsohn, 2008).

According to the U.S. Bureau of Labor Statistics, the construction industry was the second-largest employer in the country with over 10 million workers; 10% of the number were women. Of the 10% only about 26%, or 291,000, held management positions (Luby, 2008, p. 1). A study conducted in 2005 for the New York City Council found that of the $6 billion in construction contracts awarded by the city during 1997 to 2002, only 6.85% were awarded to women-owned businesses (Luby, 2008, p. 1).

Discrimination had been an issue in women's advancement of women position in the construction industry. According to Dainty and Lingard (2006), construction companies inhibited women's careers through their work practices and culture. Based on the evidence, ingrained structures and work practices combined with restricted choices for women prevented attempts to create an equitable workplace environment (Dainty & Lingard, 2006). The authors contended that construction companies could implement

organizational and cultural shifts, including work-life balance and eliminating gender bias, necessary to overcome the negative effects of indirect discrimination on women's careers in the future. This could result in a much more cohesive and constructive environment that concentrates less on demographical differences and more on productivity.

Work-life balance was an issue that affected ability of the women to be successful managers. Work-life conflict had a damaging effect on job satisfaction, organizational commitment, productively turnover and absenteeism (Lingard, Brown, Bradley, Bailey & Townsend, 2007). On an individual level, work-life conflict was associated with employee burnout, mental health issues, and substance abuse accompanied by diminished family functioning (Lingard et al., 2007). Work-life balance was an important issue to the construction industry, in terms of both organizational effectiveness and occupational health. Long and inflexible work hours were the most consistent predictors of work-life conflict among construction employees. Evaluations indicated that alternative work schedules could improve construction employees' work-life balance, creating benefits for both employees and the organizations (Lingard et al., 2007).

Physical issues related to the advancement of women in the construction industry have been identified. Rigg (2009) reported that the work was physically demanding and women had to have a strong desire to do the necessary work. Women had to keep fit and were expected to carry their load just as the men did, often using adapted equipment such as high jacks (Rigg, 2009). Nonetheless, it has been concluded that the main determinant for a women's success in the field has been their desire; however, coupled with the

necessary ethic, women can be just as effective as men in completing the necessary duties pertaining to their job description.

Ingrained societal biases also affected the success of women in the industry. Luby (2008) reported that if the government were building a bridge in 1988 for $300 million, about 5% of that budget would go to women (Luby, 2008, p. 2). Today, the percentages are only slightly higher, and women were urged to shed Women Business Enterprise status and compete with male-owned companies (Luby, 2008). Organizational constraints have resulted in the hindrance of women advancement in the construction workforce. Factors that contribute to this fact have not been identified. It may prove informative to ascertain the justification behind the budget allotment disparity.

An analysis of the leadership roles of women in the construction industry revealed ambiguity. Despite the existence of affirmative action programs designed to improve the position of women in public construction, little has changed in the last 25 years (Blanchflower & Wainwright, 2005). The growth in incorporated self-employment rates of women in construction was significantly higher than that of men (Blanchflower & Wainwright, 2005). The data suggested that some of the companies were 'fronts' actually run by spouses or sons to take advantage of affirmative action programs (Blanchflower & Wainwright, 2005).

Sexual discrimination also negatively affected the success of women. "The good old boys' club was a group of men within an organization who frequently excluded women, reflecting the fact that 'cultural beliefs' about masculinity and femininity were built into the very structure of the work world" (Williams, 2006, p. 76). Literature on the

subject presented a breadth of reflections and intimations presenting evidence of perceptions regarding gender roles and leadership positions.

For example, Cheryl McKissack, CEO of the McKissack Group, stated, “Construction projects with private developers are limited, because it means breaking into the long-established ‘boys club’ for a piece of a closely held pie. Many firms don't want to share the arena because it means less for them” (Luby, 2008, p. 2). Lenore Janis, CEO of ERA Steel Construction, was the first woman to run a steel erection firm in the early 1980s in New York State. When she started out as a single mother of two children, she often experienced the isolation of being a woman in a man's world. She said, “Every general contractor let me know that if he had his druthers he preferred not to work with a woman, but that the government was forcing him to, the fact that I was a low-bidder didn’t seem to register” (Luby, 2008, p. 2).

Being a woman in a male-dominated industry presented many obstacles. NAWICs marketing director, Julie Lyssy, said the biggest thing that needed to change was education. “Women don’t typically think of construction as a career. Since 90.4% are men, women are not necessarily encouraged to go into the construction fields. Things will get better, there are more and more women enrolling in architecture programs” (Rigg, 2007, p. 2). Paap (2005) reaffirmed this when she discussed the perceptions of women and their career paths, often leading them to the service and retail industries, or to be homemakers, with perceived gender roles attributed to each potential occupation.

Mentoring was one approach that helped women succeed in the construction industry. Del E. Webb School of Construction of the University of Arizona established an *Advancing Women in Construction* program designed to help students learn from

pioneering women who had risen to leadership positions in the business (Kullman, 2008). More than 70 women in the construction industry in the greater Phoenix area signed on to mentor women students and provide them an inside look at life in the industry (Kullman, 2008). According to Carol Warner, president and chief operating officer for Johnson Carlier, an Arizona-based construction contracting company, the successful leaders were concerned about the future of the profession. Further, Warner stated that there was an insufficient base of professional builders and skilled workers, necessitating further workforce development that improves communication skills, organization skills, and team-building skills (Kullman). Further, Warner stated that there was an insufficient base of professional builders and skilled workers, necessitating further workforce development that improves communication skills, organization skills, and team-building skills (Kullman).

The associations played a role in supporting women's advancement in construction. Professional Women in Construction (PWC) was established to change the public's perception about women in construction and to promote the abilities of women and minorities in the construction industry (Garry, 2003). This served as one step toward the improvement of the perception of women in the workplace.

Fraser (2000) proposed that construction site manager career progression might have been affected by personal characteristics that traditionally related to industry stereotypes. Systematic identification and examination of stereotypes was needed to ensure that "human resource management policy is indeed justifiable" (Fraser, 2000, p. 29). In a survey of 61 site managers, Fraser identified correlations between personal characteristics and the effectiveness of construction site managers. The results identified

26 personal factors that appeared to be important factors in effective performance. The results of the study may possibly aid construction managers in making more informed decisions about recruiting, retaining, and promoting site managers.

Gaps in the Literature

Findings from the U.S. Labor Statistics reports indicated that gender-based wage inequality was the result of various forces, including different characteristics that men and women bring to the workplace as well as discrimination toward women by employers (Bilbo et al., 2003). These forces largely originated from perceptions of women and their subordinate gender role, with accompanying presumptions such as physical inadequacy and lack of leadership capability.

Nelson (2005) stated that the lack of women in nontraditional roles sent a message to society indicating that women were marginalized and denied equal senior leadership roles. Typical perceptions of the male-dominated construction industry were workers should be physically strong with traditional beliefs about men and women roles, work styles, work-life balance, and the stereotype of the good old boys club that excludes women (Agapiou, 2002; Dainty & Lingard, 2006; Luby, 2008).

Other gaps include a lack of exploration of the attractiveness of professional women to men-dominated industries. Some women may be discouraged from being full-time professionals because women who choose to be mothers or who choose not to endure gender-related compensation disparities. These women may be more attractive to men who want to concentrate solely on their careers, the welfare of their families, and their perceived social roles. Furthermore, little research has been conducted related to female satisfaction in dedicating herself to the workforce, thereby shirking a traditional

family life and contemporary marriage. Lastly, other variables including cohabitation and family and other types of social support were not considered adequately in the literature. An exploration of women's perceptions of the social infrastructure that they encounter in their career position may be studied further to determine women's perceptions of social equality in the workforce.

Conclusions

Despite legislation that has been passed to ensure workplace equality, and despite the fact that the construction industry was one of the few sectors that was expected to grow with women still under-represented as managers. Luby (2008) reported that the construction industry was the second-largest employer in the country with over 10 million workers, but only 10% of the number were women. Of those women, only about 26%, or 291,000 women, were in management positions (p. 1). Blanchflower and Wainright (2005) reported that even though affirmative action programs were designed to improve the position of women in public construction, little has changed in the last 25 years.

Women still faced a range of barriers, from traditional views of the roles of men and women to resistance from men in the construction profession to welcome women into the field. According to Dainty and Lingard (2006), male-dominated construction companies and traditional male-dominated work practices and culture, combined with restricted choices impeded the career growth of women in the industry. Lenore Janis, President of PWC, noted that the advocacy efforts of her organization were directed to increasing opportunities for the 'new kids on the block,' women and minorities with small, fragile businesses (Luby, 2008, p. 2). The literature revealed that although women

were emerging after long years of discriminatory practices by the construction industry and financial institutions, they still faced inequities in pay scales and discrimination based on their gender (Dainty & Lingard, 2006).

Issues of work-life conflict created barriers to the success of women as construction managers. There were many opportunities for construction companies to encourage their organizations to make the cultural shifts necessary to overcome the negative effects of indirect discrimination, such as work-life balance and workplace bias and practices, on women's careers in the future (Dainty & Lingard, 2006). Professional associations and mentoring programs have been created to help young women enter the field and provide support for them during their careers.

Luby (2008) reported that women were typically more optimistic about their businesses. PWC President Lenore Janis took a pragmatic position and said that, maintaining the supporting government goals for women and minority participation on publicly funded projects, the major private companies will develop strong and responsible supplier-diversity programs. She noted that there were "still many good ol' boys that resent and defy our objectives. The bottom line is if they want a government contract, they comply with rules and regulations" (Luby, 2008, p. 2).

Summary

Chapter 2 provided a review of literature pertaining to the research problem, which included an analysis of the research of men and women compensation variations, gender roles in the construction industry and management, U.S. discrimination laws, leadership roles and duties in construction management. Male-dominated construction companies impeded women's careers through their work practices and culture, combined

with restricted choices (Dainty & Lingard, 2006). Chapter 2 also included the framework and models used in the study, the historical overview of the background and issues of business economics within the construction industry. The review revealed that despite the existence of affirmative action programs designed to improve the position of women in public construction, little had changed in the last 25 years (Blanchflower & Wainwright, 2005).

Chapter 2 also reviewed the gap in the research literature related to the gender inequalities of compensations and duties in the construction industry. The literature review revealed inequities in the construction industry due to a wide range of biases, including cultural, social, gender and industry-specific attitudes. Studies revealed that men were more likely than women to become leaders in a combined gender group (Carli & Eagly, 2001).

Finally, the chapter provided insights of the future and potential of careers in the construction industry for women. Enabled by regulations, non-discriminatory legislation, and economic growth in the industry sector, the women could expect to earn 20-30% more in a construction career than in a more traditional career of women (BCCC, 2009). Hence, the study may be useful in providing managers with insights and understanding of the issues that affect gender-based compensation inequalities. Chapter 3 presents the study methodology.

Chapter 3: Methodology

The purpose of the quantitative correlation study was to explore factors related to gender-based compensation inequities within the United States (U.S.) construction industry. The study utilized archived survey data gathered in 2006 CMAA annual conference. Similarly, the archived data included projected 2007 salary and benefits information as self-reported by the construction management professionals (CMAA, 2007). Similarly, the data included projected 2007 salary and benefits information as self-reported by the construction management professionals (CMAA). A quantitative correlation study research design was employed to investigate factors of the gender-based compensation and to address the compensation disparity among men and women in the construction industry. Chapter 3 presents the specific research methods appropriate for the research study.

Research Method

To address the study research question, the quantitative correlation study generated insightful information on the factors that may be attributed to the gender-based compensation inequity in the construction industry in the U.S. A quantitative correlation study was employed to understand emergent themes in the analysis of the archived data from CMAA. The archived survey data, which entails both quantitative and qualitative information, allowed for the analysis of experiences related to gender inequity in the construction industry.

According to Creswell (2009), the qualitative method using largely narrative responses generates the most thorough and detailed information. This was opposed to a quantitative statistical methodology that, although precise, does not provide intimate data

that could only be generated through the analysis of lived experiences as provided by the respondent study population. A quantitative correlation design was the most effective method for the research study as it offered a non-obtrusive approach to the inquiry and resulted in identification of significant relationships between study variables (Finlay, 1999; Creswell, 2009).

The advantage of using converging quantitative evidence was that the usage of real data from the concerned industry, the construction industry. By using real data from the construction industry, all results, findings, and analysis were used to characterize and become the basis of the industry's state on gender inequity. Though sometimes it was difficult to extract real and pertinent data from within a far-reaching industry such as the construction industry, the analysis that was derived from the gathered data was considered valuable and authentic to industry professionals.

Appropriateness of Research Design

The correlation study research design was appropriate for the current study as the correlational method provided quantitative responses based on information collected from the CMAA in 2006. In particular, the 35 CMAA survey questions supplied data in order to determine whether, and to what degree a relationship exists between two or more quantifiable variables (Gay, 1992). Responses to numeric survey questions were used to explore, identify, and critically analyze implications of factors related to gender-based inequalities in the construction industry (see Appendix B). Perceptions of inequality were drawn from these responses, while the quantitative data furnished the study with actual statistical information that concretely supported the existence of a gender-based compensation gap. Creswell explained correlational research design in which the

researcher are interested in the extent to which two variables or more co-vary, where changes in one variable are reflected in changes in the other (Creswell, 2009).

The use of the correlation research design provided information that addressed the research question and objectives of the study. The correlation study design was a valid method to use to explore compensation variables, which included the gender-based inequalities in the construction industry. Conversely, conducting a qualitative or mixed-methods research approach may have been less effective due to the limitation of previous investigations on wage and compensation inequities in the construction industry (Bilbo et al., 2003).

Qualitative research was viewed as inappropriate for the study method choice due to the numerical data collected (Creswell & Clark, 2009). Survey respondents included both men and women in leadership positions in the construction industry. The proposed correlational study identified associations between gender and compensation variables that contributed to inequality of compensation in the construction industry. The goal of the proposed study was to provide a better understanding of the phenomenon of gender-based salary and benefit inequality among construction managers using a nonexperimental correlation design.

Research Question

RQ_1: Do gender-based wage inequities exist within the construction management industry?

RQ_2: What is the relationship between gender-based compensation factors in the construction management industry?

Population and Sampling

The members of CMAA served as the study population. The CMAA was formed in 1982 and operates through 25 regional chapters. The CMAA includes more than 5,000 members including individual practitioners, corporate members, and construction owners in both public and private sectors. Individual membership includes engineers, architects, and contractors. The leadership structure of the organization was comprised of 22 leaders in the field: two of these leaders were women. The study has a total purposive sample of 418 construction management professionals who responded to a 2007 salary and benefits survey, which was the most recent CMAA compensation survey conducted.

Sampling method. The data used for the study were archived by the CMAA. Therefore, a purposeful sampling method was most appropriate for the study. The use of archived research data was considered as a bounded system because they represented a purposeful sample of construction management professionals in the U.S. (Creswell, 2009). All 418 responses to the quantitative survey from construction management professionals were collected for the purposeful sample.

Informed Consent

Since the quantitative correlation study utilized archived survey data maintained by the CMAA, a letter of collaboration was obtained (see Appendix A). In addition, permission was secured to use an existing survey from the CMAA (see Appendix C). Study results and findings were shared with CMAA as requested by the organization.

Confidentiality

Stringent protocols were followed to ensure survey respondent confidentiality. The study data and documentation were secured in a locked filing cabinet. The

confidentiality of each participant in the study was maintained and no personal information was accessible. Survey respondents were assigned unique identification numbers thus the survey data cannot be identified by the name of the participant. The confidentiality of the participant who responded to the 2006 survey conducted by CMAA was maintained. The study data and documentation will be kept on file for a period of 3 years, and then subsequently destroyed appropriately.

Geographic Location

Developing a better understanding of gender-based compensation inequality involves surveying professional men and women leaders in the construction industry. In doing so, limitation to the archived survey data was from CMAA's nine regional U.S. divisions (CMAA, 2007). The geographic location of the survey collection was a 2006 Las Vegas, Nevada, CMAA-sponsored conference.

Data Collection

The CMAA representatives were contacted through telephone and email in order to attain permission to use the 2006 archived survey data (see Appendix A). In 2006, CMAA archived data from a survey of professional members of its nine regional U.S. divisions that focused on construction management salaries and benefits (CMAA, 2008). The archived survey data were collected through voluntary responses from 418 construction management professionals representing every part of the U.S., and provided in electronic format upon request. The archived survey data included information on salary and compensation, and also demographic characteristics such as age, gender, education, and work location.

Instrumentation

The information that was used for this study comes from a previous quantitative survey administered in 2006 by the CMAA to its member professionals from its nine regional U.S. divisions on the subject of construction management salaries and benefits (CMAA, 2008) (see Appendix B). The CMAA survey, an annual survey conducted to determine the perceptions of the construction personnel toward the construction industry, was obtained. This includes information regarding salaries, compensation, and demographic variables (i.e., age, gender, education, work location). CMAA professionals in the field of construction management validated the survey questions prior to administration.

Data Analysis

Microsoft Excel® Data Analysis Pack was used to analyze the quantitative survey data. Quantitative data analysis in the form of descriptive statistical analysis was employed that included a measure of central tendencies (e.g., frequency, mean, mode, median, variance, range, and standard deviation). Demographic characteristics of survey participants and other nominal-level data were also analyzed using descriptive statistics. Descriptive analysis was followed by correlation analysis to address Research Question 2 using the Statistical Package for the Social Sciences (SPSS) 19.0. Due to the nature of the data, Spearman's rho correlation was employed.

Validity and Reliability

The validity of the research study was based on how well the instrument performed at measuring the variables or phenomenon to be measured in a given study (Cozby, 2007). For the purpose of this study, the phenomena that were explored were the experiences with gender-based inequalities in the construction industry. The validity of the study, therefore, depends on the ability of the research method to address the research question or objectives of the study. The use of the correlation research design provided information to address the research question and study objectives.

The possible factors for inequalities in pay were explored and identified by an analytical assessment of the responses from each of the construction personnel who participated in the 2006 CMAA survey. Previous studies and statistical research have already determined the existence of inequality of wages between men and women in the construction industry (Bilbo et al., 2003). The correlation study built upon previous results and further identified and evaluated relationships between gender and compensation factors that may contribute to inequality.

Several questions had to be taken into consideration when illustrating the validity of the results obtained from the information collected. These questions explored whether the factors that directly related to the research findings led to capturing "an understanding of the social reality of the social respondents [the researcher] has studied" (Hesse-Biber & Leavy, 2005, p. 62).

The validity as the quality of craftsmanship deals with how well the research design has been thought through and carried out by the researcher of the study (Hesse-Biber & Leavy, 2005). Based on this information, the study was carefully designed, such

that the most appropriate approach to measure the gender-based inequalities in the construction industry was used. The validity in communication was then based on the dialogue between the respondents in the study and the 'legitimate knowers' who are conducting the study and making the claim (Hesse-Biber & Leavy, 2005). The concept of validity as communication extends to the interpretations of the findings, such that the results may be refuted by a wider community of experts in the field.

Moreover, the interpretations and findings from the research have to be in correspondence with the respondent's actual perception or responses of the respondents. The findings have to be generated objectively by interpreting the responses in terms of the actual experiences of the individual, rather than interpreting the responses to provide evidence for the study. The validity as a communication was adhered to in this research study by continuously communicating with CMAA to ensure that the information collected and results obtained were the actual representations of the construction management workers.

Finally, the validity as action was a concept that was used to construct the intersubjective interpretations of responses to meaningful actions and texts (Kvale, 1994). The validity as action has to take into consideration how the responses will be interpreted, such that the interpretations and findings obtained reflect the actual experiences of the participants. In the current study, the findings were reflective of the fate of the women in the construction industry. Thus, CMAA as an organization can further validate the results of this investigation.

Reliability in correlation design refers to how reasonable the data obtained was for the given study (Hesse-Biber & Leavy, 2005). The reliability of the correlation study

was divided into two different components, which included internal consistency and external consistency (Neuman, 2003). The internal consistency referred to how reasonable the data collected was, as well as if there was consistency in the observations obtained from each of the participants in the study (Hesse-Biber & Leavy, 2005). The external consistency of the data was then verified by comparing the information found for the current study with information collected from other studies (Hesse-Biber & Leavy, 2005; Neuman, 2003). The external consistency then determined whether or not the information that was collected for the current study was confirmed by other studies.

Summary

Chapter 3 presented the purpose and goal of the study and the appropriateness of utilizing a quantitative correlation study design. The correlation study utilized archived data from a quantitative survey conducted by CMAA related to 2007 compensation within the industry. Moreover, the study allowed for the examination of relationships between gender and compensation factors related to gender-based compensation inequities in the United States construction industry (Creswell, 2009; Neuendorf, 2002). The chapter also described the population under investigation, sampling frame, and data collection and analysis methods to be used. An explanation of the survey instrument, and the study reliability and validity was also provided. Chapter 4 presents the study results.

Chapter 4: Results

The purpose of the quantitative correlation study was to investigate gender-based compensation inequities within the U.S. construction industry. The study used archived survey data gathered during the Construction Management Association of America (CMAA) annual conference in Las Vegas, Nevada, related to 2007 compensation. The levels of compensation and benefits received by 418 construction managers were described. Furthermore, demographic, personal, and industrial variables were regressed upon salary received by the construction managers who participated in the study in order to determine which variables best predict their salary. Descriptive and correlation analyses were used to evaluate the compensation and benefits of the survey participants and to address the study research questions:

RQ_1: Do gender-based wage inequities exist within the construction management industry?

RQ_2: What is the relationship between gender-based compensation factors in the construction management industry?

Chapter 4 presents the demographic characteristics of the study participants followed by the study results.

Data Collection Procedures

The archived quantitative survey data were gathered during the CMAA annual conference in Las Vegas, Nevada, related to 2007 compensation. The collected data were compiled into an Excel spreadsheet and prepared for analysis using statistical tools within the Microsoft Excel statistical software suite. Each survey record was assigned an identification number to ensure privacy. The data contained 42 varied and specific topics

that spanned corporate/local office locations, types of positions, age of employees, years of service, education level, salary, work benefits, and job satisfaction. The nominal and numeric data were then analyzed to determine frequencies of the following demographic characteristics (a) gender; (b) employee age; (c) years of work experience; and (d) educational level. The results were arranged and entered into tabular format. Procedures described in chapter 3 were followed to ensure participant confidentiality.

The final study sample contained 418 discrete participant survey records. Four-hundred and eighteen surveys were returned by the 5,000 CMAA members that had been invited to participate in the survey. This resulted in a response rate of 8.4%, which was an adequate response for a quantitative correlation study (Creswell, 2008).

Demographic Characteristics

Demographic data were reported by the survey respondents and gathered with the archived survey data. Frequency tables for the demographic characteristics are presented in Appendix D. The majority of survey respondents were male (90%) and 9.5% were female. The majority of survey respondents were age 41-50 (39.8%). Thirty-one percent were age 51-60, and 17.9 % were age 31-40. Eight percent of participants were more than 60 years old, and fewer than 3% of respondents were under age 30.

The majority of survey respondents reported 21-25 years of experience in the construction industry (35.7%). Few construction managers had less than 6 years of experience (3.6%), while about half had 20 years of industry experience (44%). Nineteen percent of respondents had been in the construction industry for more than 30 years. The majority of the survey respondents reported having completed some form of college education (95%), with 51.4% having earned an undergraduate or bachelor’s degree.

Among survey participants, 37% had completed some form of graduate training, with 4% having completed a doctoral degree.

Three hundred six participants reported some form of professional certification (73%). The majority of participants were licensed contractors (6.75%) followed by professional engineers (45.75%), certified construction managers (40.5%), registered architects (5%), engineers-in training (2%), Leadership in Energy and Environmental Design (LEEDs) accredited professionals (2%), project management professionals (2%), and attorneys (1%).

Ninety-one participants reported working in transportation (22%) and 86 participants reported working in government-funded public buildings (20%). Seventy-one participants reported their employer as specialized in school construction (17%), 58 in water infrastructure (14%), 51 in private buildings (12%), and 18 in public health infrastructure (4%). In addition, 43 participants reported employment with another sector other than construction management (10%).

The majority of participants reported their company headquarters were in California (37%), followed by New York (7%), Texas (5%), and Colorado (5%). Survey participants also reported company headquarters in Washington D.C. (5%), Maryland (5%), and Virginia (5%). The remaining 44% of participants reported working in the Midwest. The majority of participants reported working in companies with less than 101 employees (26%). About 40% of the companies had more than 1000 employees with 19% working for large enterprises that had more than 10,000 employees. Most of the participants worked for private companies (72%) with 21% working for public agencies.

Findings

The purpose of the quantitative correlation study was to explore gender-based compensation inequities within the U.S. construction industry. In preparation for data analysis, descriptive statistics were calculated using Microsoft Excel® Data Analysis Pack. Data were reviewed for missing values prior to analysis, and any participant records missing information were excluded from the study. Following are the results of the descriptive analysis.

Descriptive analysis. The research questions sought to explore the factors that contributed to gender-based wage inequities in the construction industry. Using descriptive statistics, 10 compensation factors were analyzed that included (a) base salary; (b) additional compensation; (c) entry-level compensation; (d) base increase per year; (e) educational background; (f) time off; (g) tuition benefits; (h) professional development; (i) vehicle allowance; and (j) retirement benefits. The compensation factors were compared by gender to ascertain any disparity.

***Base salary*.** As can be seen from Table 2, out of the 378 male participants, base salaries increased by 6.85% from 2005 to 2006. Meanwhile, base salaries for females increased by 5.68% from 2005 to 2006. Moreover, it can also be seen in Table 2 that males do have low minimum value for base salary for both years as compared to females. However, in terms of their maximum value for base salary, males are higher than females for both years as well. Base salary mean scores were higher for females as compared to males.

Table 2

Base Salary 2005 and 2006

	Male		Female	
	2005	2006	2005	2006
M	$110,130.99	$118,228.97	$114,404.40	$121,288.90
Min	$35,000.00	$38,000.00	$48,600.00	$59,200.00
Max	$300,000.00	$300,000.00	$234,000.00	$260,000.00
SD	$40,769.83	$43,942.08	$38,875.41	$40,499.39

Note. *N*=418

Additional compensation. Table 3 presents the additional compensation received by both males and females for the year 2005. It can be seen that the minimum additional compensation given to the participants was actually zero. Thus, it means that the participants have not received any additional compensation. Moreover, regarding the maximum additional compensation, males received 60% more than females. Based on mean salary, males earned approximately 53% more in additional compensation than females.

Table 3

Additional Compensation 2005

	Male	Female
M	$16,143.56	$10,484.21
Min	$0.00	$0.00
Max	$160,000.00	$100,000.00
SD	$26,028.08	$17,982.04

Note. *N*=418

Entry-level compensation. Females have slightly higher entry-level compensation than males; however, both are in the range of about $53,000. Thus, the conclusion can be drawn that both males and females have the same entry-level salary. It could also be observed that the maximum entry-level compensation of males was 60% more than females (see Table 4).

Table 4

Entry-level Compensation

	Male	Female
M	$53,311.50	$53,450.48
Min	$0.00	$0.00
Max	$160,000.00	$100,000.00
SD	$22,109.66	$17,667.10

Note. *N*=418

Base increase per year. The base increase per year is presented in Table 5 and showed that males had a higher base increase per year as compared to females. Base salary increases for males per year ranged from zero (no increase) to more than 50%. Base increases per year for females ranged from zero to 10%.

Table 5

Base Increase per Year

	Male	Female
M	1.34	1.25
Min	0	0
Max	50	10
SD	0.75	0.59

Note. *N*=418

Educational background. The educational background was reported as the education participants had completed at the time they submitted the survey. As presented in Table 6, male respondents had higher educational background than females.

Table 6

Educational Background

	Male	Female
M	1.43	1.33
Min	0	0
Max	1.50	1.40
SD	0.23	0.45

Note. *N*=418

Time off. Time off was comprised of the number of sick days plus personal leave days. Males had a higher number of days off (*M* = 2.84, *SD* = 0.99) as compared to females. Moreover, both males and females do have the same minimum and maximum time off: one to four days.

Table 7

Time Off

	Male	Female
M	2.84	2.73
Min	1.00	1.00
Max	4.00	4.00
SD	0.99	0.94

Note. *N*=418

Tuition benefits. This variable is concerned with the participant benefit awarded in terms of tuition fees for their or their children's education. From Table 8, males were awarded higher tuition benefits (M = 0.87, SD = 0.34) as compared to females (M = 0.78, SD = 0.42). Also, both males and females do have the same minimum and maximum tuition benefits that ranges from zero up to full tuition benefits.

Table 8

Tuition Benefits

	Male	Female
M	0.87	0.78
Min	0.00	0.00
Max	1.00	1.00
SD	0.34	0.42

Note. *N*=418

Professional development. The professional development variable refers to the training and opportunities that the participants received while working on their respective companies. As presented in Table 8, the mean scores for professional development were comparable for both males and females indicating equity in advantages for professional development. As presented, both males and females have the same minimum and maximum score for professional development.

Table 9

Professional Development

	Male	Female
M	0.95	0.95
Min	0.00	0.00
Max	1.00	1.00
SD	0.22	0.22

Note. *N*=418

Vehicle allowance. Vehicle allowance refers to the privilege that the participants receive from their company regarding their transportation activities. As presented in Table 10, males were awarded higher vehicle allowance as compared to females. Moreover, both males and females have the same minimum and maximum score that ranges from zero up to full vehicle allowance.

Table 10

Vehicle Allowance

	Male	Female
M	0.37	0.20
Min	0.00	0.00
Max	1.00	1.00
SD	0.48	0.41

Note. *N*=418

Retirement benefits. Retirement benefits referred to the benefits that the participants received after they retired from the company. Females received higher retirement benefits as compared to males. Both males and females reported the same minimum and maximum values for retirement benefits.

Table 11

Retirement Benefits

	Male	Female
M	0.20	0.23
Min	0.00	0.00
Max	1.00	1.00
SD	0.40	0.42

Note. *N*=418

Disparities in compensation factors by gender. Table 12 illustrates the disparities evident in the survey results when compared by gender. Among the 10 compensation factors, professional development had comparable values for mean and standard deviation for both genders. For the remaining nine factors, descriptive statistics for males were consistently higher than for females.

Table 12

Compensation Factors by Gender

Compensation Factor	Male		Female	
	M	*SD*	*M*	*SD*
Base Salary	$114,179.98	$42,355.96	$117,846.65	$39,687.40
Additional Compensation	$16,143.56	$26,028.08	$10,484.21	$17,982.04
Entry-Level Compensation	$53,311.50	$22,109.66	$53,450.48	$17,667.10
Base Increase Per Year	1.34	0.75	1.25	0.59
Educational Background	1.43	0.23	1.33	0.45
Time Off	2.84	0.99	2.73	0.94
Tuition Benefits	0.87	0.34	0.78	0.42
Professional Development	0.95	0.22	0.95	0.22
Vehicle Allowance	0.37	0.48	0.20	0.41
Retirement Benefits	0.20	0.40	0.23	0.42

Note. *N*=418

Spearman correlation analysis. The second research question sought to explore relationships between compensation factors gender-based wage disparities in the construction industry. Though the female response to the survey was limited (9.5%), the disproportion of males and females was parallel to the construction industry since 85% of the labor force has primarily been comprised of males over the past two decades (U.S. Bureau of Labor Statistics Office of Occupational Statistics and Employment Projection, 2009). The research question was addressed by a comparative analysis of the results shown in Table 12 and the inequities presented in Table 13. Disparity in compensation

factors by gender were most noted for men above women in base salary, additional compensation, base increase per year, educational background, time off, and tuition benefits, and for women above men in retirement benefits (see Table 13). The results may offer a baseline by which to compare the output produced by the development of the model. The development a gender-equity compensation model may promote change and the effect of change over time in efforts to improve gender-based compensation disparities in the construction industry. These eight variables were assessed for associations using Spearman's rho correlation analysis following the descriptive analysis.

Table 13

Compensation Disparity by Gender

Compensation Factor	Male		Female	
	M	*SD*	*M*	*SD*
Base Salary	$114,179.98	$42,355.96	$117,846.65	$39,687.40
Additional Compensation	$16,143.56	$26,028.08	$10,484.21	$17,982.04
Base Increase Per Year	1.34	0.75	1.25	0.59
Educational Background	1.43	0.23	1.33	0.45
Time Off	2.84	0.99	2.73	0.94
Tuition Benefits	0.87	0.34	0.78	0.42
Vehicle Allowance	0.37	0.48	0.20	0.41
Retirement Benefits	0.20	0.40	0.23	0.42

Note. *N*=418

The strength of the correlation were based on the distance from +1 or -1, the closer the value, the stronger the correlation (Archambault, 2002). Using Spearman's rho correlation analysis of the eight compensation factors and gender revealed the magnitude and direction of the association between the variables that are on an interval or ratio scale (Archambault, 2002). The Statistical Package for the Social Sciences (SPSS) 19.0 was used for correlation analysis and a correlation matrix of the results is presented as Table 14.

Four significant relationships were found: gender and time-off (r_s= -.13; p<.05), base salary and additional compensation (r_s=.39; p<.05), time-off and vehicle allowance (r_s=.13; p<.05), and tuition and retirement benefits (r_s=.34; p<.05) (see Table 14).

Table 14

Spearman Correlation: Gender and Compensation Factors

	Variable	V1	V2	V3	V4	V5	V6	V7	V8	V9
V1.	Gender	–	-0.01	0.05	0.00	0.03	-0.13*	-0.08	-0.10	-0.04
V2.	Base Salary		–	0.39*	-0.02	0.00	0.01	0.01	0.04	-0.03
V3.	Additional Compensation			–	-0.06	0.00	-0.02	0.01	-0.01	-0.04
V4.	Base Increase Per Year				–	0.00	-0.04	0.04	-0.01	0.04
V5.	Educational Background					–	-0.02	0.01	0.09	-0.05
V6.	Time Off						–	0.02	0.13*	0.06
V7.	Tuition Benefit							–	0.03	0.34*
V8.	Vehicle Allowance								–	0.01
V9.	Retirement Benefits									–

Note. *N*=418; *p<.05

Summary

The purpose of the correlation study was to explore gender-based compensation inequalities in the U.S. construction industry. The study findings were drawn from a CMAA survey that invited the 5000 CMAA members to participate regarding their 2007 compensation. The survey had an 8.4% return rate with 90% male respondents and 9.5% female respondents. Results were attained using descriptive statistical analysis. The research study investigated compensation factors that may contribute to gender-based inequities within the industry. The study results indicated that inequities existed for (a) base pay; (b) additional compensation; (c) base increase per year; (d) educational background; (e) time off; (f) tuition benefits; (g) vehicle allowance; and (h) retirement benefits. These inequities tended to favor men over women except for retirement benefits, which reflected a higher rate for women. Further, the correlation results also revealed a strong negative correlation between gender and time-off variable. In addition, base salary and additional compensation, time-off and vehicle allowance, and tuition benefits and retirement benefits showed a significant positive correlation. The study conclusions and recommendations are presented in Chapter 5.

Chapter 5: Conclusions and Recommendations

The purpose of the quantitative correlation study was to investigate gender-based compensation inequities within the U.S. construction industry. The research question in the study addressed the factors that may contribute to gender-based compensation inequities in the construction industry. The study interpretation, conclusions, implications, and recommendations resulting from the data analysis are presented and discussed in chapter 5.

Conclusions

Results of correlation analysis are important to attempt to answer basic questions for the unit analyzed and significant associations (Creswell, 2008). This research applied a correlation study that utilized archived survey data gathered during the CMAA annual conference in Las Vegas, Nevada, regarding 2007 compensation were analyzed. The survey data included quantitative salary and benefits information and self-reported perspectives by construction management professionals regarding compensation earned in 2007. The resulting descriptive and correlation analysis focused on real-life context and relevant evidence that was used to interpret compensation factors on disparity of wages between genders (Creswell, 2008).

There has been a shift in the workplace when it concerns equality. In 1950, only about 39% of women went into the workforce (German, 2003). In 1998, more than 75% of women were in the workforce (Hegewisch & Luyri, 2010). *U.S. Bureau of Labor Statistics Office of Occupational Statistics and Employment Projection* showed that women now account for almost half of the total population of working professionals (2009). Salaries have also increased, although men still dominate the higher end of the

pay scale (Mathieu, 2010). The study results offered the opportunity for a proposed gender-equity compensation model for the construction management industry in support of gender-based wage equality in various industries (Clarke, 2010).

Research question 1. Factors contributing to gender-based compensation inequities in the construction industry are addressed through the first study research question. These factors included in the study are (a) base salary; (b) additional compensation; (c) entry-level compensation; (d) base increase per year; (e) educational background; (f) time off; (g) tuition benefits; (h) professional development; (i) vehicle allowance; and (j) retirement benefits. All of the compensation factors were compared by gender to ascertain any disparity. The interpretation of the data results for each compensation factor are presented and discussed individually as part of this section.

A disproportionate number of males to females remain evident in the construction industry (Caulfield, 2007). A similar disproportion was observed in the study sample. According to the U.S. Bureau of Labor Statistics Office of Occupational Statistics and Employment Projection (2009), the construction industry was a predominantly male industry, with at most, 85% of the total workers being male. The study sample was comparable to the industry gender mix with 90% male survey respondents and 10% female.

***Base salary*.** Female respondents reported a higher base salary compared to their male counterpart. This finding was in contradiction with Weinberg's (2004) contention and the Census 2000 Report that identified inequalities of earnings (wages) of men and women by classified occupations. The report showed women earned less than men for every earning distribution in the same occupation, and further supported by The Bureau

of Labor Statistics (2008) which claimed the construction industry was likely to experience a larger gender-based salary gap.

Additional compensation. Additional compensation for males was higher when compared to females in the study. The results for additional compensation were supported by the literature. Men earned higher additional compensation than females (Levin & Mattis, 2006). Although males received slightly lower base salaries when compared to females, the noticeably higher additional compensation raised male salaries considerably higher, making the overall gender-salary gap larger. Supported by Weinberg's claim (2004) that women earned less than men and Pineiro's belief (2009) that given the construction industry has been a predominantly male industry further conveyed gender-based wage and compensation inequities (AFL-CIO, 2009; Caulfield, 2008).

Entry-level compensation. No evidence existed to illustrate gender inequity in entry-level compensation. Lynch (2007) reported that men and women might be of the same compensation. However, the gender-based-salary gap widens partly due to the rate of increase in men's compensation relative to women's because of quicker promotions for men. Lynch (2007) contended that although men and women gain the same entry-level compensation, men experience a faster rate of increase due to career advancement. When an employee gained a promotion, compensation also increased (Lynch, 2007).

Base increase per year. Males have a higher base increase per year as compared to females. These base increases per year widen the gender-based-salary gap over time. Although entry-level compensation was equal, males gain higher additional

compensation by incurring quicker, and a greater number of, promotions along with a higher base increase per year. Study results revealed that gender compensation evaluation could not be based solely on descriptive comparisons of entry-level base salary and that all compensation factors, including promotion, needed to be investigated (Lynch, 2007).

Educational background. In terms of educational background, the study results indicated that male survey respondents had a higher educational background in at least one subject area, and had finished college or earned a bachelor's degree. According to Sims (2007), education was an essential ingredient on the path to professional success. Employers have increasingly used diplomas and degrees as a way to screen applicants. Once one was hired, salary increases reflected credentials including level of education (U.S. Department of Labor, 2006). In addition, academicians and practitioners have noted for two decades that a bachelor's degree has value in the workplace. Earnings tended to rise as education levels increase (Offerman & Gowing, 1990; Sims 2007).

According to the U.S. Department of Education's National Center for Education Statistics, between 1980 and 2005, those young adults with at least a bachelor's degree consistently had higher median earnings than those with lower education. Thus, evidence existed that educational attainment or background influenced employee salary. Males have higher educational attainment levels, compared to females, leading to higher earnings by males.

Time off. Time-off concerns the different types of privileges an employee received (e.g., sick days, leave, and personal leave days). From the samples gathered for this study, results showed male participants reported more privileges related to time off.

Sick leave and personal days are a form of time off afforded to employees who must miss work due to an illness or a personal situation (Hillstrom & Hillstrom, 2006). Since nearly all employees require time off occasionally, businesses benefit from a clear policy established regarding sick leave and personal days. A sick day can be used for anything from a cold to a more serious illness requiring hospitalization or surgery. Personal days can cover things such as the illness of a child, a death in the family, jury duty, military obligations, or religious holidays. Most companies also allow vacation time for employees in addition to their set number of sick leave and personal days (Hillstrom & Hillstrom, 2006).

According to Levy (2000), most companies allocate a fixed number of days for sick leave and personal time. For example, in a calendar year, an employee could have five sick days and three personal days. If the employee fails to use them all within the given amount of time, the company must decide whether to allow employees to add them to the number of sick days for the following year. The company could also reward the employee for not taking all available sick and personal days by offering cash bonuses, additional vacation days, or other perquisites (Levy, 2000).

Females could require a greater number of personal days because of the possibility of giving birth to a child and because they are typically the primary caregiver for sick children (Greenhaus & Beutell, 1985; Kennedy, 2010). Bourdieu (as cited by Reay, 2004) claimed females were accountable for conveying emotional capital toward the children, for they are largely responsible for the sustained relationship. Organization for Economic Co-Operation and Development (OECD) (2000) claimed that women worked fewer hours due to the present circumstances of “responsibilities for child-rearing

and other unpaid household work are still unequally shared among partners." However, based on the results found, this was not the case. Although there is a contradiction, one might suspect this might have been the reason for including several companies in the sample that have different time off policies and the insufficiency of female samples. Thus, for this compensation factor, it is not clear if it contributed to the gender-based-salary gap.

Tuition benefits. Along with time off, there are other benefits an employee can receive, (e.g., tuition benefits for themselves or their children) but these benefits occur on a case-by-case basis and are company-dependent (White, 2007). More often, when talking about the gender-based compensation gap, benefits an employee receives also come in because sometimes this is where the disparities could be attained. The results confirm there is a disparity specifically regarding the tuition benefits each gender receives from the company. Males received more tuition benefits compared to females (Howard, 2009). One might reason this finding occurs because a company links gender to responsibility within a family. Since males primarily are the source of income in a family and this includes funding daily expenses and educational fees of the children, this may be one reason why they receive more tuition benefits compared to females.

Professional development. Concerning professional development, results showed no disparity between genders. According to Moerer-Urdahl (2004), professional development is the responsibility of both the employee and the company. Quality professional development encourages lifelong learning and professional growth and development for all employees. Professional development is designed to address the current and future needs of the company, and to develop and enhance the knowledge,

skills, and ability of the employee as they relate to employees' individual job assignments (Moerer-Urdahl). Thus, from a company perspective, it is useful to offer training and development programs to all employees regardless of gender (Mitchell, 2010). Professional development is an investment for a company that is not gender specific. The same results were found to be true for this company. Both genders gained training compensation equally (Mitchell, 2010).

Vehicle allowance. The results showed males received more vehicle allowance compared to females. Much the same as tuition benefits, whether a company will award a specific employee vehicle allowance privileges is largely dependent on the company. IRS Publication 463 (2010) and a WorkatWork Survey (2008) affirmed vehicle allowances ranged from an employee given a transportation allowance only when his or her jobs required travel, to offering a car to the employee along with all expenses from oil to maintenance charged to the company. In the construction industry, males did more physical activities that included transporting raw materials from one place to another, and engage in meetings with other construction companies that require travel (Construction Management, 1997). The findings confirmed that this type of activity by males may influence advantages regarding travel allowance (OECD, 2000).

Retirement benefits. Retirement benefits refer to the amount and the arrangement (e.g., annual income or lump sum, payment of insurance, etc.) by which the company provides benefits to employees after they conclude their service (Occupational Employment and Wages, 2008). Typically, retirement benefits are dependent upon the position the employee attained before he/she retired from service as well as the number of years of service for the company (2008). Thus, retirement benefits are largely dependent

on characteristics (i.e., position and years of service) of the employee (Shirley & Spiegler, 1998).

The study results showed females had higher retirement benefits compared to males. Yet, women earned less than men in all other compensation factors analyzed in the study as addressed above. The results for retirement benefits may be related to Blue's (2008) study that noted women tended to live 5 to 10 years longer than men, and about 70% of the life expectancy variance is probably attributable to environmental factors (behaviors and exposures) and 30% attributable to genetics. These extraneous factors may contribute to gender compensation inequities based on employment longevity and warrant further inquiry into retirement benefits.

Research question 2. The results of the descriptive analysis followed by Spearman's rho correlation analysis revealed four significant associations between seven variables (a) gender and time-off variable; (b) base salary and additional compensation; (c) time-off and vehicle allowance; and (d) tuition benefits and retirement benefits. The significant associations between compensation factors related to gender-based salary disparities in the construction industry represented specific compensation factors of the construction management industry, and serve as the basis for continued research (Creswell, 2008; Lanthier, 2002). Preliminary conclusions between these relationships are as follows.

Gender and time-off. Prior studies and statistical research have continued to confirm the existence of inequality of wages between men and women, specifically in the construction industry (Bilbo et al., 2003). The correlation between gender and time-off was supported by Dainty and Lingard (2006) who posited that although females are

surfacing more in the construction industry after long years of discriminatory practices, they still face inequities in pay scales, benefits, and discrimination based on their gender. Blau and Kahn (2007) observed over the past 25 years pay between workers with high wages and workers with low wages had widened with significant progress for women; however, a gender pay gap continued. Although superior gains were made for women in the early 20th century, women have continued to earn considerably less than men on average (Blau & Kahn, 2007).

Correlation evidence showed gender as significantly related to the time-off compensation variable. Studies show women as a group work fewer weeks per year and hours per week than men, which has been seen in varied trends in gender earnings (Blau and Kan, 2007). Further study would be needed to explore the reasoning behind distinctive gender compensation inequalities specifically in the construction industry. The construction industry is predicated to continue to grow, and was considered in 2009 as the second-largest employer in the country with more than 10 million workers, 10% of which were are women (U.S. Bureau of Labor Statistics, 2009).

Base salary and additional compensation. Construction industry jobs have paid better salaries than "traditional women's work," which was an attractive for the millions of women wedged in poverty (Brown & Jacobsohn, 2008). The correlation analysis displayed a significant association between base salary and additional compensation. Base salary has been the most easily understood component of management salaries as the essence foundation for all management compensation programs (Heisler, 2007). A recent study on gender differences in executive

compensation disclosed that the average career compensation was lower for females than males at all age levels (Gayle, Golan, and Miller, 2011).

Time-off and vehicle allowance. Companies often offer discretionary benefits to their employees in the form of paid time-off and an array of other kinds of benefits programs (Sims, 2007). The study results revealed a signification association between time-off and vehicle allowance. This was supported by the standard practice for organizations to pay for employee's time not worked, such as sick leave, vacations, holidays, jury duty, or personal reasons (Sims). In addition, many organizations will provide relocation, housing assistance, and travel allowances (vehicle) and services for transferred employees and high-demand new hires (Sims). Benefits are said to be contingent on membership in the organization, which help attract and retain employees (Sims).

Tuition and retirement benefits. More and more organization have used using tuition benefits to attract, boost, and retain employees (Babcock, 2009). While employers have offered retirement plans as a voluntary benefit, funding retirement often has a critical role from a business management perspective (Sundali, Westerman, & Stedham, 2008). Correlation data revealed a strong association between tuition and retirement benefits. Research was conducted on the importance of compensation and organizational outcomes which indicated an apparent relationship with employee performance, withdrawal, lateness, and turnover (Curral, Towler, Judge, & Kohn, 2005). Both tuition and retirement benefits are a part of a compensation package offered to employees as a benefit for favorable influence at the workplace. Williams, Malos, and Palmer (2002) found that job satisfaction was a result of satisfaction with employee benefits.

Implications

The study findings substantiated that gender-based salary and compensation inequities may have existed within the construction industry. The current study results corroborated findings in the literature that the construction industry has been a predominantly male industry (AFL-CIO, 2009; Bilbo, et al, 2003; OSHA, 1999; U.S. Department of Labor Women's Bureau, 2009: Weinberg, 2004). Over the past two decades, a considerable number of companies have recognized the need to improve the diversity of their employees and management in order to remain competitive in the global marketplace (Kullman, 2008; Offerman & Gowing, 1990; Perrewe & Nelson, 2004; Yaprak, 2002). An industry that is predominantly male or female must be transformed to an industry where both genders are encouraged to work together, and where both genders view each other as equal regarding all work opportunities (Hunter & Macnaughtan, 2000).

Descriptive analysis showed that additional compensation and base increases per year leaned toward males having greater compensation despite roughly equal entry-level compensation. In areas such as time-off, a significant relationship was found with gender, supported in the literature and founded by a perception of employee commitment and loyalty that can influence career success in relation to gendered work options (McDonald, Bradley, & Brown, 2008). The significant association between base salary and additional compensation may be influenced by the foundation of an organization with explicit incentives provided by employers for managers who are positioned at higher organizational levels (Ederhof, 2011; Heisler, 2007). The significant relationship between time-off and vehicle allowance, as well as an association between tuition and

retirement benefits, were also supported in the literature that found these compensation variables as incentive for employment retention and longevity (Williams, Malos, and Palmer, 2002).

As illustrated in the study results, compensation inequities between genders continued; although entry-level compensation and professional development showed less disparity, which supported the efforts to diminish the gap between genders (Perrewe & Nelson, 2004). In addition, benefits and allowances were identified as factors contributing to the disparity as well. However, since these compensation factors vary from one company to another, they cannot be generalized to other industries. Nevertheless, for the purposes of the study, contributing factors in the construction industry may require further investigation (Bilbo et al., 2003).

Recommendations

The results of the present study compared compensation and benefits received by construction managers by gender. The study sought to describe and characterize the compensation and benefits received by construction managers from their employers, and to determine which demographic and background factors were associated with base salary. The findings from the study may shed light on the potential effects of several compensation factors that influence the gender-based-salary gap. Further research is needed to explore factors that were limited in the study (Bilbo et al., 2003). The following recommendations address leadership and future research considerations.

Recommendations for leadership. In order to attain equitable compensation standards for both genders, the company must look into the various aspects of salary and benefit disparity to equalize the rates attained by both genders (Paap, 2006). Since

capability as a worker (e.g., educational background and skills) and years of service are also factors that contribute to the compensation of the employee, management must consider these for promotions and advancement (Keynes, 2007). The study results revealed educational background and tuition benefits between genders favored males; however, professional development appeared balanced.

Companies may evaluate their success from a financial perspective; however, research has shown that female leaders contributed to a company's prosperity where "women in management contends that companies that achieve diversity and manage it well attain a better financial results than other companies (Catalyst, 2004). Harting (2008) noted that individual employee talent was an asset of any company, and should be the basis of employee compensation. Companies that value employee talent and accomplishment as the basis for salary and compensation increases lead to increased employee motivation and performance (Burd & Davies, 2006; Greene, 1999).

Weinberg (2004) asserted when equal and reasonable payment existed in a company, meaning no bias for gender and solely based on experience, capabilities, and how a potential leader deals with other people, then the company encourages employees to strive harder and make it a goal that they improve to obtain the promotion or perquisite they want. Pogeman (2009) confirmed employees tended to motivate themselves to do better if they saw that there are there no bias and all employees were treated similarly. By adhering to the equality of compensation and taking into consideration the right basis for giving incentives and salaries, companies may be successful in creating an environment where all employees are motivated in their work and are more responsible (Broadbent, 2008).

Lastly, the findings of the study may be considered a cautionary warning related to gender bias in the construction industry. The results, which indicated that gender compensation bias may exist in the construction industry, wherein males do have advantage over females, should be given proper attention by leaders of organization to not deter females in doing their best at work or at most engaging in construction industry and the like. In addition, to further explore the findings of the research, it is recommended to use the findings as foundational to further study.

Recommendations for future research. The study involved archival quantitative data using a nonexperimental design, which served as a foundation for future research. Therefore, further inquiry is recommended. A qualitative phenomenological study using interviews with female construction managers may offer further insight into the perspectives and experiences of compensation inequality in the construction industry. It is also recommended that the results of correlation be used to further investigate gender and the significant compensation factors using multiple regression or a quasi experimental study design. Within the CMAA Professional Development Department, a 2009 member survey did not focus on member compensation. However, future research may also involve a longitudinal study utilizing the CMAA survey study results related to 2007 compensation, and a future CMAA compensation survey.

Summary

The construction industry has historically remained a male-dominated industry in which males receive more advantages than females (AFL-CIO, 2009; Bilbo, et al., 2003; U.S. Department of Labor Women's Bureau, 2009: Weinberg, 2004). The study served to contribute to the research on gender compensation inequity as it identified several

compensation factors where inequities existed, and significant associations between gender and other compensation factors (Bilbo, et al., 2003; Construction Management, 1997; Levy, 2000; Occupational Employment and Wages, 2008; Pineiro, 2009; Weinberg, 2004). Salary disparity and gender-based compensation inequality are still of concern, and industry leaders need to investigate these inequities (Perrewe & Nelson, 2004). Further research may be warranted regarding gender-based compensation issues, as indicated by the results of the quantitative analysis. Future studies should be conducted to determine causation of the continued gender inequalities in compensations since the Equal Pay Act of 1963. With the continued increase of job opportunities within the construction management industry, it is imperative to continue to explore gender compensation inequities in construction management (Sims, 2007).

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Appendix A: Letter of Collaboration

UNIVERSITY OF PHOENIX

LETTER OF COLLABORATION AMONG INSTITUTIONS

Date: 5/12/2009

To: Office of the Provost/Institutional Review Board
University of Phoenix

This letter acknowledges that Construction Management Association of America is collaborating with Ms. Angela Smiley enrolled in the Doctor of Management in Organizational Leadership program at the University of Phoenix in conducting the proposed research. We understand the purpose of this research

is to explore gender based wage inequalities within the United States construction management industry

and will be conducted under the supervision of Dr. Robin Throne
(Faculty Name)

This project will be an integral part of our institution/agency and will be conducted as a collaborative effort and will be part of our curriculum/research/data/service delivery model.

Sincerely,

Amy Konigsburg
Senior Associate, Professional Development
CMAA

Appendix B: CMAA Salary and Benefits Survey

Zoomerang Survey Results

CMAA 2006 Construction Manager Salary & Benefits Survey
Response Status: Completes
Filter: No filter applied
Aug 09, 2006 05:26 AM PST

Note: Open ended responses are not displayed in Excel exports.

1. In what state is your employer's headquarters located?
2. In what state is your office located?
3. What percentage of your employer's total volume in 2005 was a result of construction management, program management or project management-related services?
4. How many total employees does your organization have (all locations)?
5. How many employees in your organization are construction managers, program managers or project managers (all locations)?
6. What type of employer do you work for?
7. What is your gender?
8. What is your age?

9. How many years of work experience do you have in the construction management field?
10. What is your highest level of education?
11. Do you have any of the following professional licenses or certifications (choose all that apply)?
12. In what sector of the construction industry do you primarily work?
13. What was your base annual salary ($US), as of January 1, 2005, from your primary source of employment? Do not include overtime, bonuses, or commissions.
14. What is your base annual salary ($US), as of January 1, 2006, from your primary source of employment? Do not include overtime, bonuses or commissions.
15. What percentage increase in your base salary do you expect in 2007?
16. How much additional cash compensation ($US) did you receive in 2005 from your primary source of employment? Include bonuses and commissions, but do not include overtime.
17. What is the average entry-level salary ($US) for a construction manager at your organization?
18. If your employer has a "combined time off" policy, how many total days do you have off per year?
19. If your employer DOES NOT have a "combined time off" policy, how many total days do you have off per year?

20. How many paid sick days do you earn per year?
21. How many paid vacation/personal days do you earn per year?
22. How many total paid holidays (federal, state, floating) do you have off per year?
23. Please describe your medical insurance coverage.
24. Please describe your dental insurance coverage.
25. Please describe your long-term disability Insurance coverage.
26. What type of Section 125 flexible benefits plan does your employer provide (choose all that apply)?
27. What type of life insurance coverage is offered by your employer?
28. Does your organization offer any amount of tuition reimbursement?
29. Does your organization financially support your professional development and/or continuing education?
30. Does your organization provide you with an automobile?

31. What type of Retirement benefits are offered by your employer (choose all that apply)?
32. If your employer provides any type of 401(k) match, what is the match percentage or contribution amount?
33. How many years away are you from retiring?
34. How would you rate your overall job statisfaction?
35. All of those who complete the survey will receive an electronic summary of the national resultsâ€™ at no charge. Addtionally, you will have the option of purchasing the published survey results for only $90.00 (50% off the retail price of $180.00). In order to receive the summary and have the option of the discounted purchase, you MUST provide your CMAA member number and/or contact information below. Providing this information is completely voluntary, but is necessary to receive the national summary and the discount because CMAA must verify who completed the survey. Please be assured that your identity will remain 100% confidential.

Appendix C: Permission to Use an Existing Survey

UNIVERSITY OF PHOENIX

PERMISSION TO USE AN EXISTING SURVEY

Date: 5/12/2009

Ms. Amy Konigsburg

Construction Management Association of America

7926 Jones Branch Drive, Suite 800

McLean, VA 22102

Thank you for your request for permission to use the data published in the CMAA Construction Management Professionals Salary and Benefits Survey (2007 Edition), in your research study. We are willing to allow you to reproduce the instrument as outlined in your letter at no charge with the following understanding:

- You will use this survey only for your research study and will not sell or use it with any compensated management/curriculum development activities.
- You will include the copyright statement on all copies of the instrument.
- You will send your research study and one copy of reports, articles, and the like that make use of this survey data promptly to our attention.

If these are acceptable terms and conditions, please indicate so by signing one copy of this letter and returning it to us.

Best wishes with your study.

Sincerely,

Signature

I understand these conditions and agree to abide by these terms and conditions.

Signed AS Date 5/12/09

Expected date of completion 2/1/2010

Appendix D: Demographic Characteristics

Table D1

Gender

Gender	Frequency	Percent	Valid Percents
Male	378	90.0	90.0
Female	40	9.50	9.50
Unknown	2	0.50	0.50

Note. N=418

Table D2

Age

Age	Frequency	Percent	Valid Percents
21-30	11	2.60	2.60
31-40	75	17.90	17.90
41-50	167	39.80	39.80
51-60	130	31.00	31.00
60-over	34	8.10	8.10
Unknown	3	0.70	0.70

Note. N=418

Table D3

Years of Work Experience

Years of Work Experience	Frequency	Percent	Valid Percents
<5	15	3.60	3.60
6-10	44	10.50	10.50
11-15	50	11.90	11.90
16-20	76	18.10	18.10
21-30	150	35.70	35.70
>30	80	19.00	19.00
Unknown	5	1.20	1.20

Note. N=418

Table D4

Education Level

Education Level	Frequency	Percent	Valid Percent
High School	20	4.80	4.80
Associate Degree	24	5.70	5.70
Undergraduate/	216	51.40	51.40
Bachelor's Degree Graduate/ Master's Degree	135	32.10	32.10
Graduate/Doctoral Degree	18	4.30	4.30
Unknown	7	1.70	1.70

Note. N=418

Table D5

Professional Certification

Professional Certification	Frequency	Percent	Valid Percents
Professional Engineers	140	45.75	45.75
Construction Managers	124	40.52	40.52
Architects	16	5.23	5.23
Other License	26	8.50	8.50

Note: N=418; *n*=114 no license or professional certification.

Table D6

Employment Sector

Employment Sector	Frequency	Percent	Valid Percents
Transportation	91	21.67	21.67
Public Buildings	86	20.48	20.48
Schools	71	16.90	16.90
Water Infrastructure	58	13.81	13.81
Private Buildings	51	12.14	12.14
Public Health Infrastructure	18	4.29	4.29
Others	43	10.24	10.24
Unknown	2	0.48	0.48

Note: *N*=418

Table D7

Company Headquarter State Locations

Company Headquarter State Locations	Frequency	Percent	Valid Percents
California	153	36.43	36.43
New York	29	6.90	6.90
Texas	22	5.24	5.24
Colorado	20	4.76	4.76
Virginia	18	4.29	4.29
Maryland	17	4.05	4.05
Washington D.C.	14	3.33	3.33
Florida	14	3.33	3.33
Georgia	14	3.33	3.33
Arizona	12	2.86	2.86
Illinois	12	2.86	2.86
Missouri	12	2.86	2.86
Pennsylvania	11	2.62	2.62
New Jersey	9	2.14	2.14
Ohio	7	1.67	1.67
Washington	7	1.67	1.67
Kansas	6	1.43	1.43
Iowa	4	0.95	0.95
Massachusetts	4	0.95	0.95
Minnesota	4	0.95	0.95
South Carolina	4	0.95	0.95
Michigan	3	0.71	0.71
Nevada	3	0.71	0.71
North Carolina	3	0.71	0.71
Idaho	2	0.48	0.48
Indiana	2	0.48	0.48
Kentucky	2	0.48	0.48
New Mexico	2	0.48	0.48

Oklahoma	2	0.48	0.48
Rhode Island	2	0.48	0.48
Arkansas	1	0.24	0.24
Delaware	1	0.24	0.24
Nebraska	1	0.24	0.24
New Hampshire	1	0.24	0.24
Oregon	1	0.24	0.24
Wisconsin	1	0.24	0.24

Note. N=418

Table D8

Company Office State Locations

Company Office State Locations	Frequency	Percent	Valid Percents
California	141	33.57	33.57
New York	28	6.67	6.67
Virginia	23	5.48	5.48
Maryland	21	5.00	5.00
Washington D.C.	19	4.52	4.52
Pennsylvania	16	3.81	3.81
Texas	16	3.81	3.81
Florida	15	3.57	3.57
Illinois	15	3.57	3.57
Washington	13	3.10	3.10
Georgia	12	2.86	2.86
Ohio	10	2.38	2.38
Colorado	9	2.14	2.14
Missouri	9	2.14	2.14
Arizona	8	1.90	1.90
Minnesota	7	1.67	1.67
Massachusetts	6	1.43	1.43

New Jersey	6	1.43	1.43
Nevada	5	1.19	1.19
Connecticut	4	0.95	0.95
Iowa	4	0.95	0.95
South Carolina	4	0.95	0.95
Kansas	3	0.71	0.71
New Mexico	3	0.71	0.71
North Carolina	3	0.71	0.71
Delaware	2	0.48	0.48
Idaho	2	0.48	0.48
Indiana	2	0.48	0.48
Kentucky	2	0.48	0.48
Oklahoma	2	0.48	0.48
Oregon	2	0.48	0.48
Arkansas	1	0.24	0.24
Louisiana	1	0.24	0.24
Rhode Island	1	0.24	0.24
Tennessee	1	0.24	0.24
Utah	1	0.24	0.24
West Virginia	1	0.24	0.24
Wisconsin	1	0.24	0.24
Wyoming	1	0.24	0.24

Note. *N*=418

Table D9

Total Company Employees

Total Company Employees	Frequency	Percent	Valid Percents
1 to 100	110	26.19	26.19
101 to 500	93	22.14	22.14
501 to 1,000	50	11.90	11.90
1,001 to 5,000	58	13.81	13.81
5,001 to 10,000	30	7.14	7.14
> 10,000	79	18.81	18.81

Note. N=418

Table D10

Company Type

Company Type	Frequency	Percent	Valid Percents
Private	302	71.90	71.90
Public	90	21.43	21.43
Others	27	6.43	6.43
Unknown	1	0.24	0.24

Note. N=418