



Pretty in PPE: The Relationship between Personal Protective Equipment (PPE), Self-Efficacy, and Job Satisfaction of Women in the Building Trades

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This study examined the relationship between Personal Protective Equipment (PPE), self-efficacy, and job satisfaction of women working in the building trades. According to the United States Department of Labor, women comprised 46.8% of the total U.S. labor force in 2010; however, the percentage of women who work in the construction trades is less than 3% (United States Department of Labor, 2010).

Studies of tradeswomen have generally looked at barriers to participation in the workforce (Moir, Thomson, & Kelleher, 2011). There have been a few examinations of health and safety issues for women in construction including assessment of PPE and work clothing (Ontario Women's Directorate, 2006). Our study sought a different approach to investigating tradeswomen via connecting PPE and job satisfaction.

This research used a mixed methods design to investigate the use of PPE and work clothing among women in the building trades and examine attributes significantly related to PPE/work clothing satisfaction using the Functional-Expressive-Aesthetic (FEA) consumer needs model (Lamb & Kallal, 1992). In addition, we quantitatively analyzed the relationship between PPE/work clothing, self-efficacy, and job satisfaction. Since linkages between attributes and satisfaction of PPE/work clothing examined by a quantitative analysis may be insufficient, a qualitative approach was included to better understand the experience of tradeswomen and their work apparel. Asking an open-ended question about PPE/work clothing, we inductively analyzed the data following a systematic procedure presented by Bloomberg and Volpe (2008).

The survey concluded with 75 completed questionnaires. Respondents were women over the age of 18 who had worked at least 3 months full-time in a construction trade. Of the respondents, 46% were carpenters and 22% electricians, with the rest of the occupations covering more than a half dozen other trades. 40% of respondents had 15 years or more experience working in construction. Less than 10% had one year or less work experience. Almost 75% of respondents were currently working in the building trades. A high rate of PPE use (95%) among the participants was reported. Further, 77% of tradeswomen were required to wear it, and, positively, 75% of respondents said they had control over getting the contractor to provide proper PPE. Yet, only 8% reported their PPE was gender specific (not unisex).

Correlation analysis between all PPE/work clothing attributes and overall satisfaction of PPE/work clothing was conducted to find out significant relationships between each attribute and satisfaction. Significant correlations were identified between PPE satisfaction and the following FEA variables: confidence ( $r = .76$ ), garment weight ( $r = .56$ ), fit ( $r = .55$ ), protection ( $r = .55$ ), safety ( $r = .43$ ), durability ( $r = .38$ ), ease of don/doff ( $r = .28$ ), and the ability to fit-in with the

rest of the crew on a jobsite ( $r = .24$ ). The result indicated that the functional, aesthetic, and expressive attributes of PPE are strongly related to overall satisfaction of PPE. Inductive qualitative analysis to the open-ended question discovered themes of work clothing substitution, style, fit and availability. Responses confirmed a need for improvement in work clothing and PPE for women in the building trades.

Regression analysis was conducted to examine the relationship between PPE satisfaction, self-efficacy, and job satisfaction. We also tested a mediating effect of self-efficacy on the relationship between PPE satisfaction and job satisfaction by following four steps addressed in Barron and Kenny (1986). The result indicated PPE satisfaction has a positive effect on self-efficacy ( $\beta = .39$ ,  $t = 3.64$ ,  $p < .01$ ) and job satisfaction ( $\beta = .30$ ,  $t = 2.75$ ,  $p < .01$ ). Self-efficacy also had a significant positive effect on job satisfaction ( $\beta = .54$ ,  $t = 5.57$ ,  $p < .001$ ). Thus, when participants are satisfied with their PPE and work clothes, their perceived self-efficacy is higher and they become more satisfied with their job.

The findings of this study suggest that the common colloquial of ‘dress for success’ applies beyond the office cubicles of white-collar workers. Our data showed a clear connection between satisfaction of PPE and work clothing and overall satisfaction of a job within the building trades. If employers supported the purchase and availability of PPE for women, it would improve the overall market for gender-specific PPE and work clothing. While it is a leap to suggest properly fitting PPE can improve the statistics of job retention for women, it is logical to suggest that wearing the proper clothing is a component of a more positive experience of working construction for tradeswomen. Further work in this area might include a more in-depth investigation into the variance of PPE needs specific to each building trade.

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