

Women in Construction in South Africa: Investigating the Feminine Footprint of the South African Construction Industry

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The article presents an exploration into the performance of the South African construction industry with regard to its feminine footprint. Focus of the study is female employment and promotion, and the impact on levels and types of work, with regard to population characteristics. Democratic South Africa has enabled public and private efforts to transform the nation from the previous apartheid legacy, which includes discrimination against women. Consequently gender mainstreaming in post-apartheid South Africa has enabled interventions that aim to emancipate women, especially in the area of labor. However, the country is behind the set goals in terms of women and work, especially in male-dominated environments such as the construction industry. The situation is explored through a purposive sample of literature related to women and work, and women in construction in South Africa. This is combined with analysis of labor statistics. The major limitation is the secondary nature of data used for the study. Findings at this stage suggest sub-optimal growth in female employment. There are also appreciable disparities between the informal and formal sectors, and between the levels and types of work, according to population characteristics.

Keywords: construction, development, employment, gender, women.

Introduction

Research interest for the paper concerns the effectiveness of the gender-positive environment created as one of the outcomes of South Africa's democracy of seventeen years. Specific focus is given to the employment situation of women in the local construction industry.

South Africa has a history of strong racial and gender conflict, and oppression (Underwood, n.d.). Firstly, in apartheid South Africa, gender based discrimination at the workplace was institutionalized. Married women and women of non-European descent were not allowed to be formally employed. Secondly, women were not employed or promoted to management levels in their places of work (Bezuidenhout et al. 2008). Thirdly, African (black) women especially were much more constrained than the rest. They were corralled in forced settlements and forbidden from accessing the cities or working in any formal business. They could only perform informal work as farm hands and in related jobs (Meer 1985). Since 1994 the nation entered into a democratic era (GCIS 2011a). Gender main mainstreaming policies in relation to employment and promotion of women only came into existence after the inception of democratic rule (The South African Department of Labour 2010). However, the impact of previous dispensations is

still evident (Underwood n.d., GCIS 2011a). Therefore, it is arguable that apartheid era South Africa, had enabling environment for high occurrence of gender based discrimination in the work environment. It is also arguable, that gender mainstreaming interventions instituted in post-apartheid South Africa, would address inequalities of the past. Thus effectiveness of the new gender-positive environment could be measured through indicators of women empowerment. Critical areas include population characteristics, in relation to employment and promotion of women.

Since the end of apartheid rule in 1994, gender related human resource management policies and legislations have been introduced. These legal vehicles include the Employment Equity Act and the national policy framework for women empowerment and gender equality. However some sectors of the economy such as construction have not experienced commensurate change in their feminine footprint, especially in the employment and promotion of women. As of September 2009, women comprised 44.87% of the employed population in South Africa. At the same time, only about 13% of employees in the construction industry were women (Statistics South Africa 2009). Currently, the female work force in South Africa is concentrated in the services industry at 31.20%. However sectors such as construction, mining, utilities and transportation have low proportions of the female work force. Out of a total female working population, which is above nine million, only 1.87% is in construction (Statistics South Africa 2011).

From the above statistics, gender related legislation and Human Resource (HR) policies in South Africa seem to have had minimal effects on the employment of women in sectors such as construction. For the local construction industry causative factors could include insufficient adoption of gender mainstreaming, inadequate implementation, or lack of commitment on the part of the private sector. There could be other reasons such as lack of qualified persons (female graduates), more women leaving the industry, and lack of succession plans between lower and higher levels of work. Furthermore it is possible that interventions referred to earlier have not created an environment that is enabling enough, to transform the industry's feminine footprint. Research presented in the article therefore investigates the feminine footprint of the South African construction industry, on the backdrop of gender mainstreaming efforts in the country. The approach is a combination of literature review and survey data analysis, from which inferences are drawn.

Relevant Concepts in the Study

The perspective of 'Feminine Footprint' considers women's issues in its totality, but with specific focus in each instance. Theory discussed here centers around issues of women's liberation in Africa, and particularly female employment in South Africa using the construction industry as a context. Issues relating to female employment are centered about the intersections of feminism, women and work, and gender and development. Specific focus on female employment issues in the local construction industry also concern Human Resource Management (HRM) policies, legislation and implementation.

Feminism

The history of Feminism is notable in Europe and America, where initiatives have been taken against marginalization of women since the nineteenth century. There have been three waves of feminism. Consequently the following issues have been addressed: women's rights to education, employment, property rights, women's suffrage, economic rights, as well as sexual and reproductive rights (Karl 1995); social and legal norms that affect women (Rowbotham 1996); ending institutionalized oppression of women; empowerment of women for participation in decision making at all levels of society; and transformation of society through women's participation and perspectives (Karl 1995). Following from the above, feminist efforts and impact put gender and development on the global stage.

Gender and Development

The Gender and Development (GAD) concept emerged from the 1985 United Nations (UN) Women's Conference in Nairobi. GAD focused on issues of subordination in social relations between men and women (Pearson 2000). The major outcome of GAD is the promotion of women's advancement nationally and internationally. Associated events with landmark outcomes include: World conference on Equality, Development and Peace in Mexico, 1975; the decade for Women and Development, 1976-1985; appraisal of the 1975 world action plan for women advancement in Copenhagen, 1980; International treaty on Convention on the Elimination of All forms of Discrimination Against Women (CEDAW) in September 1981 (UN 1995); and the emergence of 'Forward Looking Strategies for the Advancement of Women' (FLS) in Nairobi, 1985 (Jahan 1995). Furthermore the Beijing conference of 1995 resulted in a declaration, which addressed critical areas of discrimination against women including, education, health, economy, women's human rights and the situation of the girl child (United Nations Department of Public Information 1997). The above mentioned developments have had positive impact on the advancement of women, with the emergence of new challenges. Research shows that the feminine footprint of the global labor market has improved. However the increasing population of employed women experience poor terms and conditions of work (United Nations Research Institute for Social Development (UNRISD) 2005). Possible inferences at this point include: that women are probably less paid; women are fewer in professional, technical and managerial types of work; and that women do not enjoy succession to higher levels of work or pay.

Women and Work

With regard to work, women's effort could be grouped into reproductive work, economically productive work, and community managing work. These groupings respectively refer to women's biological roles for children and family; work done in exchange for payment in cash or in kind; and the mostly voluntary or unpaid community management work. In contrast, most work undertaken by men for the general good is usually rewarded in some way (Moser, 1993). The suggestion here is that there are culturally embedded perspectives with regard to gender and labor. Furthermore there could be fundamental differences in perceptions and management of human resource across human cultures, which are gender-based.

Human Resource Management

Human Resource Management (HRM) could be seen as influencing the employee population of an organization, different from the organization's ownership (Wojtkiewicz 1985). More recently HRM is described as the procedure for achieving balance between growth and development for any organization; and the same for its employees, within the organization's capacity (Grobler et al. 2006). HRM is essentially aimed at improving effectiveness of employees in an organization (Heneman et al. 1986). The process of HRM moves from policy to practice. As such policies are developed, interpreted and then implemented (Grobler et. al. 2006). Presently the advent of globalization has impacted the practice of HRM appreciably. Recent developments include global expansions of companies; mutual awareness of cultural differences; Asian economic growth; outsourcing of production to less developed countries; impact of information and communication technologies; labor issues such as leave allowances, remunerations and compensations (Friedman 2007). Specifically, in the US influence of diverse cultures are felt. There is push towards strategic HRM and speculation on future directions. In the UK more regulations are emerging. There are more incentives through compensation regimes and flexible working conditions. In Japan, traditional practices remain strong but human resource (HR) practices are gradually changing in response to global factors (Česynienė 2005).

The Feminist footprint in Africa and South Africa

Preceding arguments suggest that cultural peculiarities and history are strong influences on women and work. It is therefore arguable that African countries have good grounds for women's liberation. Across the African continent there are records of African women leaders of resistance movements, as early as the 7th century. Examples include the Berber Queen, Kachine of the Maghreb; 9th century Magajiyas of Daura; 16th century Queen Amina of Zazzau; and 19th century Nehanda of Zimbabwe. Moreover, early 20th Century has records of Igbo (Ibo) women leading resistance in the Aba women's riots (Net Industries 2010, Oxford University Press 'OUP' blog 2007, Trask 2004). In South African history, prominent women activists include Charlotte Maxeke, Lillian Ngoyi, Helen Joseph, Sophie du Bryun, Bertha Gxowa, Amina Cachalia, Albertina Sisulu, and Winnie Madikizela-Mandela (Mlambo-Ngcuka 2006). The formal feminist movement in South Africa started with the 1990 Malibongwe conference in Holland, which gave birth to the 'Statement on the Emancipation of Women in South Africa'. This was followed by adoption of 'Women's Charter for Effective Equality' by Women's National Coalition in 1994 (African National Congress n.d.). Local feminist efforts have since brought constitutional changes in the areas of gender equality and socio-economic rights (Hassim 2005).

Prior to the Malibongwe conference, apartheid South Africa institutionalized gender-based discrimination at the workplace. Denial of employment by legislation existed and promotion to management level was non-existent. The severity of such circumstances was felt more by racial definition (Bezuidenhout et. al. 2008). The infamous Bantu education policy was a major tool for incapacitating the African (black) workforce (Christie & Collins 1982, South African History online n.d.). However post-apartheid South Africa has seen the emergence of legislation, strategies and interventions to empower women in the work place. There is the Act 66 of 1995

(Labour Relations Act); Act 108 of 1996 (South African Constitution Act); Act 75 of 1997 (Basic Conditions of Employment Act and Amendments 42/1996, 27/1998, 2/2002); and Act 97 of 1998 (Skills Development Levies Act). The focus of complimentary legislation is on health and safety, and workers' compensation for injuries and diseases (The South African Department of Labour 2010). Despite such positive developments, South Africa had poor global HRM rankings in the year 2000 (Grobler et. al. 2006). In response, certain legislation has been amended, while new ones have been put into effect. The Basic Conditions of Employment Act was amended. New legislation include: The Employment Equity Act of 1998 and The Promotion of Equality and Prevention of Unfair Discrimination Act of 2000. The South African national policy framework for women's empowerment and gender equality was instituted in 2002. The framework aims to provide equal opportunities to previously disadvantaged groups in South Africa, especially women (Public Service Commission 2006).

Women in Construction in South Africa

Following developments mentioned in the preceding paragraph, the government has also instituted numerous programs to address female employment, especially in the construction industry. Firstly, there is the Emerging Contractor Development Programme (ECDP), which targets all emerging contractors while giving preference to female emerging contractors. Secondly, there is the Affirmative Procurement Programme (APP), which has been administered by the Department of Public Works (DPW) since 1999, and facilitates wider access to government contracts. Thirdly, the Contractor Incubation Programme (CIP) was started in 2004 as part of the ECDP, and aims to further develop emerging contractors. Consequently there has been an improvement in the number of female contractors. Women-owned contracting companies have attained 48% proportion in the Construction Industry Development Board (CIDB) register. Despite the interventions highlighted above, statistics show that men still dominate construction, with over 50% proportion (Didiza 2008). In line with creating an enabling environment, there are complimentary efforts by voluntary organizations towards leveling the playing field for women in construction. There is notably the South African Women in construction (SAWIC), and Kuthaza. SAWIC was inaugurated in 1997 with the vision of improving women's roles in construction and housing sectors through the propagation of lucrative business enterprises. Efforts of SAWIC include technical and entrepreneurial capacity-building and creating networks and partnerships for women in construction (SAWIC 2009). Kuthaza targets contractor development, talent development and bridge building. Formerly known as Women for Housing, it was inaugurated in 1995 (Kuthaza 2009).

It is arguable at this juncture that growth in the proportion of women in the South African construction industry could be attributed to female emerging contractors. Nevertheless, these interventions are designed to level the playing field for women in construction generally. However, the figures remain low despite such interventions. Women made up 44.87% of the employed population in South Africa as of September 2009. Women in construction comprised only 13% (Statistics South Africa 2009). In related research, reasons proffered for poor feminine footprint in construction include: discrimination in employments and promotions, and lack of support structures for female staff (Dainty et al. 1999, Fielden et al. 2001). Therefore on the background of the literature reviewed, there is a need for investigations into the feminine footprint of the South African construction industry. For the purpose of the article, trend of

employment is used as a backdrop for examining the following: Formal and informal sectors of the industry; the trend across levels and types of work; and the influence of population characteristics on women in construction.

Methodology

Methodological requirements for moving the research forward were deemed to be basically exploratory. Based on the data requirements for further investigations, secondary data analysis was chosen for the research. The South African Labour Force Surveys (LFS) data sets from Statistics South Africa (Statssa) were utilized. Access was obtained through the Statssa online database, (www.statssa.gov.za/). A number of steps were adopted for the methodology, in order to explore the data set adequately. Analysis of the trend was performed, using time series analysis. Ex post facto design was used to investigate the overall impact of a specific independent variable (in this case, gender mainstreaming), on dependent variables (female employment and promotion) in the South African construction industry (Leedy & Ormond 2010). Descriptive cross-sectional analysis was employed to describe the current situation, and also to analyze the outcomes for relationships with population characteristics. Bivariate and regression analyses were performed as steps to further interrogate the data set (Remenyi et al. 2011). By examining the trend, development of female employment in construction over time is ascertained and highlights are identified for cross-sectional analysis. The trend also shows indicators of the rate of response of the construction industry to issues and interventions highlighted in the literature review. From the initial descriptive analysis, population characteristics were investigated for relationships with the employment status of women. The trend analysis was performed for the time frame of 2000 - 2011. Further detailed trend analysis showing women in levels of work within the construction industry was performed for the time frame of 2007 - 2011. The reduced scope in this case was due to research limitations.

Data Description, Presentation and Analysis

The data set used for analysis is a combination of nominal and ordinal level data. Two groups are used to categorize levels of work, namely high and low levels. High level of work comprises managerial, professional and technical people, while low level of work is made up of the opposite. Specific types of work consisted of senior official and management; professionals; technical and associate professionals; clerks; service works, shop and market sales people; skilled, craft and related trades; plant and machine operators and riggers; and elementary occupations. Population characteristics selected for analysis are age, marital status, province, education, and population group. Under age, there are six groups ranging from 29 years to 60 years and above. Marital status is made up of married, living with somebody, never married, divorced, and widow. Education has four groups ranging between none and tertiary; and all nine provinces in the country are represented. Furthermore, for the population group, African, white, Indian and colored categories are represented.

Results in Figure 1 indicate that the number of people employed fluctuates over the years. Any element of growth is however accounted for mostly by male employees. Population of men fluctuates closely to the total employed population at each point in time, while the women population trails behind in volume. Between 2006, 2007 and 2008 there were sharp increases in

employment, which were accounted for mostly by men. Between 2000 and 2011 the rate of increase for females in construction has been about 5.88%. In 2010 women made up 11.29% of people in construction while men were about 88.71%. As of 2011, the figures have not changed significantly, with men still about 87.51%, while women make up 12.49%.

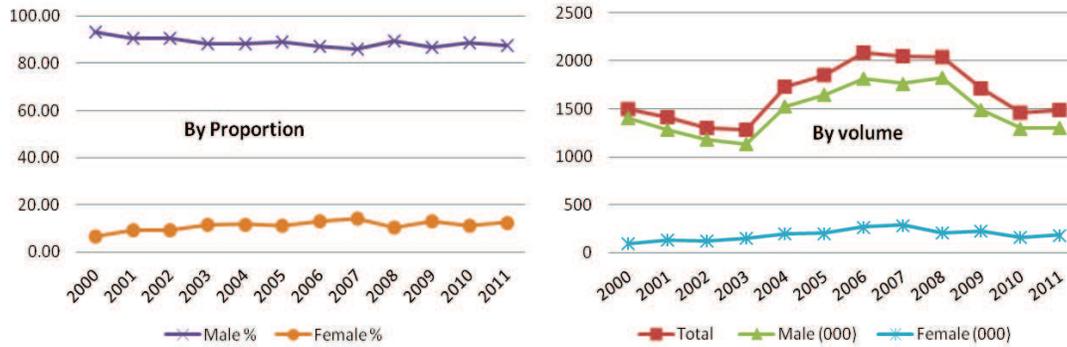


Figure 1: Trend of employment in the S.A. construction industry, by gender in volume and proportion for (2000-2011).

Results presented in Figure 2 show the wide margin referred to earlier, remaining relatively the same in both formal and informal sectors. Proportions for both males and females in the formal sector suggest a closing of the gap especially from the middle of 2008 onwards. Conversely the gap in the informal sector is widening over time. Even more significant is that from 2008, the proportion of women in the informal sector declines and stays below 10%. As of 2011, the proportion of women in the informal sector was 3.91% of the population. Furthermore fluctuations are noticeable in both sectors; with the informal sector experiencing more fluctuations.

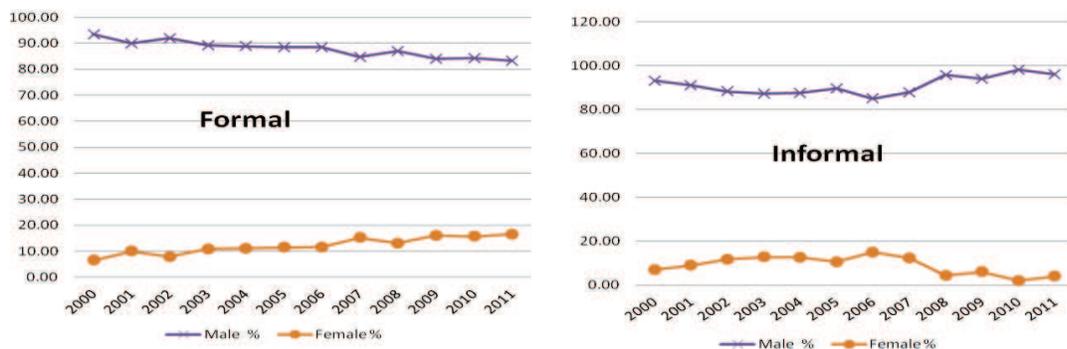


Figure 2: Trend of women proportions in formal and informal sectors of S.A. construction industry (2000-2011).

Figure 3 shows results of analysis on proportions of women in levels of work categorization in the formal sector, as discussed in the methodology section. Low level work category (non-managerial/professional/technical), is consistent at high proportions and rising. Also high level of work (managerial/professional/technical) is consistent at low proportions and decreasing. In

addition the chart suggests a widening gap between the two levels of work. Between 2007 and 2011, the volumes of female employees each year show that more women are working in the low level category of work. Furthermore, trend analysis for women in specific types of work within the construction industry was performed for the time span of 2006 - 2011. Elementary occupations remain generally within the same proportion for females. The highest rise in proportion was recorded for clerks in 2009. Generally proportions of the higher level work types seem to be declining over time.

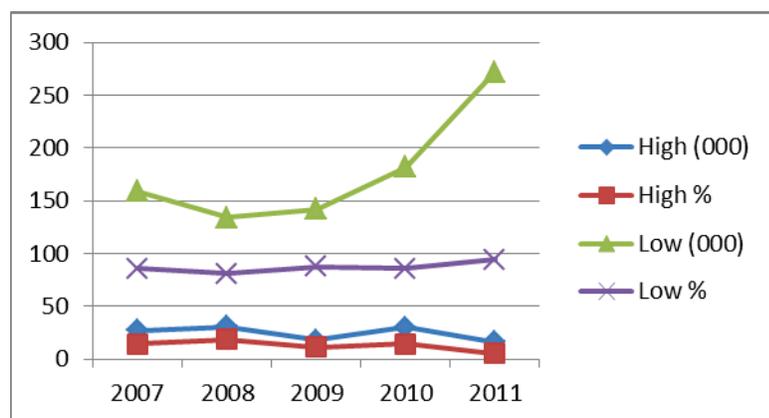


Figure 3: Trend of women by levels of work in the formal sector of S.A. construction industry (2007-2011).

Cross-Sectional Analysis of 2011 Data for Women in Construction in South Africa

In light of the above results, a cross-section of 2011 LFS data was evaluated. The data was collected from a sample of 138,000 women who were doing some form of work in the construction industry. Initial analysis used details of specific types of work as specified in the data description. The results are as follows: majority of construction employees in elementary occupations, about 53%, are women. Only 14% of these women are employed in skilled crafts and trades. Other work types have less than 10% women proportion. Particularly, only 2% of the professionals are women. Senior and management positions have 7% women proportion, while technical and associate professionals have 5% female employment. Furthermore, population characteristics including: educational level, population group, marital status, province, and age group were analyzed. Most respondents, at a proportion of 56.52%, have secondary education; 25.69% have primary education; and 10.87% have tertiary education. In terms of population group, people of African descent make up the largest group at 76.09%. They are followed by the people of European descent with a wide margin of 13.77%. Colored and Indian or Asian people make up 8.7% and 1.45% of the sample respectively. For marital status, single women who never married make up the largest sub-group with 47.1% of the sample population. Married women or those living with a partner are 37.68%, followed by widows and divorced women. Under provinces, KwaZulu-Natal (KZN) accounts for highest proportion of women in construction within the survey sample, with a value of 39.13%. KZN is followed by Gauteng province with 13.04%, and Eastern Cape with 10.87%. With regard to age groups, women in the range of 40-49 years of age are highest in number at 29.71%. Women in the 20-29 years and 30-

39 years of age share the same proportion of 23.91%. Women who are 50-59 years of age are the least in number.

Bivariate Analysis on 2011 Data on Women in Construction in South Africa

Bivariate analysis was performed on the LFS data to determine the significance of population characteristics selected for analyzing the LFS sample, using STATA 11 statistical software. High and low levels of work were used as outcome variables, as described in the methodology section.

For educational level, the highest concentration (84.62%) of the population is in the secondary education category, and is located under lower levels of work. For population groups, about 26% of the people of European descent (white) are in the higher levels of work; while only 7.62% of African people (black) are in the same category. For those married or living together, and those who are single; the greater percentages of each sub-group lie within the lower levels of work. In addition the entire proportions (100%) of widows and divorced women are in lower levels of work. The Gauteng province has the highest proportion of women in higher levels of work; with a proportion of (38.89%). This figure is still appreciably less than half the proportion of women in construction within the province. Three out of nine provinces, namely Northern Cape (NC), Free State (FS), and North West (NW); have 100% of their women in lower levels of work. For the age variable, 100% of older women (50+ years), are in lower levels of work. Women of 20 – 29 years of age are the highest proportion in higher levels of work. Investigating educational level further shows that Africans (black) and Europeans (white) are at the extremes. The black female population group have about 16,000 people who are without formal education. White women make up 25.87% of tertiary educated women working in construction. More black women are found in primary and secondary education levels, than in the tertiary level. Furthermore, the distribution of educational levels seems to be between higher and lower levels of work.

With regard to probability values (p-values) measured for various predictors in the bivariate analysis, Table 1 below shows that the three predictor variables which have significant values are: Education, province and population group of individual women. They are therefore considered as having some degree of association with levels of work for women in construction.

Table 1

Showing significant predictor variables from the bivariate analysis

	Educational level	Population group	Province
p-values	0.016	0.046	0.017

Multivariate Analysis of Significant Predictor Variables from 2011 Data on Women in Construction in South Africa

In order to further determine the significance of the selected population characteristics on women in the two levels of work (high and low levels), regression analysis was performed. A number of procedures were followed in order to validate results further, as described in (Remenyi et. al. 2011). Two software packages were used, namely Stata 11 and Microsoft Excel 2010. Stata 11

was used to perform logistic regression, while Excel was used to perform linear regression. Coefficients of regression and associated p-values are used to assess the significance of predictor variables at a 95% confidence interval, which is normal for such social science related research. Table 2 below shows results of logistic regression. Educational level was found to be the only significant population characteristic, with a p-value of 0.009. With high level of work as the outcome of interest, educational level has a regression coefficient of 1.31 at 95% confidence interval. Therefore, for every value increase in educational level, outcome in terms of levels of work is influenced by up to 1.31 times the value increase in educational level.

Table 2

Showing Logistic Regression Results for Selected Predictors

Work Type (reference: Non Manag/Prof/Tech)	Coefficient	p-values	95% CI	
*Educational Level	1.31	0.009	0.3327	2.2767
Population Groups	0.31	0.149	-0.1110	0.7334
Province	0.97	0.408	-0.1326	0.3263
Constant	-5.67			
N	138			

*=Significant at 95% confidence interval

With regard to the relationship of women in types of work with education and population group, education is the significant variable with a p-value of 0.009 and an appreciable coefficient of 1.28. When regressed separately, population group is significant with a p-value of 0.022, but a low coefficient of 0.47. Table 3 below shows result of linear regression on educational level, with level of work as reference. By visual comparison, results of Table 2 and Table 3 validate each other, meaning that results of both analyses are within the range of accuracy. As further steps in ascertaining the strength of relationship between the predictor variable (educational level) and outcome variable (levels of work), hypothesis testing is performed. The hypothesis testing investigates if the regression model for the predictor substantiates a significant proportion of the variance in the outcome variable. The hypothesis used here is a test of significance, using p-values. Use of p-values is based on the assumption that the null hypothesis is true. The hypothesis test ascertains the predictive strength of the regression model, at 5% level of significance whereby (alpha = 0.05). Null and alternative hypotheses are stated, along with the decision rule (Remenyi et. al. 2011).

Null hypothesis Ho: There is no predictive ability in the regression model

Alternative hypothesis Hi: There is predictive ability in the regression model

Decision rule: if p-value of predictor variable is less than alpha then reject null hypothesis; otherwise do not reject null hypothesis.

As shown in table 3 the p-value of 0.002127 is well below alpha value of 0.05, which supports rejection of the null hypothesis. As a result the alternative or research hypothesis is supported. Therefore, it can be concluded that there is predictive ability in the regression model for educational level, with reference to levels of work for women in construction.

Table 3

Showing linear regression results for educational level

	<i>Coefficients</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	-0.07245841	-1.10223	0.27231	-0.202459725	0.057542904
EDU LEVEL	0.110166359	3.131952	0.002127	0.040605687	0.179727031

As a final confirmation, Analysis of Variance (ANOVA) result for the linear regression model is used to test for statistical fit of the regression model. Table 4 below shows the ANOVA result. The final confirmation is performed by ascertaining if the R2 value (square of correlation coefficient) is statistically significant, by using the associated level of significance of the F-statistic in the ANOVA (Remenyi et. al. 2011).

The associated significance level of the F-statistic is 0.002126557, which is 0.21%. Therefore, there is only a 0.21% chance that the regression model does not have predictive value. In other words, the ANOVA table indicates a statistical fit of high significance at the 0.21% level.

Table 4

Showing ANOVA table for regression with educational level predictor

	<i>Df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	0.95158188	0.951582	9.809122	0.002126557
Residual	136	13.19334566	0.09701		
Total	137	14.14492754			

Findings and Conclusion

Firstly, the trend analysis suggests that the gender-positive environment in post-apartheid South Africa has increased female employment in construction generally. While female employment has increased over time, the rate of increase suggests a very slow improvement. Over time, the proportion of men employed suggests a downward trend while the proportion of women employed suggests an upward trend. However, the value of these proportions or absolute values of women employed at each point in time remain very low compared to men. Therefore women have consistently constituted a small proportion of employed people in the South African construction industry. The margin of 75.02% between current proportions of men and women suggests a wide lacuna and very slow pace of development for women in construction. Though there is long-term trend of convergence, the proportion of women increased minimally. The trend of convergence is more obvious in the formal sector of the industry. The trend in the informal sector moves from convergence to divergence, whereby the proportion of women employed declines, in comparison to proportion of men. A higher degree of fluctuation is evident in the informal sector, while more women seem to be gaining employment in the formal sector. Secondly, increase of the proportion of women in the formal sector is suggestive of impact, from the enabling environment of regulations, policies, and other interventions. Thirdly, the thinning out of the proportion of women in the informal sector could be as a result of cross movement of people between the two sectors. It could also result from more women leaving the industry, after

failing to make it into the formal sector. Transitions from the informal to the formal sector require a measurable increase in skills, education and / or upgrading to formally registered contractor status. The recent negative economic climate, though transient could account for movement in either direction, or out of the industry. Fourthly, the trend of increase in female employment does not necessarily yield much value for the female workforce, since most female employees fall within the elementary occupations type. In addition, while the majority of educated women in construction are in the lower levels of work, only females with secondary and tertiary education are in the higher levels of work.

Furthermore, both race and education have strong relationships with types of work for women in construction, with education being the stronger predictor. Race being a predictor, albeit reduced, confirms findings from literature about South Africa's history. Moreover, fewer women are employed in the managerial and professional work categories. Also, there seems to be further reduction of racial barriers to female employment in construction, but a sub-optimal development in the educational status of the women. Similarly, it is arguable that there is little or no succession to higher levels of work for women in the formal sector of construction, mainly due to race and educational barriers. Traditionally, race was the major dividing issue in South Africa. In the apartheid era, race was directly linked to educational status, and as such access to higher level skills, and consequently more employment opportunities. Therefore, there is still a visible racial divide in the types and levels of work for women in the South African construction industry. Findings at this stage lead to the question of commitment on the part of the industry, in implementing gender mainstreaming policies. There is also the question of how enabling the environment has been for increase in female employment and promotion. It is also arguable that certain types of work in the South African construction industry have become 'employment safe havens' or 'labor quarantines', for previously disadvantaged women in the country. In the article, employment safe havens refer to the situation where previously disadvantaged women are concentrated in lower levels and types of work because it is easier to be employed and retained at such levels. Similarly labor quarantines refer to the situation whereby previously disadvantaged women experience a ceiling in promotion from such lower work levels and types, due to population characteristics.

Besides race and education, there may be other equally strong predictors. While all possible population characteristics were not included, educational level consistently returned significant results. Therefore educational level presently constitutes one of the most influential factors for employment and promotion of women in construction within South Africa.

Conclusion

Research presented in the article represents work done so far in this regard. Origin and development of gender equality has been chronicled, showing the fundamental bases that enable female employment in South Africa. In light of interventions from the public and private sectors, the feminine footprint of the South African construction industry has been investigated to and appreciable extent. Findings suggest that gender-related interventions in the country have had minimal impact on the state of female employment in construction. Nevertheless, there are other factors which might have had additional impact on the situation. Moreover, literature suggests that much of the increase in females employed in the South African construction industry can be

accounted for by increase in female emerging contractors. All members of this group are not necessarily involved in the technical aspects of construction. It is therefore important to investigate the proportions of women in different levels of work within the group. It is also important to investigate the degree of gender equity and female empowerment practiced in such enterprises. In light of the findings and discussion above, the following propositions are made as a guide to further research:

1. Besides education; age range and province of origin or residence still have strong predictive ability on levels of work for women in construction in South Africa.
2. Population group (race) is a strong predictor for employment and levels of work for women in construction in South Africa.
3. Population group (race) is a strong predictor for promotion to higher levels of work for women in construction in South Africa.
4. There is no effective succession plan for women in construction from lower levels of work to higher levels.
5. A large percentage of the management class could be made up of political appointees, who are not necessarily of any relevant technical background.
6. In higher levels of work there are sub-groups made up of legislators and government officials, which do not truly reflect industry development in terms of women and work.
7. There is disparity between the volume of female graduates and women being employed at graduate level in the construction industry in South Africa.
8. Implementation of gender mainstreaming policies among women contractors is sub-optimal.
9. Female contractors lag behind their male counterparts in implementing gender mainstreaming.

Furthermore, there is need to compare South Africa with other countries of the world. It is also important to investigate the progress and experiences of female graduates of construction related disciplines in the country.

Limitations on the research were due to the secondary nature of data utilized for analysis. Unavailability of certain information such as levels of work for earlier years placed further limitations on the research. Also, largely undefined sample sub-groups with labels such as 'other' made it difficult to approach higher degrees of accuracy in the analysis. In light of findings thus far, it is recommended that there should be increased monitoring of adoption and implementation of gender related policies and legislation among construction industry employers in South Africa. Furthermore established female contractors should be used as vehicle for improving the feminine footprint through special incentives.

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