

**Demographic Differences in Competition at Work:
Implications on Person-Environment Fit¹**

Thomas D. Fletcher²

FletcherT@umsl.edu

314.516.5467

Department of Psychology
University of Missouri – St. Louis
St. Louis, MO 63121

Debra A. Major³

&

David N. Nusbaum²

¹ This material is based upon work supported by the NSF under grant no. EIA 0204430.

² Department of Psychology, University of Missouri - St. Louis

³ Department of Psychology, Old Dominion University

ABSTRACT

The present research examines gender and ethnic differences with respect to competition in the workplace. Gender differences for trait competitiveness and ethnic differences for both competitiveness and competitive climate exist. Gender, but not ethnicity was found to be disproportionately distributed with respect to high/low levels of trait and climate perceptions. This study contributes to the literature by assessing fit with a personality and climate variable as an outcome.

Demographic Differences in Competition at Work: Implications on Person-Environment Fit

Research in the 1970s and early 1980s demonstrated clear gender differences in competitiveness (Spence & Helmreich, 1983). It was once thought that men were more achievement oriented than women. Such sentiments prompted Spence and her colleagues to develop a measure of achievement motivation, which assessed three facets (mastery, work, competitiveness). Their research confirmed gender differences, but not in the ways previously thought. Partially based on their research, changes were made into the socialization practices of girls to ‘close the gender gap’. While speculations have been made (Conlin, 2003) as to changes in gender differences, research has not been published assessing such changes. Further, these differences focused on personality traits rather than situational factors (e.g., climate perceptions). Little research has been done in workplace settings as compared to academic settings. Finally, differences in ethnicity have largely been overlooked in this area of research. The purpose of this paper is to investigate the gender and ethnic differences in the personality trait competitiveness and in climate perceptions of competition.

Gender Differences in Achievement

It is not accurate to state that men are (or ever were) more achievement oriented than women. Rather, it is more accurate to state that gender differences exist in type of achievement motivation. Research by Spence and her colleagues (see Helmreich & Spence, 1978, Spence & Helmreich, 1983) demonstrated that men tended to be more competitive than women in a number of samples (e.g., college students, business people, varsity athletes), but no differences existed in two other facets of achievement motivation (mastery and work). Furthermore, Spence and her colleagues demonstrated that the competitiveness facet lead to negative outcomes, whereas the mastery and work facets were positively related to traditionally viewed outcomes

such as academic and vocational achievement (Spence & Helmreich, 1983). More recently however, speculation from the popular press has begun to articulate a 'new gender gap' (Conlin, 2003). In a *BusinessWeek* cover story, anecdotal evidence, coupled with sporadic statistics, were provided to suggest that boys are falling behind with respect to achievement. By implication, men will soon be less achievement oriented than women. Such differences, however, have not been investigated empirically in working adults in more than 20 years.

Ethnic Differences

In an edited volume on achievement and achievement motives (Spence, 1983), Boykin articulated the potential cultural explanations for ethnic differences in achievement. At the time, predominant wisdom was that socio-economic factors prevented certain groups (e.g., African-Americans) from attaining cognitive skills necessary for academic success. Boykin challenged this claim and described both cultural and socio-structural reasons for any divide. To the extent that cultural values are manifested as individual differences at a group level, one may extrapolate cultural differences in individualism/collectivism as manifesting as differences in facets of achievement motives. For instance, Gaines et al. (1997) demonstrated significant ethnic differences in collectivism and familism, but not individualism. These differences were moderated in a subsequent study by gender (Gaines et al., 1997). Given these differences, one might suspect that similar differences exist for competitiveness given the similarity of competitiveness to individualism and cooperativeness to collectivism (at least within groups). Of course such extrapolations need to be empirically tested.

Types of Competition

Research to this point has largely investigated gender differences in trait competitiveness or ethnic differences in cultural values. Differences in actual achievement have been focused

largely on academic achievement or cognitive processes (Kamphaus, 2001). Focusing on actual achievement is somewhat confounded with abilities. That is, actual achievement is resultant from the interaction of abilities and motivation (Campbell & Pritchard, 1976). In the present study, we are interested in motivational factors such as personality (achievement motives), situational factors such as climate perceptions, and their interaction.

Personality. The personality trait, competitiveness, as conceptualized by Helmreich and Spence (1978) is one of three facets of achievement motivation. Competitiveness is defined as “the enjoyment of interpersonal competition and the desire to win and be better than others” (Spence & Helmreich, 1983, p. 41). Trait competitiveness is positively related to valuing achievement, endorsement of hedonism, machiavelianism, and mistrust of others; trait competitiveness is negatively related to self-esteem and social concern (Bing, 1999; Ryckman et al., 1996; Ryckman, Libby, Borne, Gold, & Lindner, 1997). With respect to the Five Factor Model of personality, competitiveness is negatively correlated with agreeableness, positively correlated with neuroticism, but only modestly positively correlated with the achievement striving facet of conscientiousness and not at all correlated with the global factor of conscientiousness (Ross, Rausch, & Canada, 2003). While the focus of this research is in part following the research of Spence and her colleagues, more recent research has separated competitiveness from achievement motivation altogether (Fletcher & Nusbaum, under review).

Climate. Drawing on organization climate research, Brown et al. (1998) argued that a competitive environment should be viewed from a perceptual standpoint. They developed a measure of *competitive psychological climate* to be used with salespeople. They demonstrated that a climate by personality interaction exists with respect to self-set goals and by implication performance. To be consistent with contemporary climate theory (Schneider, 2000), we will

adopt the term *climate for competition*, or competitive climate. Climate for competition refers to the perceptions of a competitive environment resulting from structured competition for recognition, rewards or status within a work unit.

Person by situation interaction. There are many personality and situation factors that should be studied interactively (Kristof, 1996; Schneider, 1983). Kohn (1992) in his controversial case against competition noted that both personal and situational competition impacts behaviors. While Brown et al. (1998) argued that under certain circumstances the interactive effects of both types of competition brought about higher performance, they neglected to highlight the negative effects when low competitors perceive highly competitive environments. Fletcher (2005) found evidence for a similar interaction with respect to the perceptions of the receipt of coworker support. Less competitive individuals perceiving themselves to have highly competitive climates reported receiving less support from their coworkers. There was a much weaker (positive) effect of climate on coworker support for highly competitive individuals. Fletcher, Major, and Davis (under review) demonstrated that trait competitiveness and competitive climate interactively impact outcomes such as job satisfaction, organizational commitment, and job dedication. The results consistently indicated that for high trait competitors, climate makes little difference, but for less competitive individuals, a competitive climate is negatively related to outcomes. Therefore, being low in competitiveness, which is not to say low in achievement motivation, but perceiving the climate to be competitive, puts one at a disadvantage. Namely, experiencing this pattern of poor fit between trait and climate with respect to competition leads to less satisfaction, organizational commitment, perceptions of coworker support, self-set goals and indirectly lowered performance.

Current Study

Given the potentially negative effects resulting from the interaction of trait competitiveness and competitive climate, we are interested in whether gender or ethnic differences exist in trait competitiveness, competitive climate or their difference (trait - climate). That is, we are interested in knowing whether the gender differences from more than 20 years ago still hold in working adults, whether similar differences exist across ethnicities, whether similar differences exist in perceptions of competitive climate, and the extent to which each group is differentially distributed with respect to having low (or high) levels of competitiveness and experiencing low (or high) levels of a competitive climate.

Method

Participants

As part of a larger federally funded study of diversity within the information technology (IT) workforce, a web-survey was designed and administered. Invitations to participate were sent via email to 1388 individuals from 11 organizations. In all, 916 IT workers participated in the project, a response rate of 66.0%. Of those reporting gender, the sample consisted of 60.6% men and 39.4% women. The majority of participants were White (67.4%), with African-Americans (8.1%), Hispanics (5.6%), Asians (5.1%), Asian Indian (3.8%), and Native Hawaiians (.9%) comprising the remainder of the sample. Furthermore, 4.5% of the participants failed to record their ethnicity, while an additional .5% reported multiple ethnicities. The mean age of participants was 42 ($SD = 8.9$). The participants had been working in IT for an average of 14.4 ($SD = 8.7$) years.

Measures

Competitive climate. Perceptions of competitive climate were assessed using a four-item measure adapted from Brown et al. (1998) to be more general rather than specific to sales. An example item is, “My manager frequently compares my performance with that of my coworkers.” The response scale ranges from 1 (*strongly disagree*) to 7 (*strongly agree*). Coefficient alpha for the scale was .77.

Trait competitiveness. Four items from Helmreich and Spence (1978) were used to assess trait competitiveness. This commonly used measure assesses an individual’s desire to do better than others (Houston et al., 2002). An example item is “I enjoy working in situations involving competition with others.” The response scale ranges from 1 (*strongly disagree*) to 7 (*strongly agree*). Coefficient alpha for the scale was .88.

Ethnicity. Respondents were asked to mark their ethnicity from among seven U.S. census categories: American Indian or Alaska Native, Asian (non-Indian), Asian Indian, Black or African American, Hispanic, Native Hawaiian or other Pacific Islander, and White. Individuals reporting multiple ethnicity categories including White were categorized as the non-white selection. If, however, an individual had more than one non-White selection, the individual was coded as Multiethnic. Multiethnic individuals ($N = 5$) as well as individuals that failed to report their ethnicity ($N = 41$) were subsequently dropped from analysis.

Results

Table 1 shows the means and standard deviations for trait competitiveness, competitive climate and their difference for all demographic groups. Consistent with previous research, men are more competitive than women as a group ($t(df = 855) = 6.78, p < .01$). However, no significant gender differences exist in perceptions of competitive climate ($p > .1$). With respect

to ethnicity, significant differences in trait competitiveness exist ($F(6, 852) = 6.586, p < .01, \eta^2 = .04$). Similarly, significant ethnic differences exist in competitive climate perceptions ($F(6, 852) = 3.35, p < .01, \eta^2 = .023$). To assess whether any gender by ethnicity interactions may be present, a full-factorial ANOVA is assessed. For trait competitiveness and competitive climate, there is no significant interaction ($p > .1$). However, for trait competitiveness, the gender main effect is not significant ($\eta^2 = .003$), while significant differences in ethnicity do exist ($F(6, 843) = 5.43, p < .01, \eta^2 = .037$). A similar pattern is found for competitive climate. Gender is not significant ($p > .1$), but ethnicity is, $F(6, 843) = 3.10, p < .01, \eta^2 = .02$. To allay concerns that gender is somehow distributed unevenly across ethnicity, thus partially accounting for these results, we ran a χ^2 test of independence. The results ($\chi^2 (df = 6) = 9.87, p > .1$) indicate that gender is not distributed unevenly.

To assess whether or not gender or ethnic differences exist with respect to the personality – climate interaction as an outcome, we took two approaches. The first was to perform a median split on both the trait and climate variables and examine the distribution of gender and ethnicity in a two-by-two matrix (trait-high, trait-low by climate-high, climate-low). To the extent that any one group would be disproportionately represented in the trait-low – climate-high cell, that group would be disadvantaged. Likewise, individuals in the high-high cell are at the most advantaged. Table 2 displays the frequencies and percentages for gender. There are significant differences in the distributions within gender. That is, for men, $\chi^2 (df = 1) = 15.63, p < .01$, and for women, $\chi^2 (df = 1) = 11.81, p < .01$. Of particular note, 22.1% of women, but only 14.9% of men fall into the low personality – high climate cell. Further, 27% of men, but only 18.9% of women fall into the high personality – high climate cell. The only significant differences with respect to ethnicity

were within White (χ^2 (df = 1) = 18.53, $p < .01$), which may be attributable to the large sample size for that group (n = 617).

The second approach we took involved the computation of difference scores. We computed the difference as trait competitiveness – competitive climate perceptions. Descriptive statistics for all groups on the difference variable are presented in Table 1. We further trichotomized this variable into *trait is greater than climate*, *climate is greater than trait* and *climate and trait are equal*. We defined climate and trait are equal as all scores within +/- .5 standard deviation of the difference score from zero. We then looked at gender and ethnic differences in the frequencies for this new trichotomized ‘fit’ variable. Gender is disproportionately distributed (χ^2 (df = 2) = 17.99, $p < .01$), but ethnicity is not ($p > .1$). Table 3 shows the distribution of men and women for the ‘fit’ variable. The table shows that 19.3 % of women, but only 13.2% of men perceive their climates to be highly competitive while they are low in trait competitiveness. Likewise, 46.6% of men, but only 32.4% of women perceive their climates to be low in competition while they are high in trait competitiveness. More women (48%) than men (40%) experience fit with respect to their personality trait and climate perceptions.

Discussion

In a sample of IT workers, we found significant gender differences in the personality trait competitiveness. However, when assessed in conjunction with ethnicity, this difference is masked. That is, gender is not significant when controlling for ethnicity, but significant differences in ethnicity are present. With respect to perceptions of the work environment, we found significant differences in ethnicity, but not gender. While a significant gender*ethnicity interaction was not present in either personality or climate, these results suggest that both gender

and ethnicity should be assessed simultaneously. While gender differences existed more than 20 years ago, we do not know if a similar pattern existed then with respect to ethnicity.

On the other hand, gender differences, but not ethnic differences exist with respect to the distribution of each group in terms of a surrogate measure of fit. That is, when we dichotomized trait and climate as a median split and assessed the distribution of men and women in the two by two matrix, significant differences emerged. Women were overrepresented in the high climate – low trait cell and men were overrepresented in the high trait – low climate cell. Further, using a trichotomized version of difference scores (trait - climate) men more frequently experienced trait exceeding climate and women more frequently experienced climate exceeding trait. Coupled with previous research, this suggests that women are disadvantaged with respect to a number of outcomes not directly assessed in the present study (e.g., satisfaction, commitment, job dedication, coworker support, goal-setting).

One implication of this study is that selection research using personality measures may need to take heed to potential gender and ethnic differences in certain personality traits. One of the claims of personality advocates with respect to selection is that personality has few or no ethnic/gender differences and less likely to be a problem for adverse impact (Hough, Oswald, & Ployhart, 2001). This study highlights the differences in a single personality trait. Further, practitioners and researchers alike should go beyond main effects in looking at demographic differences. Another potential implication is the potential ill consequences for certain groups when fostering competition within a work setting. The synergistic motivational effects described by Brown et al (1998) may be more likely for men than women and the attenuated effects described by Fletcher et al. (under review) may be more likely for women than men.

With any research there are a number of limitations. The facet of achievement motivation, *competitiveness* was assessed without assessing the facets *mastery* or *work*. While this leaves us wanting, previous research did not find any differences in these two facets. The differences in previous research were in the maladaptive trait, competitiveness. Another limitation was in the relatively small sample sizes for each ethnic group. For some groups this may be a problem (esp. with power), but this study highlights the need to not collapse ethnic groups into artificial categories as has been practiced in the past (e.g., minority, non-minority). Even with the small sample sizes, significant variance in trait and climate were accounted for by the ethnic groups. Another potential concern is the age of the working adults in the present sample (average age = 42). One is left wondering if the differences found in this study are attenuated with younger populations?

This study examined both gender and ethnic differences in the achievement motivation facet competitiveness and the complementary climate perception competitive climate. We acknowledge that more recent investigations (Fletcher & Nusbaum, under review) have demonstrated competitiveness to be distinct from achievement motivation, but nonetheless wanted to follow-up the research conducted by Spence (Spence & Helmreich, 1983). We demonstrated significant main effect differences in ethnicity (and gender when ethnicity was not included in the analysis for trait competitiveness). We also looked at gender and ethnic differences in the difference scores (trait - climate) demonstrating that gender differences exist with respect to the fit of individuals in terms of their personality trait and their perceptions of the environment. We encourage other researchers to look at fit as an outcome.

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Table 1

Descriptive Statistics for each Demographic Group

Trait Competitiveness ^{a, b}									
	Total			Male			Female		
	N	Mean	SD	N	Mean	SD	N	Mean	SD
American Indian	27.00	4.67	1.38	16.00	4.80	1.24	11.00	4.48	1.59
Asian	47.00	4.58	1.24	27.00	4.82	1.20	20.00	4.25	1.25
Asian Indian	35.00	5.50	1.26	28.00	5.51	1.08	7.00	5.46	1.93
African American	74.00	4.13	1.31	38.00	4.26	1.45	36.00	3.99	1.14
Hispanic	51.00	5.03	1.31	34.00	5.17	1.25	243.00	4.75	1.43
Native Hawaiian	8.00	4.22	1.17	6.00	4.25	1.38	2.00	4.13	0.18
White	615.00	4.33	1.39	372.00	4.61	1.31	243.00	3.91	1.41
Total	857.00	4.43	1.39	521.00	4.68	1.36	336.00	4.03	1.41

Competitive Climate ^c									
	Total			Male			Female		
	N	Mean	SD	N	Mean	SD	N	Mean	SD
American Indian	27.00	4.06	1.30	16.00	4.05	1.51	11.00	4.09	1.00
Asian	47.00	4.26	1.31	27.00	4.21	1.08	20.00	4.32	1.58
Asian Indian	35.00	4.42	1.20	28.00	4.39	1.11	7.00	4.54	4.09
African American	74.00	3.51	1.31	38.00	3.38	1.34	36.00	3.65	1.27
Hispanic	51.00	3.92	1.35	34.00	4.01	1.48	17.00	3.76	1.09
Native Hawaiian	8.00	3.41	0.83	6.00	3.54	0.81	2.00	3.00	1.06
White	615.00	3.81	1.25	372.00	3.88	1.23	243.00	3.70	1.27
Total	857.00	3.84	1.27	521.00	3.76	1.29	336.00	3.90	1.26

Difference Score (Trait - Climate)									
	Total			Male			Female		
	N	Mean	SD	N	Mean	SD	N	Mean	SD
American Indian	27.00	0.60	1.46	16.00	0.75	1.45	11.00	0.39	1.52
Asian	47.00	0.32	1.38	27.00	0.61	1.08	20.00	-0.07	1.64
Asian Indian	35.00	1.08	1.23	28.00	1.12	1.21	7.00	0.93	1.40
African American	74.00	0.63	1.57	38.00	0.89	1.78	36.00	0.35	1.29
Hispanic	51.00	1.10	1.75	34.00	1.16	1.85	17.00	0.99	1.58
Native Hawaiian	8.00	0.81	0.72	6.00	0.71	0.60	2.00	1.13	1.24
White	615.00	0.52	1.63	372.00	0.73	1.59	243.00	0.22	1.63
Total	857.00	0.58	1.60	521.00	0.78	1.57	336.00	0.28	1.59

Note. Missing and multiple ethnic categories removed from analysis. ^a Asian Indians are significantly different from Asians, African Americans, and Whites. ^b Hispanics are significantly different than African Americans and Whites. ^c African Americans are significantly different than Asians and Asian Indians.

Table 2
Distribution of Men and Women in a 2 x 2 Depiction of Competition

	<i>Trait low</i>	<i>Trait high</i>
<i>Climate high</i>	Men = 14.9% Women = 22.1%	Men = 27% Women = 18.9%
<i>Climate low</i>	Men = 30.8% Women = 42.4%	Men = 27.4% Women = 16.6%

Note. For men, χ^2 (df = 1) = 15.63, $p < .01$. For women, χ^2 (df = 1) = 11.81, $p < .01$.

Table 3
Distribution of Men and Women in a 3 x 2 Depiction of Fit

	Men	Women
Trait < Climate	13.2%	19.3%
Trait = Climate	40.1%	48.2%
Trait > Climate	46.6%	32.4%
Total	100.0%	100.0%

Note. χ^2 (df = 2) = 17.99. Trait = climate was a range varying from 0 +/- .5 SD of the difference score.