Manifest Needs of Women in Male-Intensive Professions: A Replication Study

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FEMALE WORKERS HAVE ACCOUNTED for the majority of the increase in total workers since World War II.[1] In 1947, the ratio of women in the labor force was one to five[2] and approached two to five in 1970.[3] Today women comprise 43 percent of the labor force.[4] As a result of this development, one of the more dramatic changes occurring recently has been a rapid influx of female workers to nontraditional careers in male-intensive professions.

In examining this development, investigative studies are being conducted to analyze numerous factors influencing women in nontraditional careers. For example, studies investigating the impact of demographic factors,[5] self-worth,[6] family background,[7] personality,[8] and socioeconomic factors[9] have been conducted.

Women have been relatively successful at penetrating entry-level business occupations traditionally dominated by men, but they have experienced difficulties in moving into the upper levels of organizations.[10] Social attitudes, seniority, and discrimination factors have contributed to this development and numerous studies are being conducted to assess the impact and ramifications on the labor force.

This study examines personality characteristics of women in nontraditional careers, investigates the deviations over a decade, and com-

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pares personality profiles of the women to profiles of general adult men. Four occupational groups were included in an original study conducted in 1972: real estate, management, accounting, and university professors.[11] Though one of the occupational areas currently has more women than men—real estate—it is still included in the new study.

Related Studies

Accountants. Over the last few years, the number of women studying to be accountants increased by 35 percent and it is estimated that in the next five to ten years, an equal number of men and women will be studying accounting.[12] This development has attracted much attention and numerous studies have been conducted in the process. Osman[13] examined personality factors of male and female accounting clerks and concluded that female clerks were more sensitive, lacking in self-assurance, and less relaxed than the male clerks. Fraser, Lytle, and Stolle[14] studied women accounting majors and found that they exhibited significantly higher needs for the Edwards Personal Preference Schedule (EPPS) subscales of Achievement, Order, and Endurance relative to other college women. Knotts,[15] using the EPPS, found that women in accounting reflected significantly higher needs for the subscales Heterosexuality and Aggression than general adult women but had significantly lower needs for Order, Affiliation, and Nurturance. Attitudinal differences toward compensation, leisure time, and satisfying job tasks among male and female auditors were studied by Earnest and Lampe.[16] They found that females placed more value on leisure time than their male colleagues. Conversely, another study[17] found little difference between male and female accounting students in terms of psychological characteristics. In spite of the increase in the number of women in the accounting area, traditional views of their male coworkers (and perhaps spouses) had to be dealt with in order to be accepted in their profession. A sentiment representing this traditional view follows: "Women don't seem to be suited for business. They may study the same subjects, but they have different personalities."[18]

Professors. Though there are more women than men enrolled in universities today,[19] only 26 percent of the faculties are female, 16 percent of the administrators are female, and less than 5 percent of all college and university presidents are female.[20] Of the female faculty members, most are likely to be employed in the traditional female disciplines,[21] whereas the female university presidents are likely to be employed at women's colleges[22] and/or at colleges or universities with less than 3000 students.[23] Internationally, the underrepresentation of

females within higher administration is comparable to the United States.[24]

Studies of males and females in higher education yield a variety of results. A recent study by the Council of Graduate School's Committee on Women reported few job-related differences between male and female deans, but did note that the male deans saw themselves as having more authority than female deans in six of the eight job duties listed.[25]

Managers. If the increase of women in MBA programs is indicative of impending change, the composition of top administration and management will possibly change. While 26 percent of MBAs today are female there were only 3.5 percent a decade ago.[26] From 1973 to 1979 the number of master's degree recipients in business management increased from 13.1 percent of total graduates in 1973 to 30.7 percent in 1979.[27] Predictions of an even male to female ratio in schools of business will be realized within another decade if current tendencies prevail.[28]

Unfortunately this trend is not reflected in the management arena. Hendrick and Struggles, Inc., reported that the percentage of corporate women chairpersons, vice-chairpersons, and presidents had fallen from 1.5 percent since 1977. Women group vice-presidents, second vice-presidents, and assistants had dropped from 8.0 percent to 7.8.[29] *Newsweek* reported the same tendency, and also emphasized that executive women were clustered in the service and staff areas (such as public relations, personnel, and media) rather than in production and operational areas.[30] Other sources report innate problems for women in old-line, Eastern industrial communities,[31] basic manufacturing, industries, utilities, and natural resource companies.[32]

Sargent cited numerous studies concerning attitudes and comparative characteristics of men and women managers. Most of the studies reviewed indicated that women were perceived to have fewer and weaker managerial characteristics, likely to be more "feminine," have less power, be less likely to be listened to, and to be in an inferior position to make decisions.[33] Her prescription for this dilemma was to promote androgyny (having the characteristics of both sexes) among all managers, particularly the women managers. Gomez-Mejia[34] suggested that tenure on the job reduces the amount of attitudinal difference between women and men managers for women, but had no bearing on the change of attitudes among men.

Real Estate. The 1981 membership profile report prepared by the National Association of Realtors revealed that the role of women in real estate continues to grow.[35] In 1975, only 17.6 percent of brokers and 50 percent of full-time salespersons were female. By 1981, nearly three out

of every ten brokers and nearly six out of every ten full-time salespersons were female.

The changing phenomenon of women in real estate is consistent with the labor force activity of women in general. Mature women have the advantage of social contacts, influential sources, and a flexible work schedule.[36] This description reflects findings of another study in which real estate women showed significantly higher needs on the subscales of Succorance, Change, and Heterosexuality, but lower needs on Deference, Order, Abasement, Nurturance, and Endurance than general adult women.[37]

Current Study

This study investigated personality variables of women in nontraditional careers to determine if and/or how these women have changed over the decade. It replicated one study conducted in 1972,[38] updated conclusions, and drew further conclusions from the original study. Also, a new dimension was added to this study—a comparison of personality characteristics of men and women.

Professional women in nontraditional careers studied in the 1972 study[39] expressed significantly different needs on eleven of the EPPS subscales than general adult women. More specifically, the women expressed higher needs for Achievement, Exhibition, Dominance, Heterosexuality, and Aggression—stereotypically male needs. Those needs of women showing significantly lower needs were Deference, Order, Affiliation, Succorance, Abasement, and Nurturance—stereotypically female needs.

In 1975, Dehning[40] replicated the 1972 study but surveyed women in two occupational areas (real estate and management). While women in Dehning's study were slightly younger, educational levels and marital status were comparable. The major difference of personality subscales was in the area of Autonomy. Women in Dehning's study indicated a higher need of autonomy (significant at the .01 level), whereas women in the original study indicated a lower need, though not significant. Other personality variable trends were comparable.

Another replication of the study in 1976 surveyed women MBA students.[41] Anderson compared scores of MBA women to normative scores of average college women rather than normative scores of general adult women and found the same basic personality trends as in the original study. Of notable interest, however, was the gap between the scores of MBA women and normative scores of average college women.

Differences between the test group and the normative group were greater in Anderson's study in the original study she replicated.

The Edwards Personal Preference Schedule, a standardized personality inventory reflecting fifteen "manifest needs," was used in establishing profiles for the women surveyed. Normative scores were designed for four adult groups (general adult women, general adult men, average college women, and average college men) by profiling 4000 respondents from a cross section of people. To detect the possibility of random guessing, the EPPS was constructed with a consistency score. The manual recommends a minimum score[42] before considering a profile invalid.

The EPPS was designed primarily as an instrument for research and counseling to provide quick and convenient standards for a number of relatively "independent normal variables."[43] From 225 pairs of statements reflecting personality needs, the respondent selects the statement most representative of herself, or in some instances, the ones least distasteful to herself. Both statements may be equally desirable or equally undesirable, but a choice between the two must be made.

Group means were compared statistically by testing null hypotheses of "no difference." Z-values were computed using the large sample form:

$$Z = \frac{\overline{x}_1 - \overline{x}_2}{s_1^2/n + s_2^2/n_2}$$

Research Design

Women were selected from four business-related occupations traditionally dominated by men, replicating the same four subgroups used in the original study.[44] A sample size of 120 was utilized, with 30 being selected from each area. The university professor subgroup consisted of women at four-year institutions who taught subjects in business administration, excluding business education and clerical topics.

Women in three of the areas selected were represented by professional organizations, and the survey instruments were administered to members of those organizations. Professors had no such organization; thus, women instructors in business administration departments were contacted individually. Approximately 300 respondents were profiled, but only 30 responses with consistency scores of 11 or above from each occupational area were randomly selected for tabulation.

The survey instrument used was the Edwards Personal Preference Schedule, which measures fifteen personality characteristics reflecting "manifest needs."

Analysis of Results

In reporting the results of the study, several questions were raised:

1. Are the sample results of 1982 significantly different from female norms?
2. Are the sample results of 1982 significantly different from male norms?
3. Have needs changed significantly over time?
4. Have the needs of women in nontraditional occupations become more like those of the male norm over time?

The focal point was to discover how the needs of women in nontraditional occupations have changed over the past decade.

Complete results of the study are shown in table 1. The sexual designations (M) for male and (F) for female indicate that, in normative groups, the mean score of that sex was significantly greater (at the .01 level) than the mean of the other sex. The mean (x) is shown for the two normative groups and for the 1982 test group. The 1972 data is shown immediately below the 1982 data. The statistics shown are: (1) z_m—the z-value for the difference between the test group mean and the male norm; (2) z_f—the z-value for the difference between the test group mean and the norm for women; and (3) z_c—the z-value for the change in the mean of that test group from 1972 and 1982.

In 1982, the sample of women in nontraditional occupations differed from the norm for females on several needs. First, women in the sample exhibited higher needs in the subscales on Achievement, Exhibition, Autonomy, Dominance, Heterosexuality, and Aggression than the female normative group. Over time, the difference between the sample women and the normative women increased also. In other words, these women became less like their normative peers over time. These women also had lower needs in the subscales on Deference, Order, Affiliation, Abasement, Succorance, and Nurturance than the normative women in 1982. Between 1972 and 1982, these same needs decreased with the exception of the need for succorance, which actually increased during the ten-year period.

In 1982, this sample of women in nontraditional occupations differed from the norm for men in several ways also. Generally speaking these women had higher needs in the subscales on Achievement, Exhibition, Dominance, Change, and Heterosexuality than the general adult male population. Compared to males, these women exhibited an increase in these same needs over the ten-year period. Their need in the subscales on Autonomy and Aggression also increased over time. How-

TABLE 1
INTERTEMPORAL COMPARISONS OF EPPS SCORES OF WOMEN IN NONTRADITIONAL BUSINESS CAREERS WITH THE NORMATIVE GROUPS OF ADULT MEN AND WOMEN

| EPPS Variables | Normative Group | | Total Test Group | | | |
| | Men | Women | | | | |
	X	X	X	Z_m	Z_w	Z_c
Achievement (M)	14.79	13.58	17.63	7.27ᵃ	10.38ᵃ	3.78ᵃ
			15.54	1.86	4.88ᵃ	
Deference (F)	14.19	14.72	11.32	-7.98ᵃ	-9.46ᵃ	
			13.78	-1.09	-2.49ᵇ	-4.79ᵃ
Order (F)	14.67	15.59	12.33	-6.12ᵃ	-8.55ᵃ	
			13.21	-3.31ᵃ	-5.40ᵃ	-1.53
Exhibition (M)	12.75	11.48	13.93	3.62ᵃ	7.53ᵃ	
			12.42	-0.89	2.53ᵇ	3.10ᵃ
Autonomy (M)	14.02	12.10	13.39	-1.76	3.62ᵃ	
			12.23	-4.36ᵃ	0.32	2.17ᵇ
Affiliation (F)	14.51	17.76	14.29	-0.57	-8.96ᵃ	
			15.79	3.39ᵃ	-5.22ᵃ	-2.82ᵃ
Intraception (F)	14.18	15.28	14.78	1.91	-0.72	
			15.98	4.20ᵃ	1.64	-1.69
Succorance (F)	10.78	12.86	11.03	0.64	-4.72ᵃ	
			10.51	-0.69	-6.02ᵃ	0.96
Dominance (M)	14.50	10.24	17.13	5.91ᵃ	15.53ᵃ	
			13.24	-3.01ᵃ	7.20ᵃ	6.49ᵃ
Abasement (F)	14.59	16.89	10.59	-9.35ᵃ	-14.76ᵃ	
			13.22	-2.69ᵃ	-7.21ᵃ	-4.01ᵃ
Nurturance (F)	15.67	18.48	12.73	-6.29ᵃ	-12.33ᵃ	
			14.73	-2.18ᵇ	-8.72ᵃ	-3.19ᵃ
Change (F)	13.87	15.99	15.96	4.97ᵃ	-0.07	
			16.67	6.39ᵃ	1.55	-1.19
Endurance (M)	16.97	16.50	16.30	-1.54	-0.46	
			16.34	-1.40	-0.36	-0.06
Heterosexuality (M)	11.21	8.12	15.30	7.89ᵃ	13.96ᵃ	
			13.60	4.08ᵃ	9.42ᵃ	2.23ᵇ
Aggression (M)	13.06	10.16	12.73	-0.76	5.94ᵃ	
			11.08	-4.78ᵃ	2.22ᵇ	2.79ᵃ

Notes: 1972 results are below 1982 results
  (M) —A need significantly higher among normative males
  (F) —A need significantly higher among normative females
  ᵃsignificant at the .01 level
  ᵇsignificant at the .05 level

ever, the need for Change, while higher than that need in men, actually decreased over time. Additionally, these women had lower needs in the subscales on Deference, Order, Abasement, and Nurturance than the norm for men. A decrease in the need for Affiliation and Intraception also occurred over time when compared to the norm for men.

Between 1972 and 1982, women in nontraditional occupations exhibited significantly increased needs in the subscales on Achievement, Exhibition, Autonomy, Dominance, Heterosexuality, and Agression. During that same period of time, these women's needs for Deference, Affiliation, Abasement, and Nurturance decreased. The increase occurred in needs characterized as male-like while the decrease occurred in needs traditionally considered to be female-like.

An overview of these results is illustrated in figure 1. In this figure, the needs have been regrouped, with Panel A containing those needs for which the normative males had significantly higher scores, while Panel B contains the needs which were higher among women. The z-scores from table 1 are shown for each variable, using 1982 data.

Conclusions

In terms of the 1982 data, women in the test group exhibited high scores on male-like needs, while they had low scores on the female-like needs. Over time, it appears that women in nontraditional occupations also increased these needs significantly. It would appear then that women start out exhibiting male-like subscales on Achievement, Exhibition, Autonomy, Dominance, Heterosexuality, and Aggression. As they spend time in their nontraditional roles, these needs are heightened. As these needs are heightened, the corresponding female-like needs are lessened.

Such a phenomenon could lead one to conclude that the characteristics identified by Edwards are mutually exclusive. That is, one cannot become both more dominant and more nurturing at the same time. If women in nontraditional occupations find themselves in male-intensive environments, their mentors and/or role models influence their behavior to become more male-like. Additionally, the expectation of the role influences behavior significantly. Such expectations require women to be aggressive not deferent, dominant rather than succorant, autonomous not affiliative, and achievement-oriented rather than abasement-oriented.

The findings of this study have definite implications for managerial policy. The fact that women in nontraditional careers have needs similar to those of men indicates that there is no basis for thinking that a
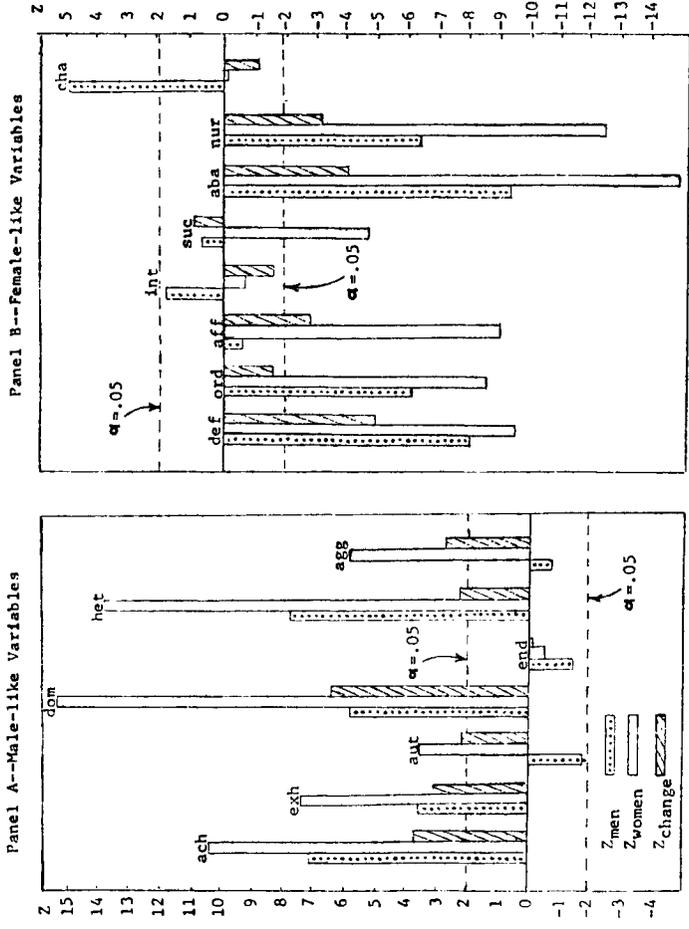
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Figure 1. Z-scores of Women in 1982 Study

particular management style will be more effective with one sex than the other. These results also indicate that, as decisions may be influenced by the needs of the decision-maker, there is no reason to expect decisions to vary with the sex of the decision-maker.

Any attempt to explain the reasons why women in nontraditional careers have needs more like those of men is clearly beyond the scope of this study. However, research into the reasons for these phenomena could provide valuable insights into a better understanding of women in nontraditional careers. One possible explanation is that women who possess more male-like needs are the ones who tend to seek careers in nontraditional areas. A second possibility is that women in traditionally male occupations attempt to emulate more male-like values in order to become socialized within the system more quickly. Still another closely related reason might be that the primary role models available to women in the workplace are male. Another explanation that offers considerable promise is that most of these needs are not the result of gender but are determined by occupation.

It must be pointed out that men in the normative group were selected from the general population. Considerable insight might be gained through a study of the psychological needs of men and women in similar positions within the same profession. Similarly, women in the control group were from the general population of women and included many who did not work outside the home. A comparison of working women in traditionally female careers and traditionally male careers could also offer additional insight into the psychological framework of working women.

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