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Revisiting the gender pay gap

Promotion of Employees in the Workplace: are men promoted more than women?

Note by Central Bureau of Statistics, Israel^{1,2}

Abstract

1. The Israeli Social Survey of 2008 focused extensively on the subject of social mobility and within that framework we will study promotion in workplace. This work will analyze the factors that influence advancement according to various socio-economic parameters: We know that women work shorter hours in a month, receive lower monthly and hourly wages, and in general acquire positions of career potential less often than men. All this is often been explained by the balance required from women between their work outside the home and their domestic duties. Positions that do enable the combination of these roles usually don't offer any horizons for significant advancement.

2. The question which is discussed in the survey is relevant to the employed population in Israel in the gender context: Are men more promoted than women in the work place? The answer to this question is complex. The findings show that the rate that women gain promotion in their work is lower than that of men. However, a comprehensive analysis (number of children, age of the youngest child, education, occupation, number of weekly work hours, income, etc.), reveals a more complex picture. Holding constant the number of work hours per week and other factors – women report more often than men of promotion at work. From this, it can be deduced that women are promoted at a lower rate than men, not

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² The Central Bureau of Statistics (CBS) encourages research based on CBS data. Publications of this research are not official publications of the CBS, and they have not undergone the review accorded official CBS publications. The opinions and conclusions expressed in these publications, including this one, are those of the authors and do not necessarily represent those of the CBS. Permission for republication in whole or part must be obtained from the authors.

because they are women, but because of factors at work. The most significant factor is the number of hours per week at work, which has a high correlation with gender: The conclusion is that with 40 hours or more of work per week, the likelihood of promotion for women becomes higher than for men. I wish to thank Dr. Dmitri Romanov, Chief Scientist of the ICBS, Mr. Dan Ben-Hur, ICBS, and Prof. Haya Stier from Tel-Aviv University, for their guidance and professional suggestions.

I. Introduction

3. The 2008 Social Survey addressed the issue of social mobility; the most significant part of the questionnaire concerned occupational mobility. Mobility was examined on two levels: mobility within the workplace, separately for employees and the self-employed; and mobility between workplaces – a comparison of workplaces in the last ten years. The data collected provide fertile ground for research in the various fields of social science. In this study, we focus on promotion in the workplace in the context of gender: promotion of women versus promotion of men. The demographic and socio-economic background variables provided by the survey allow for a broad, multi-dimensional analysis.

4. An analysis of workplace promotion and the comparison of the career opportunities of women and men can focus on two aspects: first, the employers, as in various studies (Albrecht, Bjorklund & Vorman, 2003; Cotter, Hermsen, Odavia & Vanneman, 2001). The second aspect is the employees and their characteristics (Bygren & Kumlin, 2005; Kramer & Lambert, 2001; Petersen & Meyersson, 1999). This paper examines workplace promotion of employees in Israel with a focus on the employee, and various employment characteristics such as work hours and wages. As noted above, the information is based on reports by interviewees in the 2008 Social Survey, which extensively addressed the issue of social mobility. The purpose of this study is to shed light on gender gaps in the context of workplace promotion and careers.

5. Research shows that women have a greater probability of being in “dead-end jobs” (Hansen, 1997; Kolberg, 1991; Olsen & Kalleberg, 2004). These jobs are characterized by a lack of career opportunities, in the sense of an increase in wages or promotion possibilities. Women find themselves in such jobs more often due to the fact that these types of jobs make it easier to combine work with family responsibilities, such as with flexible hours or part-time work. Such options are often particularly available in the public sector, not only in Israel. Thus, women may “refuse” promotion in order to preserve the balance between work and family. Another common explanation is that women are socialized to choose jobs that involve caretaking, more than men (England, 1992; Hakim, 2002), and that such jobs offer few or no promotion opportunities. Workplaces themselves may have gender-based guidelines when hiring (Kmec, 2005).

6. Bihagen and Ohls (2007) found that for the same jobs, women and men have a similar degree of wage mobility, but women are over-represented in jobs characterized by low wage mobility. In other words, the inequality is accounted for by women and men being positioned in jobs that offer differing promotion opportunities, rather than by gender discrimination. Bygren and Kumlin (2005) also found that men and women tend to engage in different occupations, and that organizations with an over-representation of one sex tend to hire more workers of the same sex, even when there is no such directive from management (“statistical discrimination”).

7. The 2005 Social Survey examined the degree of importance accorded by people (aged 20 or older) to various factors related to work. 47% of respondents rated the chance of promotion as a “very important” factor, with no notable difference between men and women; however, women had a greater preference than men for convenient work hours (48% of women respondents versus 37% of men rated this factor “very important”) and for colleagues who are pleasant to work with (73% of women versus 67% of men).

II. Background Data: Employment income and gender

A. Employment characteristics and gender

8. it is a well-known phenomenon that women accumulate fewer years of seniority and work fewer hours, on average, than men. These facts are supported by numerous economic studies. The employment data in the Social Survey for respondents aged 25 to 64, according to demographic, economic, and social parameters, illustrate this situation in several ways³:

Table 1. **Employment status by sex, age 25-64, 2008**

	Total	men	Women
Total	3 334 810 100.0	1 635 805 100.0	1 699 005 100.0
Employed	72.4	81.3	63.7
Unemployed	3.8	3.4	4.3
Not in labour force	23.8	15.3	32.0

9. 64% of women aged 25-64 are employed, versus 81% of men. About one-third (32%) of women are not part of the workforce, versus 15% of men (Table 1).

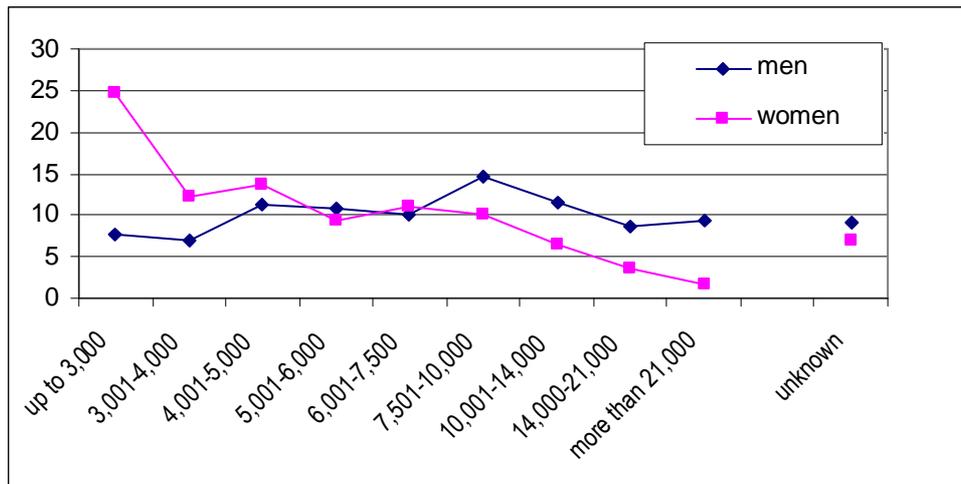
10. The majority of employed women aged 25-64 work full time – 73%. However, the percentage of men employed full-time is higher, at 93% (Table 2).

B. Income and gender

11. The data paint a clear picture in which women spend less time in occupational settings. The gaps in full-time versus part-time employment and in the quantity of work hours are connected with the gaps in income between men and women: wages of employed women are lower on average than those of employed men, and at the higher income levels the percentage of men is higher. This also stems from a different distribution of men and women among occupations: in occupations with a relatively high rate of women, satisfaction with income was found to be relatively low (elementary school teachers, cleaners, and nursing care providers), as compared to “masculine” occupations such as economists, accountants, and physicians. Findings regarding higher wages for men compared to women also emerge from the Income Survey (CBS, 2010), both with regard to wages per hour and, more strongly, with regard to monthly wages, which also reflects men’s longer work hours (Diagram 1).

³ The data are based on the population of the Social Survey. These findings cannot be expected to be identical to the findings of other surveys by the CBS due to differences in the definition of the population.

Diagram 1. Gross income from work, in NIS, by sex, 2008, percentages



III. Hypothesis and methods

12. Forms of workplace mobility that can be examined include upward, downward, and lateral mobility. Further, promotions can be studied according to several indicators: increase in wages, transfer to a higher-ranking position, transfer to a management position, or expansion of authority. This paper focus on promotion in workplace, regardless the promotion parameters such as wage, degree and intensity of the promotion.

13. These background data indicate that due to the obligation to balance family roles with the need to work, women are less present in the labor market and are over-represented in part-time positions. Research has identified “feminine” jobs characterized by fewer career opportunities. We therefore hypothesize that women are promoted at lower rates compared to men.

14. The general file of the 2008 Social Survey contains 7,327 records, representing approximately 4.6 million people aged 20 or older who belong to the permanent population of Israel, half of them (2.3 million) are employees. Our measurements will be based on the responses of the employees surveyed in the Social Survey to the question: “Has there been any change in your status at work (comparing the beginning of your employment to the current period)?” Possible answers were: Your status or position has been raised; Your status or position has been lowered; There has been no change in your status or position.

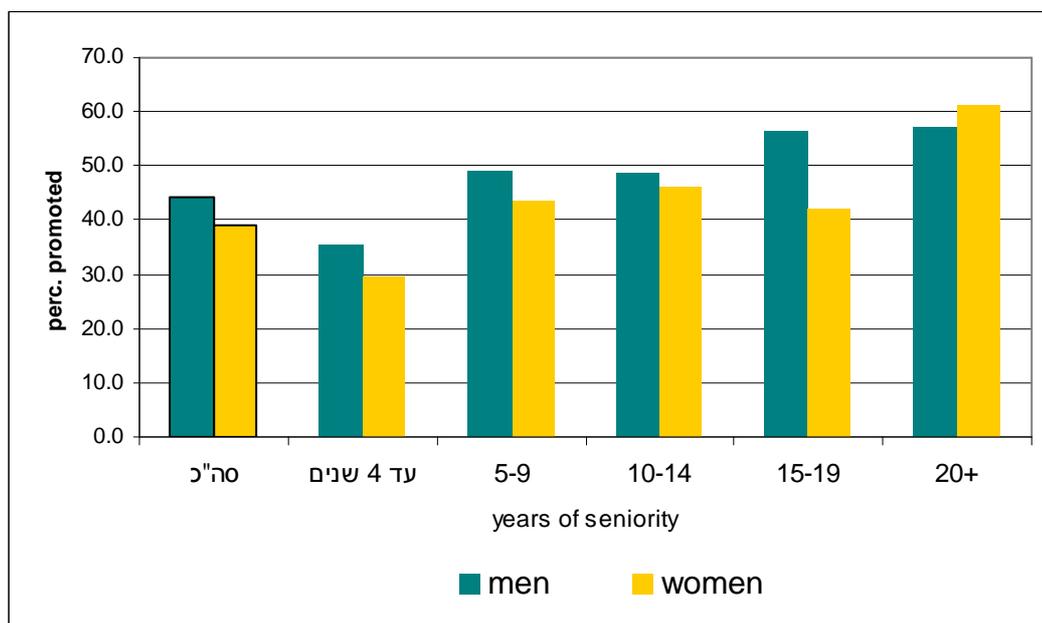
15. The findings are presented by descriptive statistics including the relevant demographic and socio-economic variables. In the next chapter a Multivariate Analysis shows the influence of these variables, explanations in detail in chapter V.

IV. Findings

A. Promotion, workplace seniority and sex

16. Men appear to be promoted at higher rates than women at most seniority levels, except at the seniority level of 20+ years in the workplace (Diagram 2). (10% of employees have 20+ years of seniority, approximately 216,000 employees, distributed almost equally between the sexes; this group reported a higher rate of promotion among women than among men.)

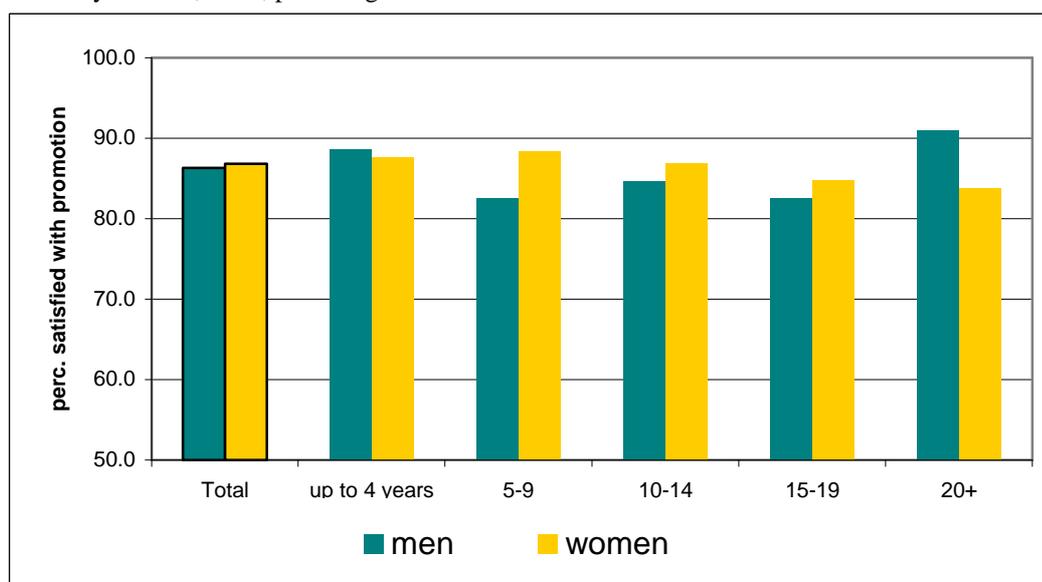
Diagram 2. Employees reporting promotion at work, by seniority and sex, 2008, percentages



B. Satisfaction with promotion, workplace seniority and sex

17. Although women are promoted less, in general women who have been promoted are more satisfied with their promotion than men. However, after twenty or more years of seniority, men – though promoted at a lower rate – are more satisfied with their promotion.

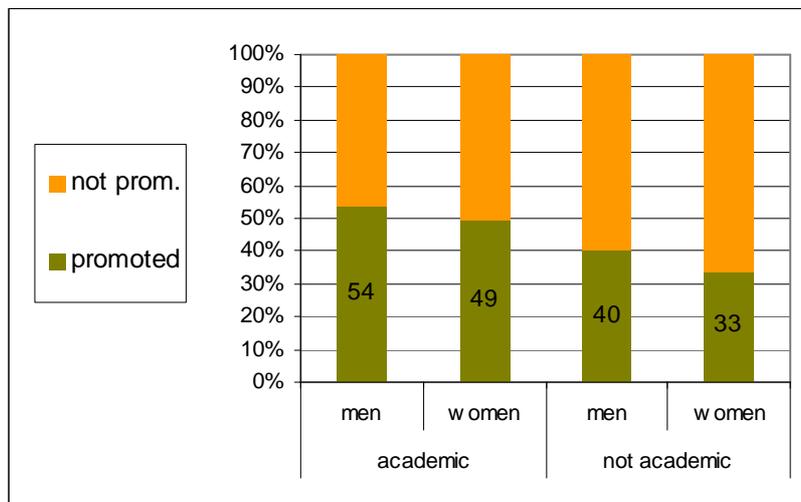
Diagram 3. Employees promoted, by satisfaction with workplace promotion and by workplace seniority and sex, 2008, percentages



C. Promotion, education, and sex

18. Over one-third of the employed women hold academic degrees, a slightly higher rate than the rate of degree holders among employed men. Looking at the rate of reports of promotion at work, it appears that both degree-holding women and non-degree-holding women are promoted less than men with the same level of education (Diagram 4). Over half of the degree-holding men (54%) were promoted at work, versus 40% of non-degree-holding men, while the percentage of women promoted was 5-7 percentage points lower than the rate for men in each education-level group. This result likely stems from different congruence between education and work among the sexes (e.g. engineers versus liberal arts graduates).

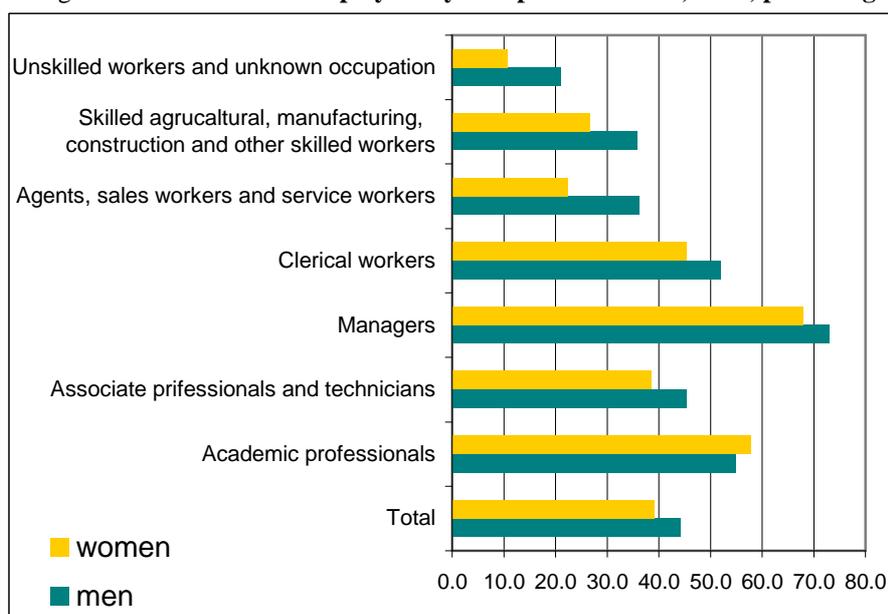
Diagram 4. **Promotion of employees by level of education and sex, 2008, percentages**



D. Promotion, occupation, and sex

19. A breakdown by occupations (single-digit differentiation level) also indicated a gap in promotion in favor of men, except in academic occupations, where women reported more promotion than men. This gap was particularly notable among sales and services workers: 22% of women reported promotion, versus 36% of men in these occupations (Diagram 5).

Diagram 5. Promotion of employees by occupation and sex, 2008, percentages



20. In general, it appears that promotion at work is less characteristic of employment in “feminine” occupations (such as caregivers, secretaries, preschool teachers, and elementary school teachers) than of occupations in which the majority of employees are male (such as computer programmers, computer technical engineers, engineers, and architects). However, the findings show that in “masculine” occupations, women were actually promoted more: of men employed in “masculine” occupations, 44% reported being promoted at work, versus 51% of women employed in “masculine” occupations (Table 3). A mirror image of this outcome is found in the “feminine” occupations, where the rate of men reporting promotion (43%) exceeds the rate of women promoted (36%) (table 3).

Table 3. Rate of promotion of employees by occupation⁴ and sex, 2008 Social Survey, percentages

	Employees in occupations with less than 50% women		Employees in occupations with more than 50% women	
	Men	Women	Men	Women
Thousands	956.9	226.3	209.6	755.4
Percent	100.0	100.0	100.0	100.0
Promoted at work	45.7	50.9	43.3	36.2
Not promoted at work	55.7	49.1	56.7	63.8

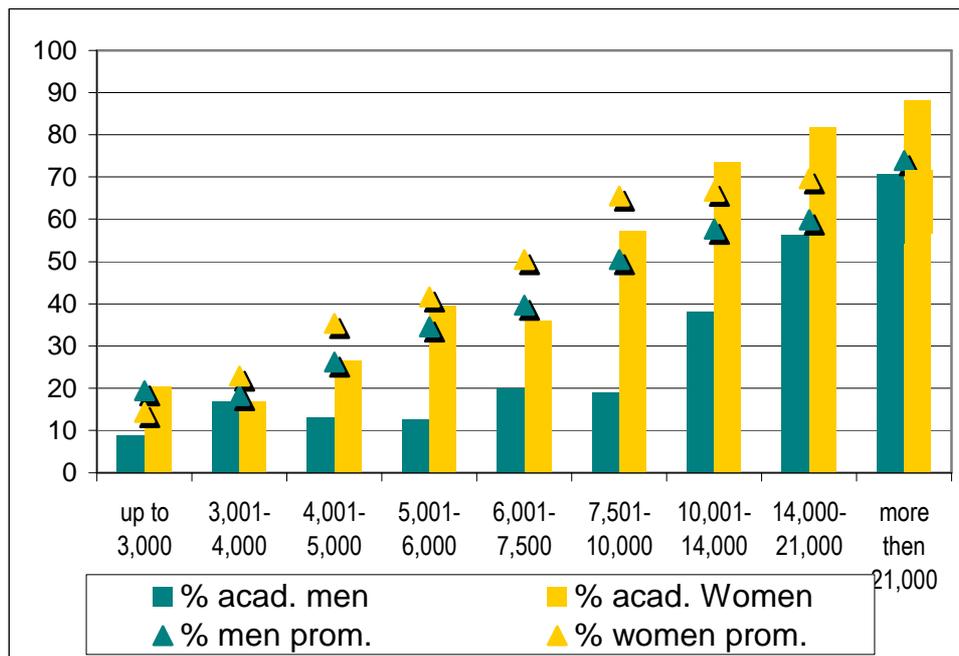
E. Promotion, income, education, and sex

21. An interesting finding emerges from a comparison of promotion at work of men and women at different income levels: At all income levels, women report more promotion in their status at work than men. A first possible explanation for this finding is that when

⁴ Based on occupations at a 2-digit differentiation level.

women earn the same wages as men it is the result of promotion, whereas when men earn the same wages as women, there are different reasons, such as an initial contract, etc. In another explanation, a breakdown by income shows that at each income level, the rate of women holding academic degrees out of the employed women exceeds the rate of men holding academic degrees out of the men earning the same level of income. We may draw the conclusion that women’s higher level of education at each income level enables them to achieve more promotion than men. Another possibility is that women attaining high-income positions are better qualified than men, and are therefore promoted at higher rates.

Diagram 6. **Employees by gross monthly income, sex, education, and promotion, 2008, percentages**



22. A similar picture is obtained from a comparison of male and female employees by number of work hours per week. In general, men can be said to work more hours per week than women, on average; this was also seen in full-time versus part-time employment (Table 2).

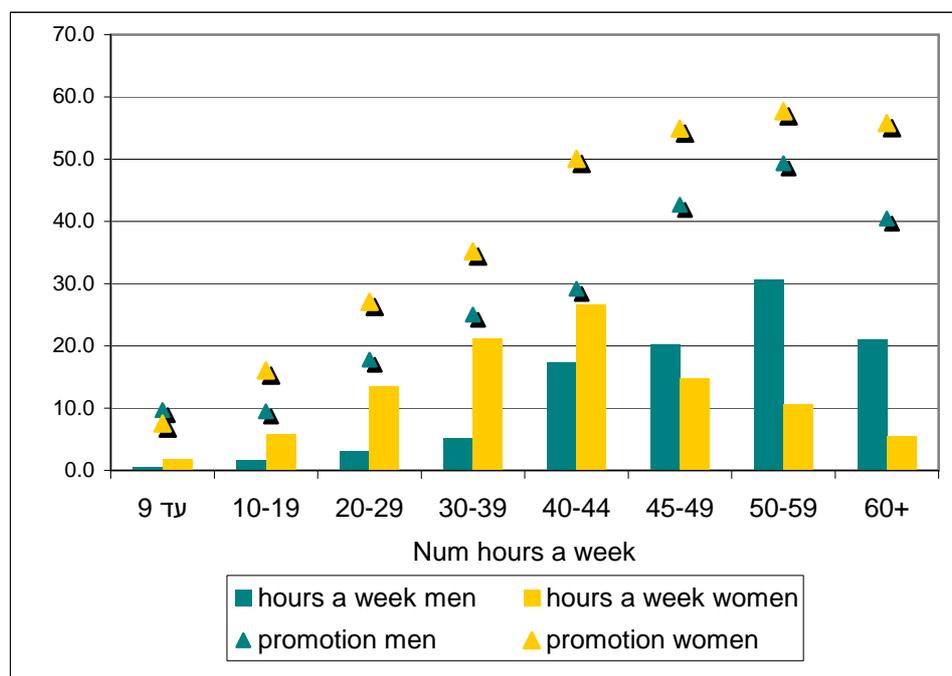
23. In examining the variables of number of work hours per week, number of children, and age of youngest child in the household, we have chosen to present data for employees employed at their workplace for more than five years, in order to filter out “noise” caused by the beginning of employment at a particular workplace. The categories of up to five years of seniority gave rise to an unclear trend in rates of promotion by number of work hours.

F. Promotion, number of work hours per week, and sex

24. Firstly, it is evident that men work more hours per week on average than women. Research by Keren Halevi (2006) on employees who work fifty weekly hours or more identified this group as mainly male.

25. Similar to the distribution of income, men do work more weekly hours; however, women who work the same number of hours report promotion in the workplace at a higher rate.

Diagram 7. Employees with over five years of seniority in the workplace by number of weekly work hours, workplace promotion, and sex, 2008, percentages



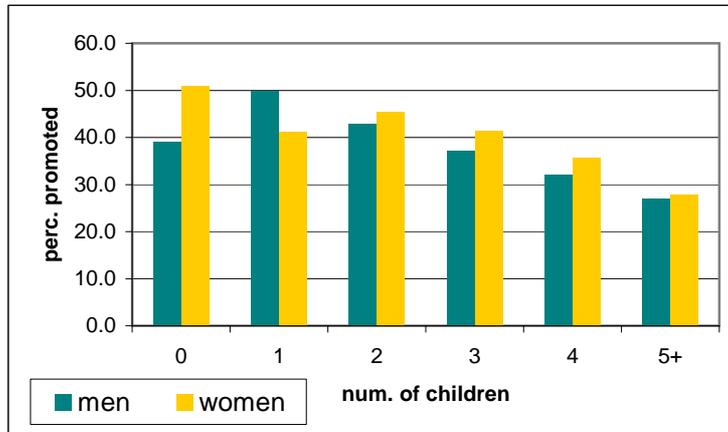
26. Here too, there appears to be stronger selection of women for “demanding” jobs requiring long work hours; this is reflected in higher rates of promotion than among men.

G. Workplace Promotion and Demographical Characteristics

1. Promotion, number of children, and sex

27. The rates of promotion reported by employees (with over five years of seniority in the workplace) also vary according to their number of children. Women without children report promotion at higher rates than men (50% versus 40%, respectively). But the birth of one child changes the pattern: promotion rates of women with one child fall by 20%, while promotion rates of men rise by 25%. When the number of children is two or more, women’s promotion rates are again higher than those of men; with five children or more, the rate of promotion falls to a similar level for both sexes (approximately 28%) (table 8).

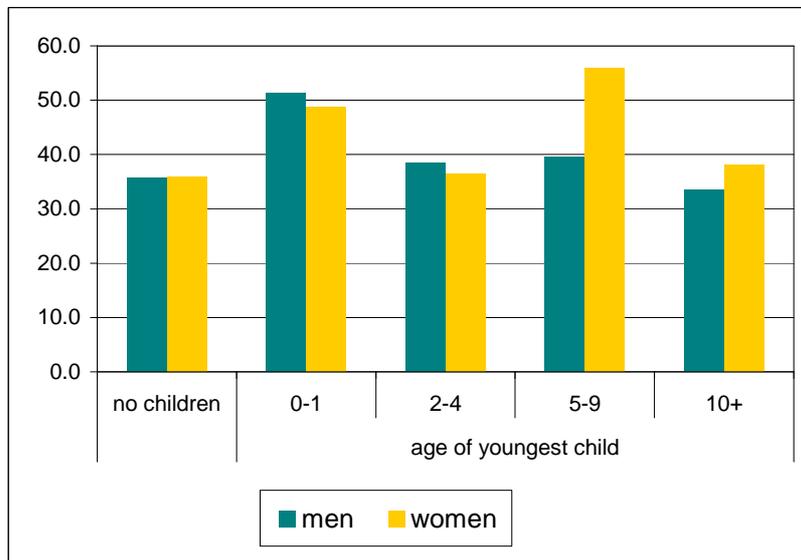
Diagram 8. **Employees with more than five years of seniority promoted in the workplace, by number of children and workplace promotion, 2008, percentages**



2. Promotion, age of youngest child, and sex

28. Another variable which may be even more significant is the age of the youngest child in the household. Among employees who have been at their workplace for more than five years, women and men without children are promoted in a similar rate. When the youngest child enters the mandatory schooling age group, women again report higher rates of promotion than men.

Diagram 9. **Employees with over five years of seniority by age of youngest child in the household and workplace promotion, 2008, percentages**



3. Promotion, expectations of promotion, age, and sex

29. Why do people leave a workplace? Reasons may concern the worker (lack of satisfaction, family considerations, a desire for progress) or the workplace (termination, end of contract). The Social Survey found that “desire for progress” as a reason for leaving a workplace was more typical of men than of women: 26% of men versus 17% of women reported this reason as the motivation for leaving a workplace of their own volition. Thus,

men are both promoted more and take more action towards promotion by changing workplaces. Likewise, men expect improvement in their status or position more than women. Among young employees in their twenties, the gap was particularly noticeable, both in the rate of promotion and the rate of expectations of promotion.

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H. Multivariate Analysis

1. Explanations

31. The general file of the 2008 Social Survey contains 7,327 records, representing approximately 4.6 million people aged 20 or older who belong to the permanent population of Israel. The logistical model used to examine the factors increasing the probability of promotion at work (based on self-reports) included the following variables:

32. The variable of promotion in position or status at work (based on self-reports of employed respondents in the survey) was defined as a binary dependent variable, where:

1 = Promotion in the workplace occurred

0 = No promotion occurred in the workplace (mainly including no change – 56.6% of employee reports, and some instances of reduced position or status – 61 cases, constituting 1.8% of the employees in the sample).

33. Variables defined as explanatory variables:

- 1) Sex: male = 0 or female = 1
- 2) Age
- 3) Age: age squared
- 4) Seniority: number of years at the workplace
- 5) Education: holder of academic degree or non-holder of academic degree
- 6) Number of work hours per week: a continuous variable
- 7) Marital status: married or unmarried
- 8) Number of children
- 9) Age of youngest child in the household; all members of the sample with no children in the household were excluded from the analysis in the model including this variable (54% of total cases remained in the regression)
- 10) Ethnicity: Jewish or Arab
- 11) Country of birth: Born in the former USSR or not born in the former USSR
- 12) Occupation: based on classifications in the 1994 catalogue of occupations (see symbol in parentheses):
 - a) Academic professionals (0) / others

- b) Associate professionals and technicians (1) / others
- c) Managers (2) / others
- d) Clerical workers (3) / others
- e) Agents, sales workers, and service workers (4) / others
- f) Skilled workers in agriculture, industry, and construction (5-8) / others.

2. Findings

34. Model 1 in the regression is the basic model, to which various factors are added which may explain the probability of promotion of employees in the workplace. Model 1 shows that when age, education level, and workplace seniority are held constant, the sex variable has no significant effect on promotion. Holding an academic degree doubles the probability of promotion.

35. The description of the findings indicated that men work more weekly hours on average, but women who work the same number of hours as men are promoted at a higher rate than men. In fact, when the variable number of work hours per week is added to the model (model 2), the significance of the sex variable rises: women have a 25% greater probability of promotion than men.

36. Model 3 describes the level of significance and the effect of all of the relevant demographical, socio-economic, and occupational variables. The age of the youngest child in the household does not have a significant effect, and this variable was therefore not presented in the model (recall that this variable restricts the population to those with children only).

37. With these variables held constant, the sex variable is insignificant; in other words, sex does not affect the probability of promotion. However, as we have seen, the variables of sex and number of work hours are correlated, as women work less than men; thus, an interaction between the two must be taken into consideration, as shown in model 4. Given this interaction, we can discern different slopes, for men and women, of the probability of promotion according to the number of work hours: when the interaction is added, each additional hour of work contributes to women's probability of promotion more than to the probability of promotion for men (by a factor of 1.02, on average).

38. The variable of the number of children slightly reduces the probability of promotion.

39. Most occupations had a significant effect: academic professionals had a three times greater probability of promotion than others, and clerical workers had almost a three times greater probability of promotion than other workers. Demographical variables with no significant effect were: ethnic group (Jewish/Arab), country of birth (former USSR/other), and marital status (married/unmarried).

40. In conclusion, the findings indicate that women progress more than men to the extent that they work a greater number of hours per week.

Table 4. The effect of sex and other background variables on workplace promotion – logistical regression, odds ratio

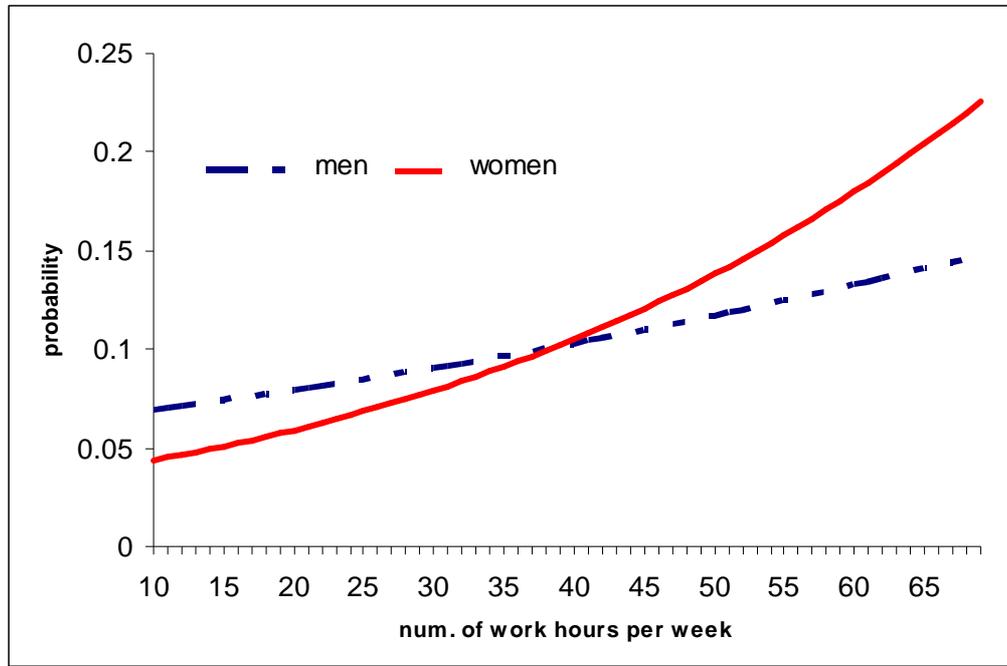
	Model 1	Model 2	Model 3	Model 4
Sex	0.970	**1.245	1.089	**0.523
Age	**1.057	1.030	1.040	*1.042
Age squared	**0.999	**0.999	**0.999	**0.999
Number of years of seniority	**1.083	**1.083	**1.079	**1.078
Academic degree	**1.991	**1.970	**1.371	**1.362
Number of work hours per week		**1.024	**1.022	**1.014
Sex * number of work hours per week				**1.017
Demographical background variables				
Married			1.143	1.163
Number of children			**0.922	**0.924
Arab			0.831	0.841
Born in former USSR			1.057	1.047
Occupation				
Academic professionals			**3.106	**3.072
Associate professionals and technicians			**2.034	**3.612
Managers			**3.616	**2.032
Clerical workers			**3.084	**3.044
Agents, sales workers, and service workers			1.223	1.235
Skilled workers			**1.492	**1.495
-2LogLikelihood	4951.138	4679.459	4548.708	4540.528
Chi-Square	376.5446	441.7382	572.4897	580.6692
N	4,491	4,268	4,268	4,268

Source: Central Bureau of Statistics and calculations by the author.

Notes to the table: ***, **, * - Significant at a significance level of 1%, 5%, and 10% respectively. Standard error shown in parentheses.

41. A graphical description of the average probability of promotion of men and women (P) by work hours, based on the regression data (**estimated intercept parameter**, sex, work hours per week, and the interaction sex*work hours per week) shows a steeper slope for women than for men. Beyond forty work hours per week, women report promotion at higher rates than men.

Diagram 10. **Estimated probability of promotion at work according to the model**



V. Conclusions and Discussion

42. Our hypothesis was that women would be promoted at lower rates than men. Overall, the percentage of women reporting promotion was lower than the percentage of men reporting promotion at their workplace. The literature indicates that men are more motivated by promotion at work and that they tend to hold jobs with career opportunities, while women are over-represented in jobs characterized by low wage mobility. These jobs are especially present in the public sector, not only in Israel. We know that in the “feminine occupations” wages are lower and openings for promotion are more restricted. Furthermore, women report more “damage” in the occupational sphere as a result of childbirth. And indeed, the findings of this study indicate lower participation of women in the labor market in terms of number of work hours and full-time versus part-time work.

43. As we saw, the variable of the *number of children* slightly reduces the probability of promotion. This finding is supported by the outcome of another question in the survey, which asked whether and how the birth of the children had affected respondents’ employment. 40% of women who had ever given birth reported that having children affected their employment; 60% of these women said that they had stopped working. Men were affected by this factor at a lower rate of only about 5%, and many of them increased the volume of their positions at work (60%). This outcome is in line with the traditional model of role divisions within the family; research shows that the cessation of work subsequent to childbirth accounts for a major part of the wage disparities between men and women (Buding & England, 2001; Polacheck, 2003).

44. However, the answer to our question is not clear-cut. Other studies demonstrate that when women and men hold the same positions, both have a similar level of wage mobility. The present study shows that at similar income levels, women are promoted more than men, probably due to a relatively high rate of academic degree holders among these women. A similar outcome is obtained when the number of work hours is held constant: in each category of work hours per week, women are promoted more. In addition, when the youngest child is of mandatory schooling age or older, women are promoted more. Thus, our hypothesis cannot be accepted.

45. The multivariate analysis also demonstrates the complex outcome: when work hours are not held constant, the sex of the employee has no significant effect on the probability of promotion. Only when work hours are taken into consideration does the correlation become significant – but it is women who have a higher probability of promotion. Thus, the sex of the employee has an effect only when the other characteristics of the work, where the distribution of men and women is not random, are included in the analysis.

46. This deeper understanding of the interrelationships among the explanatory factors (e.g. work hours and sex), and between these factors and the dependent variable, allows us to resolve the conundrum known in the literature as the Simpson paradox, in which the question whether women are promoted in the workplace less than men appears to have two different answers. As we have seen, the solution to the paradox lies in the relatively low representation of women in groups characterized by higher rates of promotion (higher wage earners, “profitable” occupations, workers who invest a large number of work hours, and more).

47. There are several possible explanations for the fact that when various demographical and occupational variables are held constant, women report more promotion: Women reach these positions as a result of promotion, whereas men reach them by other means, such as due to initial terms of employment or contract parameters. In addition, women who invest the work hours and accumulate the seniority allowing progress at work may attain higher achievements, and therefore earn more promotion than men. In this context, it is important to recall that the extent of the promotion was not measured in the Social Survey. Another explanation is a different interpretation by men and women of “promotion in status or position,” as the survey was worded; however, this is a matter for a study on differing understanding of questions in the survey and is beyond the scope of this paper.

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