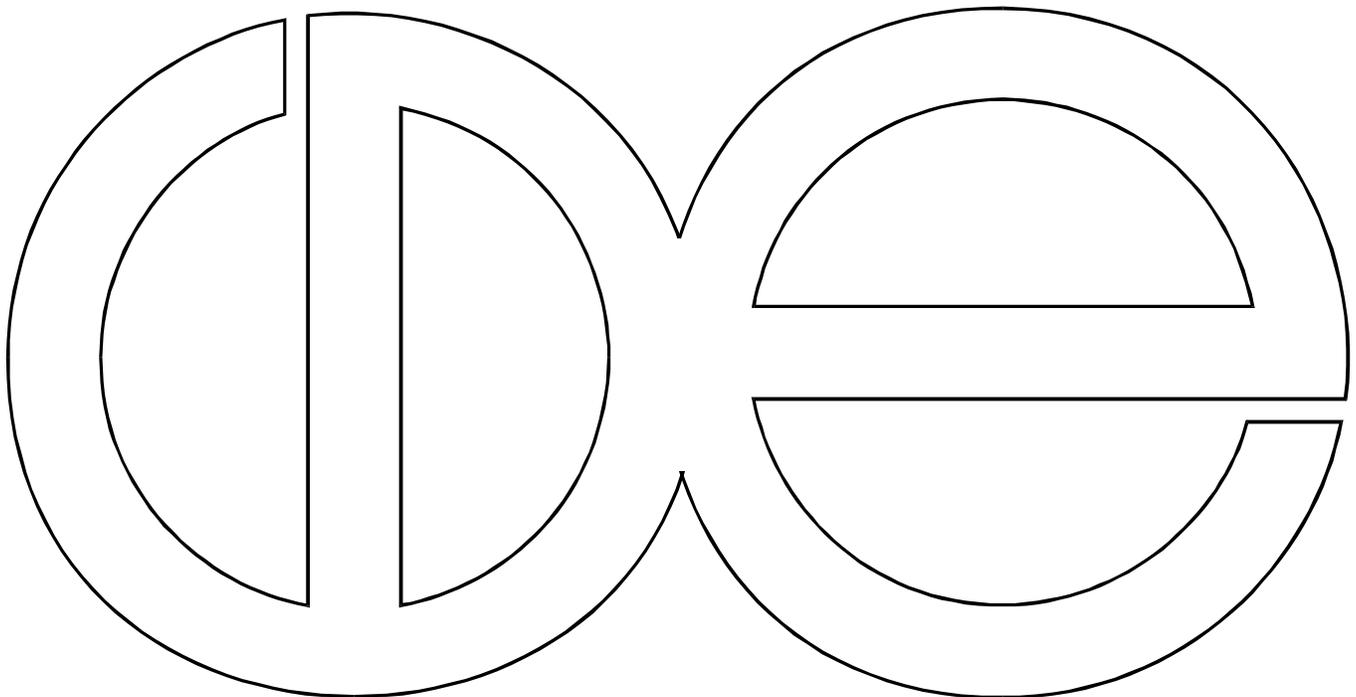


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**Who Works in Tijuana's Maquiladoras?:
A Labor Market Analysis**

M. Elizabeth Fussell

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I. Introduction to the research question

Free trade zones do not imply free labor markets. The organization of free trade zones makes it abundantly clear that capital can move freely to these zones while labor is grounded. The main attraction of production in free trade zones to foreign capital is the government's regulation of wages such that wages are low and wage competition is minimized. A further attraction, which cannot be attributed to government regulation, but rather to social institutions, is the utilization of female labor in the most labor intensive occupations in free trade zones, exploiting the norms which make acceptable lower female wages. This norm also applies to the other economic sectors which may compete for women's labor, lowering women's wages in the entire local labor market. These two divisions of labor, one international and the other gendered, are not under debate in this research — both are amply documented elsewhere (Nash and Fernández-Kelly, 1983). The question under examination is, are women employed in export-oriented manufacturing jobs better off than women employed elsewhere in the local labor market?

Linda Lim (1983; 1990), drawing mainly on evidence from Asia, argues that women working for multinational corporations in free trade zones are better off in terms of wages and working conditions than those in other occupations in the local labor market. Patricia Fernández-Kelly (1983), studying only women workers in multinational factories in Mexico's free trade zone (maquiladoras), uses qualitative evidence to show that the patriarchal organization of the household and society diminishes the liberatory potential of work in maquiladoras, and by extension, in other types of work for women. These two positions do not contradict each other due to the comparative nature of the first and the substantive nature of the second, rather they point out the disjuncture between the two dominant schools of thought addressing women's work

in countries following export-led development strategies. The former emphasizes the economic role of multinationals in the local labor market and the latter emphasizes their social impact vis a vis women's new role as industrial workers. One underlying reason for these different views of the value of multinational jobs for women is the greater success of the export-led development strategies in the Newly Industrialized Countries of Asia versus their limited success in the debt-plagued countries of Latin America and the Caribbean where increased levels of female employment are associated with meeting household needs rather than achieving greater female independence (Benería, 1994; Gerreffi, 1992). However, little research has been done in Latin American and Caribbean contexts to test Lim's assertion that multinational manufacturing employment offers better wages and conditions than other types of employment.

In this research I examine the social and economic determinants of female occupations in the labor market of Tijuana, Mexico, a city in the northern border's free trade zone. I compare maquiladora work with self-employment and employment in services and commerce in order to understand the relative rank of export-oriented assembly (maquiladora) work in the low-skill occupational hierarchy. I use the Labor Trajectories Survey (1993) which includes workers in selected low-skill, low-wage occupations (maquiladora employment, service or commerce employment, and self-employment) to identify determinants of these distinct types of employment. With this data I can answer the question, what are the sociodemographic differences between women maquiladora workers, employees in commerce and services, and the self-employed? Furthermore, I examine indirect evidence of some of the labor market mechanisms which determine the different distributions of women workers between occupations.

The first section of this paper presents the research question. The second section of this

paper describes Tijuana's labor market with special attention to the three types of occupations analyzed in the quantitative analysis. This section identifies regulatory institutions which structure the conditions of each type of employment, providing the necessary background for understanding why women's individual and household characteristics may be more or less compatible with specific occupations. The third section describes the data and methods used in the quantitative analysis, while the fourth section lays out the hypotheses to be tested in the quantitative model. Since I am particularly interested in understanding the social regulation of the labor market, this section emphasizes which variables are associated with labor market discrimination. The fifth section presents the results of the multinomial logit models, bringing the discussion of the regulatory institutions of the labor market to bear on the interpretation.

Based on the quantitative analyses, I find that human capital together with age are the strongest predictors of occupation. However, the levels of human capital associated with occupational groups are only weakly associated with the average wage. Employment in service and commerce sectors receives equal remuneration as self-employment on average (although with a smaller standard deviation) and is more highly remunerated than maquiladora work. However, service and commerce employment demands the highest levels of human capital and a certain amount of social capital as well to find entry into these positions. Maquiladora work demands moderate levels of human capital but is least well remunerated on average than the other occupations. It appears that women with lower levels of human capital trade off the potentially higher income from self-employment for the stability of formal employment in the maquiladoras. This leaves the women with the lowest levels of human capital in self-employment. These traits reveal the ranking of these occupations in the local labor market, such that those women with the

highest levels of human capital occupy the more favorably remunerated and stable jobs in service and commerce, those with less human capital fill the maquiladora jobs, and finally, those with the least human capital are self-employed. The stratification of the labor market is also evident from the importance of previous job experience in one's current occupation as the most significant predictor of one's current occupation.

However, human capital isn't the only basis for labor market stratification. Since we are comparing only employed women, we might expect that the effects of marital status and the presence of children would have a minimal effect on women's occupation, particularly on the difference in likelihood of commerce and service employment versus maquiladora work, both of which require a physical separation of domestic and market work. However, non-married women and women with fewer than two children are more likely to work in service and commerce employment than in maquiladora employment. Arguably, this reflects the greater discriminatory power of service and commerce employers, since they can afford to employ workers with more of the "ideal" traits — single, childless, and educated -- for female employees, or alternatively it may reflect their tendency to hire their own unwed daughters. Occupations are stratified by age as well, with the least stable, self-employed occupations being more common for older women and formal employment being more common for younger women. This stratification could be associated with a cohort effect since higher levels of education are far more prevalent in younger cohorts than older ones due to the very recent increases in female educational attainment. Nevertheless, age has an effect independent of other human capital and demographic characteristics, suggesting that employers also discriminate on the basis of age. The cost of discrimination for employers is reflected in the relatively higher wages of service and commerce

employees.

These results suggest that maquiladoras, perhaps because of the strong demand for workers and high turnover rates, discriminate less than other employers, but nevertheless select workers on the basis of individual characteristics and a minimum level of human capital. However, maquiladora jobs are not the “best” jobs in the labor market in terms of wages and employment conditions. Although jobs in commerce and service employment are heterogeneous, on average these employers offer higher wages. They may also offer greater autonomy on the job and more flexible work schedules — better conditions than the tedious assembly line work in the maquiladoras. These employers are able to attract the women with higher levels of human capital and with fewer domestic demands by offering higher wages and better work conditions than in the maquiladoras. Lim’s suggestion that international manufacturing employment is better than other labor market options is not supported by the evidence from Tijuana’s labor market.

II. Tijuana’s labor market

Between 1960 and 1990 the population of Tijuana has quadrupled to 750,000 as migrants have been attracted to jobs in both Tijuana and the United States (Zenteno, 1995). This economic expansion was not simply a result of the growth of maquiladoras, but of US tourism and commerce as well. Since the beginning of the century Tijuana has provided leisure services to visitors from Southern California. It boomed during prohibition when Americans come to Tijuana to drink, gamble, and buy sexual services that were all illegal on the US side of the border. Currently, the night clubs and beach resorts cater to US college students, Navy sailors, and underage drinkers. Furthermore, Tijuana’s status as a duty free zone allows Americans to buy

medicines, imported clothing, jewelry and perfumes, alcohol, and other goods more cheaply, thus supporting the local commerce sector with dollars. The industrialization of the border since the mid-60s was another economic boon as US, Japanese, and other international corporations located there to gain easy geographical access to US markets, take advantage of the favorable tariff laws, and employ one of the least costly labor forces in the world. The vigor of Tijuana's economy is evident by the rapid pace of growth of the manufacturing sector and the banners outside most manufacturing plants recruiting young women workers. These three economic sectors -- manufacturing, commerce, and services -- employ the majority of the population in either formal employment or self-employment.

The abundance of work in Tijuana would appear to provide women with ample opportunity for employment of their choosing. However, a woman's occupation is determined not only by her own preference but by the labor queue -- employers establish the criteria for employment and hire only the workers who meet this criteria (Reskin and Roos, 1990). This results in occupational segregation by gender, particularly in domestic services, educational services, administration and clerical employment and personal services — traditionally female occupations — as well as maquiladora employment (Table 1). Furthermore, maquiladora and other types of employers have preferred to hire young, single women as short-term employees, expecting them to leave when they marry and have children (Sklair, 1993; Tiano, 1994). But as demand in the manufacturing sector has grown rapidly the supply of these “ideal” employees has been exhausted and employers have increasingly hired women further down the queue — married women, older women, and women with children (Tiano, 1994). This has opened up the possibility of work in the maquiladoras for many women, while still maintaining the gender segregation

which allows employers to pay lower “female” wages.

This raises the question, since the unemployment rate in Tijuana overall is quite low and the turnover rate in the maquiladoras is high, why don't maquiladora employers pay the highest wages to employ the “best” workers and thereby maintain a more stable work force? One explanation of the higher wages of employees in commerce and services is that their employers are competing for “ideal” workers (Table 2). This sector employs the largest number of women as well (51.7% of employed women in 1993). The maquiladoras, in contrast, pay the lowest average wages for unskilled female labor and employ a smaller, but significant, proportion of the female labor force (28.9%). I argue that the social and economic institutions which shape the labor force in Tijuana and the fact of the social and economic inequality between the US and Mexico stratify this labor market in order to allow for non-competitive female market wages.

Neoclassical labor market analyses typically ignore the social and political institutions which shape labor market outcomes. However, many economists and sociologists have shown that these institutions - including international trade policy, government regulatory bodies, unions, owners associations, and the gendered construction of both domestic work and paid work - influence labor market outcomes. Tijuana's unique institution — the international border — restricts labor to stay in Mexico (for the most part) and allows capital to flow into Mexico taking advantage of the government regulated wage structure. The Mexican government must compete with free trade zones in other countries with lower wages making the minimum wage scale for unskilled labor in the maquiladoras very low in order to attract and maintain the business of foreign manufacturers (Carillo and Hernández, 1985; La Botz, 1992). On the other hand, the border region attracts businesses interested in easy access to US markets and those with

complementary high-skill manufacturing plants on the US side of the border. However, although manufacturers are famous for utilizing women's inexpensive labor, the international division of labor doesn't explain the gendered nature of the labor market — that is better explained by looking within the local labor market.

Local labor market institutions shape industrial labor market outcomes in more direct but less well-known ways. The powerful maquiladoras owners association reduces wage competition between firms by trading information on labor contracts and other industry related issues. Labor unions are complicit in this informal regulation of the labor market. Mexican labor unions are closely associated with national and local government and in Tijuana, as in other cities in Mexico, they do little to represent workers interests but rather they facilitate business interests (Sklair, 1993; La Botz, 1992). In other words, the government, businesses and labor unions are all interested in attracting and maintaining industry in Mexico to provide employment, especially in a weakened economy. Therefore, these powerful institutions maintain low industrial wage levels. Commerce and services - including large, small, and informal businesses - are less closely regulated although they too are subject to government oversight through trade unions, municipal government licensing, and minimum wages laws (Fussell, 1997). Notably, even the informal market vendors specializing in second hand goods are required to obtain municipal permits and heavily encouraged to join a government affiliated union. These institutions are not influential in setting wage levels, but they do control employment levels by controlling the licensing of firms or vendors. Although there is insufficient evidence, employment in this sector is likely to be most forcefully regulated by local social and family networks who select employees through these ties rather than through the formal labor market. Social networks in Mexico are a principal means for

exchanging goods, resources, and information and they are reinforced through formal pseudo-familial relationships known as the *compadrazgo* system (Nutini, 1984). Women have typically been employed within family businesses where their sexual reputations can remain guarded and their wages can stay under family control. Some *maquiladoras* have taken advantage of these networks by recruiting workers from the same families, an informal way of maintaining control over labor (Carrillo and Hernández, 1985). However, the majority of residents in Tijuana and other border cities are recent migrants with weak community ties who frequently find work by simply applying for work without prior contact. Evidence of social networks operating as labor market gatekeepers is notoriously difficult to collect and demonstrate with representative survey data but it is supported through a growing body of literature in economic sociology.

However, the most powerful institution of all is the cultural dictate that women's work is of a particular kind - unskilled - and that it deserves minimal remuneration because it is only supplemental to family needs (García and Oliveira, 1994). The gendered division of labor in the home reinforces this idea that women's main responsibility is to their family in the form of unpaid labor — as a result their work has no apparent market value. Furthermore, women have only recently entered into the labor market in Mexico, and for many they have entered into a depressed labor market in order to raise total household income (García and Oliveira, 1994). This both compels women to accept whatever wage is offered and keeps them from organizing because of their belief that their work is merely temporary. Employers offer similar justifications of the low wages they offer to women — they argue that women's work is temporary and high wages are unnecessary since she is supported by her husband's or father's wages (Carrillo and Hernández, 1985; Fernández-Kelly, 1983; Tiano, 1994). Furthermore, in the past women only work before

they marry or if they or their families are economically desperate. Therefore, the “typical” and preferred female worker is a young single woman. But the shallowness of these gendered arguments is made obvious by the reorganization of the rationalizations when market conditions change — Tiano (1994) found that as the supply of single, young women workers was exhausted in Mexicali, employers began arguing that married women with children were more responsible workers because of their economic need, whereas previously they had argued that married women were less responsible because of their primary responsibility to their families. These stereotypes make women’s age, marital and family status salient to their occupations outcomes.

In order to address how export-led development contributes to the local labor market relative to other low-skill female occupations, I will first address the characteristics of these three types of employment. The specific occupations grouped within maquiladora manufacturing, service and commerce employment, and self-employment are shown in Table 2. The characterizations of these occupations are based on field research in Tijuana, primarily interviews with women workers in these occupations.¹ The organization of work plays a significant role in determining who fills the jobs and will allow for a better understanding of the multivariate analysis of the individual level determinants of occupation. I compare service and commerce employment and self-employment with maquiladora work using data from the Labor Trajectories Survey, carried out by researchers at El Colegio de la Frontera Norte in 1993. This survey covers worker’s labor, family, education, and migration histories based on a random sample of

¹ These interviews were conducted between January and August of 1996 as part of my doctoral dissertation research. A more in-depth analysis of the qualitative interviews is available in an unpublished manuscript entitled, “Accounting for the Difference: Women’s Work Stories and Studies of Women’s Labor Force Participation on the U.S.-Mexico Border.” (1997).

households in several working class neighborhoods in Tijuana. With this data I compare individual and household characteristics, human capital, and social capital as predictors of occupation. These characteristics reveal who is selected into these types of employment, uncovering the social bases for Tijuana's occupational hierarchy.

A. Maquiladora employment

Table 2 illustrates the types of maquiladora jobs occupied by women in this survey. Most involve working on the production line, but some are supervisory jobs to which line workers are promoted. Work in the maquiladoras is difficult because of the rapid pace of work necessary to meet production quotas, the often poor working conditions, and the rigidity of workplace rules. These work conditions demand that workers are quick and dextrous throughout the 48 hours worked each week. Maquiladora work often entails health risks which vary by industry² -- for example, repetitive stress injuries, exposure to toxic chemicals or dust, and hand and eye injuries. Furthermore, women with family demands cannot always comply with the work schedule and managers are reluctant to allow women time off. The inflexibility of employment with regard to production quotas, work conditions, vacation, and sick leave, compels many women to leave their jobs periodically to recuperate their own health, care for family members, or to return to their home state for visits, thus losing their seniority and accrued wage increases and benefits. High employment turnover rates plague the factories, but it also keeps wages low in this low-skill industry.

Maquiladoras are known for hiring single, young women with at least a primary or

² The textile, electronics, plastics, and automotive industry are all well represented among the maquiladoras.

secondary school education. However, as the industry has grown and these workers are relatively scarce, maquiladora employers have changed their definition of the “ideal” worker - some now assert that married women with children are more reliable because of the necessity of their income to the household whereas single women come and go when they tire of the work (Tiano, 1994). As this sector grows, labor demand increases, diminishing discrimination by maquiladora employers on the basis of age, marital status, and to some extent, education. These factors, the coordination of the maquiladora owners association with the unions, the high turnover rate, and the diminished selectivity into employment make maquiladora wages, on average, the lowest among the occupations examined here (see Table 2).

B. Commerce and services: employment versus self-employment

The intensity of Tijuana’s economic exchanges with San Diego accounts for much of the vitality of the commerce and service sectors on both sides of the border. Access to dollars stabilizes the Tijuana economy by providing a reliable cash flow, although it simultaneously raises the cost of living relative to the interior of Mexico by setting prices in dollar equivalents. Due to this “dollarization” of the economy, employees with wages fixed in pesos are more vulnerable to fluctuations in the value of the peso than are those whose income is negotiable and/or based in dollars (Anderson and de la Rosa, 1991). The dependency of the Tijuana economy is made acutely evident when fluctuations in the exchange rate enhances consumption on the favored side of the border. For example, in December 1994 - January 1995 when the peso was devalued by half, Mexican consumption of goods in San Diego fell off, while tourism and cross-border commerce in Tijuana rose.

The strength of the commerce and service sectors is reflected in the higher monthly wages

received by both employees and the self-employed relative to maquiladora employees and the large number of women employed in this sector (Table 2). The availability of dollars in these sectors may partially explain these higher wages. However, it should also be kept in mind that there is a great deal of seasonal variation in income and, for the self-employed and those receiving tips, commissions or other types of non-wage income, estimates of cash income are less reliable than for those receiving a fixed wage. This greater variation is evident for the large standard deviation of income for those who are self-employed in commerce and services.

i. Employment

Commerce and service employment span a broad range of occupations, but have in common a wage relationship to the employer. This distinguishes employees from the self-employed although there is overlap in occupations (Table 2). Formal employment generally means receiving a wage and perhaps some benefits, having a stable income, and, depending on the size of the enterprise, it may include health benefits. However, employment conditions depend upon the size and formal organization of the enterprise.

Larger retail and service establishments offer fixed wages and benefits, as well as more regular schedules and work conditions. Like maquiladora work, these are often “female” occupations which require little training, typically pay low-wages, and provide few opportunities for advancement. Social norms held by both employers and employees tend to favor employing young, single women and dismissing them when they marry and have children, although these norms are flexible depending on the balance of labor supply and demand.

Family businesses are often less formally organized than larger businesses. A family

business may relax the wage relationship, relying on exploitation of family relationships,³ but may also provide certain benefits to the “employee” in terms of increased flexibility in schedules and work demands. Family businesses also imply a limited labor search, making these types of jobs less accessible to those who are non-family members or those who are not within a relatively small social network. This underlines the importance of social capital as a resource in occupational choice. However, it is difficult to generalize about small family businesses because they are so varied and perhaps the least regulated by government and labor union oversight.

ii. Self-employment

Self-employment in home-based activities is common for women in developing countries, but it is frequently under-reported since it is an activity which is often taken for granted in the domestic economy. I found in my field work that many women engage in activities which combine domestic and market work, such as buying and selling goods in second-hand markets, selling a portion of products made primarily for domestic consumption, and trading child-care for other favors. More rarely, women leave their neighborhood networks to establish formal businesses in municipally regulated street markets or tourist areas. Therefore, there is great variation in self-employment and the income received through this type of work. It is likely that the numbers found in this survey are only from those women most committed to their work and whose work provides a significant income.

Women’s self-employment may be either an affirmative choice or a last resort depending on her economic need and social and human resources. On one hand, women resort to self-

³ In this survey, women who worked in a family business with their self-employed husband were considered to be employees, not self-employed.

employment when they cannot find other jobs due to their advanced age, lack of education or experience, or prejudice against their indigenous background. On the other hand, women may take up side-businesses while they are occupied with family responsibilities and expand those businesses as need demands or as their children age and leave home. In either case, self-employment is subject to seasonal fluctuations and economic crisis as well as to a woman's own productivity level. These businesses may be based on neighborhood networks, such as selling groceries, candy, school supplies, cosmetics or other small goods, or they may work in more lucrative business areas selling home-made foods on the street, second-hand goods, or trinkets and handicrafts for tourists. This second type of vending is more detectable by municipal authorities and generally requires membership in a union which facilitates interactions between vendors and the municipalities and a permit for use of public space. These unions, like most, are sponsored by various branches of the ruling party, the Partido Revolucionario Institucional, and establish political patronage relations between vendors and the local party. In this way unions oversee and regulate street vending, supporting only the more lucrative and steady businesses. This screening process discourages many women from participating or gaining access to the most popular street markets or vending areas because of their lower level of commitment or bias in the allocation of favors on the part of the union.

III. Data and Methods

Survey-based research on women's labor force participation typically uses individual characteristics to predict women's work or non-work. However, in this work I am concerned with women's occupational choice, a decision less frequently examined. Ideally, these two topics -

- the decision to work and the choice of occupation -- should be examined within the same framework, since they are often jointly determined. Due to data constraints I cannot examine both. This means the analysis is limited to women already in the labor force. A second issue in women's work in developing economies is the blending of domestic work, self-employment, and formal employment, such that employment becomes very difficult to measure. In the case of industrializing regions, such as northern Mexico, there are more opportunities for formal employment in the local labor market, expanding women's occupational choices and supplying them with a greater number of jobs. Nevertheless, many women seek work in the informal sector which is likely to be undercounted in this survey since informal women workers may not consider themselves to be workers. The benefit of this data set is that it provides more detailed labor, family, and migration histories than are available in employment surveys allowing us to examine occupational determinants more closely.

I use the Labor Trajectories Survey (1993) which includes workers in selected low-skill, low-wage occupations (maquiladora employment, service or commerce employment, and self-employment) to identify determinants of these distinct types of employment. The Labor Trajectories Survey was conducted by researchers at El Colegio de la Frontera Norte in 1993 in Tijuana. They surveyed 715 men and women workers, 12 years of age and above, in several working class neighborhoods of Tijuana. I selected only the 241 women workers for whom sufficient data was collected: 105 maquiladora workers, 94 service or commerce employees, and 42 self-employed workers. This does not reflect the sectoral distribution of employment in Tijuana. In the National Urban Employment Survey for the second quarter of 1993, 28.9% of all

working women were employed in manufacturing,⁴ 51.7% were employed in commerce and services, 14.0% were self-employed and 5.4% were employed in other sectors (Table 2). At this time, 31.9% of the female population were employed. By choosing to conduct the survey in working class neighborhoods in Tijuana, the Labor Trajectories Survey clearly over sampled maquiladora workers and women who were more likely to be in the labor force. Keeping this in mind, we can still proceed with the analysis of the determinants of occupation given that a woman is in the labor force, which does not require a representative sample of the total population, although the representation of women by occupation and sector in the labor market is presented in Table 1.

Selection into an occupation depends on both the employer's requirements and the worker's characteristics that cause her to seek employment. In low-skill, low-wage occupations, it is generally the family or household's need for additional income that causes a woman to seek work. A woman's marital status, age, fertility, and household composition may condition this need for work. However, her education, work experience, migration history, and family background will weigh heavily in her choice of occupation and an employer's willingness to hire her. I expect that these indicators of individual and household characteristics, and human and social capital will explain a large portion of the variation in current occupation.

I use a multinomial logit model to estimate the relative explanatory value of these characteristics in the determination of current occupation. A multinomial model compares the

⁴ In the National Survey of Urban Employment, maquiladora manufacturing is not distinguished from other types of manufacturing. Therefore, small scale, self-employed manufacturers, as well as domestically based manufacturers, are included in this distribution. In the Labor Trajectories Survey they are included in service and commerce, although only 1 respondent fit this circumstance, a self-employed seamstress.

effect of the independent variables on multiple, discrete outcomes relative to a base outcome, in this case, commerce and service employment or self-employment relative to maquiladora employment. These effects are shown as coefficients, providing the probabilities of the outcome given the independent variable.

IV. Hypotheses

I expect that women's (1) individual and household characteristics, (2) their human capital, and (3) their social capital will largely predict their occupations. Certainly there is both a self-selection on the part of women into these occupations and a selection on the part of employers - two processes which cannot be neatly distinguished with this data. Therefore, what I am examining is the outcome of the matching process. However, I argue that competition among employers would result in different patterns of worker characteristics by occupations than would worker self-selection into occupation. Using the Labor Trajectories Survey I test for the effects of these three sets of variables on occupation.

The traditional and normative pattern of female employment has been for women to work prior to marriage and not work thereafter. Since the economic crisis in 1982 more married women and older women have entered the labor force to supplement declining household incomes, altering this traditional pattern (García and Oliveira, 1994). This indicates that female labor force participation is a response to household need, increasing the total supply of female labor independently of their individual characteristics. Based on a purely supply analysis, occupational placement should be less associated with individual characteristics and more associated with human capital and household characteristics which determine need and availability. This scenario

would suggest that in a non-discriminatory labor market, the major distinction in occupational pattern would be between formal employment and self-employment, such that women with more household demands would be more likely to be self-employed, while those women with fewer household demands or the ability to delegate those demands would be employed in more stable formal employment. However, in a discriminatory labor market, employers would select among the job candidates on the basis of individual characteristics which are not necessarily relevant to the employee's ability to perform the job. Previous research on maquiladora employers has clearly revealed their discriminatory taste for young, single women without children (Fernández-Kelly, 1983; Tiano, 1994; Wilson, 1992). There is no reason to believe that other employers in Mexico don't share the same preferences. This would result in wage competition between employers for the "ideal" employees. Indeed, Table 2 shows preliminary evidence of this competition in the higher wages of service and commerce employees. Given the lower levels of wage regulation in the commerce and service sector I predict that these occupations are more likely to be filled by female employees with the preferred traits. I summarize expected outcomes in a non-discriminatory and discriminatory labor market in Table 3.

I expect to find discrimination on the basis of individual characteristics in the female labor market in Tijuana. Age, marital status and children are likely to have independent effects on women's occupation because of employers' preferences for young, single female workers with no children. Service and commerce employers will be better able to compete for younger workers by offering higher wages. Older women will therefore be more likely to resort to self-employment either by choice or lack of employment options. These independent effects would be small and non-significant in predicting occupation in a non-discriminatory labor force given that these traits

are most likely to predict labor force participation, but not occupation. However, in a discriminatory labor market they are more likely to have an effect.

In contrast, human capital in the form of education and job experience are non-discriminatory predictors of occupation. Most maquiladoras require at least a primary education, but prefer secondary. Similarly, employment in commerce and services requires literacy and numeracy. This makes education an important prerequisite for these types of work. In contrast, most self-employment doesn't require formal education, channeling women with the lowest educational levels into self-employment. However, I expect there to be greater levels of education among service and commerce employees both because they are better able to compete for better educated workers and because some of these occupations, such as bookkeepers, administrators, secretaries and nurses may require more education. Similarly, previous work experience in the same occupation is expected to increase the likelihood of current employment in that profession, since employers seek to minimize training costs and workers seek to capitalize on their accrued skills.

Social capital is capital which exists in the structure of relationships between individuals (Coleman, 1988). The effect of social capital in labor market outcomes is difficult to measure because it is based in social networks which are difficult to measure in a representative sample. However, as was mentioned earlier, social networks are important bases for finding employment, particularly in Mexico. Social networks often form the basis of social capital since an employer's familiarity with a potential employee or their family increases their mutual sense of trust and obligation. Social capital is most evident in the labor market as the recommendation of a friend or family member for a job. Similarly, employment in a family business is another form of social

capital. This is roughly measured by the self-employment of one's father. I expect that those with "more" social capital, i.e., a friend or relative's recommendation or a father with a family business will be more likely to find formal employment and those with self-employed fathers are more likely to find employment in commerce and services. Social networks of migrants are another basis of social capital. Indigenous migrants to Tijuana come mainly from Oaxaca and Michoacan and they often live together and work as vendors, selling handicrafts to tourists. This is expected to increase their likelihood of working in self-employment. However, when considering the effects of social capital it is important to keep in mind that some of this social capital has been converted to human capital over the course of the lifetime, since the advantages and disadvantages one has at birth are likely to accumulate.

V. Results

A. Bivariate distributions

Table 4 presents percentage distributions of individual and household characteristics, human capital and social capital for each occupation. This sample reflects the age and marital status profile of working women in Mexico: working women tend to be young (24 or less) and single, although there are significant proportions of women who do not fit this profile. The marital status distributions are clearly distinct between occupations, but only in commerce and service employment is there evidence of a marriage bar in employment. Children also appear to be less of a differentiating factor in this sample — however, the data suffers from only being able to count the number of children ever born, not the current age of the youngest child. Another shortcoming in the data is the lack of information on household composition — headship was not clearly

established in the interview, so it is difficult to reliably identify the respondent's relationship to the household head. These shortcomings clearly limit arguments on the role of the respondent's work in the household economy.

This sample of working women reflects the importance of education in the labor market, with 70% employed in maquiladoras or commerce and services having attained at least a secondary education, compared with only 38% of self-employed women with that much education. Having had a previous job does not appear to be unusual for any of the occupational groups, furthermore, that experience is likely to be in one's current occupation. It is interesting to see that there is little movement between occupations, although self-employed women appear to have more previous experience in the other occupations than do maquiladora workers and service and commerce employees. In fact, for maquiladora workers and service and commerce employees, previous self-employment is quite rare. This tentatively suggests that these occupational trajectories are relatively impermeable to one another, although given the youth of this sample, few have had more than one or two previous jobs.

The distribution of state of birth by current occupation reveals the concentration of those born in primarily indigenous states in self-employment, supporting other research on the concentration of this relatively small population as handicraft street-vendors (Velasco, 1997). Although the tendency is not stark, it also appears that those born in Baja California are more likely to work as commerce or service employees, reinforcing the hypothesis that being a non-migrant gives one greater access to these jobs. Father's self-employment is a way in which limited social networks increase one's chances of finding commerce or service employment. This tendency is not evident for daughters of self-employed mothers; rather, there is a weak

relationship between mother's and daughter's self-employment. Further evidence of the importance of social capital for finding service and commerce employment is the relationship between having a relative or friend's recommendation for the current job — nearly half of commerce and service employees found their job through a family member or a friend already working there, while only 30% of maquiladora workers found their job this way.

B. Multivariate results

The results presented in Table 5 show that the individual characteristics (Model 1) alone account for the greatest improvement over the null model indicating that these characteristics are extremely critical in the process of matching workers and jobs. This supports my hypothesis that there would be strong differentiation between the three occupational categories on the basis of their individual characteristics due to the matching process of the labor market. This differentiation could be due to either employer discrimination or self-selection into occupations on the part of the workers. However, the fact that the independent effects of the variables are actually more significant in the contrast between maquiladora workers and service and commerce employees than between maquiladora workers and the self-employed leads me to believe that there is quite strong employer selection occurring in this process. I would expect there to be little self-selection between these occupations on the part of the workers since the requirements of the jobs are similar and the wages in commerce and services tend to be higher. Indeed, model 1 shows that those aged 30 and older and those with more than 2 children are less likely and single women are more likely to be employees in service and commerce than maquiladora workers. The contrast between self-employed and maquiladora employees shows that only older age is significantly associated with self-employment over maquiladora work, an effect that is very likely due to self-

selection. The explanatory importance of individual effects supports the hypothesis that employers continue to compete for workers with “ideal” traits and, as argued earlier, service and commerce employees are better able to compete for those workers with higher wages.

In the models adding human and social capital variables to the individual characteristics (Model 2 and 3), it is apparent that while both human and social capital variables improve the explanatory value of the model containing only individual demographic characteristics, the human capital variables improve the model more than the social capital variables. This is apparent from the greater contribution of the human capital variables than the social capital variables to the chi-square. Nevertheless, the model with both human and social capital in addition to the individual demographic characteristics (Model 4 in Table 5) is statistically significant.

I expect both human and social capital to make a difference in the sorting of women into occupations. Although human capital improves the model relatively more than social capital variables, it is also true that social capital is difficult to measure and the effects of social capital may already play a role in the greater accumulation of human capital over the lifetime. For example, having had the help of relative’s and friend’s social networks in finding a first job assists in the accumulation of human capital in the form of prior job experience. Therefore, both human and social capital are included in the final model (Model 4).

Human capital is a strong basis of differentiation in the labor market since occupations have different skills requirements. Model 4 clearly shows that education and previous experience in one’s current service and commerce employment or maquiladora employment have strong effects on predicting one’s current occupation. Higher levels of education -- those with secondary education or more -- are significantly more likely to work in service and commerce employment.

In contrast, education doesn't make a difference for predicting self-employment over maquiladora employment. However, the magnitude of the effects of previous experience are much greater than the effects of education. Previous commerce and service employment strongly increases the likelihood of employment in one of those positions and previous experience in maquiladora work strongly decreases the likelihood of commerce and service employment. For the self-employed, previous commerce and service employment is not significant in predicting current employment, but previous maquiladora employment strongly decreases the likelihood of current self-employment. (Previous self-employment experience was not included in the model since it was so strongly correlated with current self-employment that it caused the model to fail to converge.) The effect of previous experience is strong and it gives evidence regarding the lack of mobility between these occupations, since few move from one occupation to another. As expected, human capital effects are both the largest in magnitude of effect and most significant in the full model. This agrees with the hypothesis that service and commerce employers are able to employ workers with more human capital than are the maquiladoras because they generally offer better working conditions and wages.

The social capital effects are less definitive, but still important, predictors of occupation. I expected social capital to indicate access to networks which give one a relative advantage in the labor market. Indeed, workers whose fathers are self-employed are more likely to be employed in commerce and services than in maquiladora work, but have no significantly different chance of being self-employed. In contrast, having a relative's recommendation or the recommendation of a friend employed in the same place doesn't significantly increase the likelihood of employment in commerce and services relative to maquiladora work. However, having found a job through the

recommendation of a friend employed in the same place of business decreases the likelihood of being self-employed, reflecting the importance of networks for finding formal employment, and demonstrating that the use of social capital is strategy women use to avoid self-employment. The importance of a relative's or friend's recommendation for finding maquiladora employment clearly demonstrates the use of friendship networks for sharing labor market information. The fact that neither a friend's or relative's recommendation increases the likelihood of service or commerce employment relative to maquiladora work suggests that these networks are not sufficient to increase access to these more competitive occupations, taking all other variables into account.

A further indicator of social capital, place of birth, doesn't make a significant difference in one's occupation when all other variables are included. This indicates that there is not sufficient evidence that being a migrant from a primarily indigenous state increases one's likelihood of self-employment nor that being born in Baja California increases one's employment in commerce and service employment. However, in Model 3, which includes only individual and social capital variables, being born in Baja California decreases one's likelihood of being self-employed relative to working in a maquiladora. Clearly, the issue of social networks and the effect of being a migrant in Tijuana is not clear cut. In fact, it is possible that because of the fact that so many of Tijuana's residents are recent migrants with weaker ties in the area, social networks in Tijuana are less important than in older regions of Mexico.

VI. Conclusions

This research shows evidence that relatively greater regulation of wages in the maquiladoras as opposed to other sectors of the market prevents the maquiladora industry from

employing the low-skill female employees with the traits of the “ideal” worker. Women with more human capital and some degree of social capital are able to find jobs in commerce and service employment which are better paid and often provide better working conditions. Further support for this argument is seen in the multivariate results of Model 1 which show that individual characteristics alone are more significant in predicting commerce and service employment over maquiladora employment, while only age strongly differentiates the self-employed from maquiladora workers. The evidence that employer discrimination persists in commerce and service employment is stronger than the evidence for discrimination in maquiladora employment. In fact, although wages are lower in the maquiladoras, it may be that these employers are an increasingly important source of jobs for women workers who have traditionally not been in the labor force and who do not fit the ideal worker profile.

However, because of the strength of labor demand and the coordination of wage and benefit levels between manufacturers, the maquiladora industry essentially sets the wage floor for low-skill women workers. Commerce and service employers must pay slightly higher wages to employ workers with higher levels of human capital and other preferred characteristics. Self-employed women’s incomes vary depending on their occupation, but the majority are 30 years or older, reducing their chances of formal employment or making it less desirable, so their income depends on their ability to maintain their own business. Thus, the occupational hierarchy created by the characteristics of the local labor market is reflected not only in the differences in human capital, but also in demographic characteristics, between groups of workers.

Local labor market analysis makes clear the variety of means through which low-skill women workers are sorted into work in export-processing factories. It is not just patriarchal

conditions within the home and workplace, but also the institutions which shape the local labor market - the maquiladora owners association, the collaboration of labor unions and the state, the selectiveness into commerce and service employment - which keep women working in the maquiladoras. However, both gender and labor market structures operate to establish and maintain the low wage levels in the maquiladora sector.

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Table 1. Mean Percentage and Number of Women within Occupations by Sector

Occupation	Manufacturing	Construction and Electricity	Commerce & Services	Government	Foreign Employment or Missing	N
Professional	33.3 (12)	- -	33.3 (78)	- -	- -	31.4 (105)
Technician	31.6 (19)	- -	40.6 (91)	- -	- -	39.5 (119)
Education	- -	- -	62.7 (59)	- -	- -	64.5 (62)
Art, performance & sports	- -	- -	16.0 (25)	- -	- -	19.4 (31)
Functionaries and Directors	25.0 (24)	- -	18.4 (87)	- -	- -	20.8 (120)
Administration	43.6 (55)	55.6 (9)	60.9 (238)	39.5 (38)	41.2 (17)	54.9 (357)
Salespeople and employees	13.6 (22)	- -	33.4 (317)	- -	23.8 (21)	31.7 (360)
Street vendors	- -	- -	23.1 (52)	- -	- -	21.8 (55)
Personal services	- -	- -	39.9 (193)	- -	21.9 (32)	35.4 (240)
Domestic services	- -	- -	92.2 (64)	- -	100.0 (6)	92.9 (70)
Transportation	- -	- -	- -	- -	- -	0.0 (145)
Security services	- -	- -	- -	- -	- -	4.8 (62)
Agricultural worker	- -	- -	- -	- -	- -	8.3 (12)
Factory heads and supervisors	37.3 (67)	- -	- -	- -	- -	28.6 (91)
Manufacturing workers	39.0 (408)	- -	10.4 (192)	- -	6.6 (76)	24.0 (771)
Stationary machine operators	66.7 (39)	- -	- -	- -	- -	22.5 (129)
Grand Mean	37.5 (682)	4.5 (176)	34.3 (1585)	24.4 (82)	19.6 (204)	31.8 (2729)

- indicates fewer than 4 women in that occupation and sector.

The percentage and number shown is the percentage female and the total of men and women employed in that sector and occupation.

Data Source: Encuesta Nacional de Empleo Urbano, 1993.

Table 2. Distribution of Occupations within the dependent variable.

	Maquiladora Worker	Service or Commerce Employee	Self-Employed	N
Manufacturing Occupations				
assembler	61.0			64
solderer	1.9			2
packer	1.9			2
machine operator	8.6			9
production worker	2.9			3
seamstress	5.7		4.8	8
line chief	1.9			2
personal supervisor	8.6			9
quality inspector	7.6			8
Service and Commerce Occupations				
cook		5.3	2.4	6
waiter		2.1		2
food vendor			7.1	3
baker			2.4	1
nurse		2.1		2
secretary		6.4		6
receptionist		2.1		2
sweeper		1.1		1
cleaning person		7.4		7
data entry/programmer		1.1		1
bookkeeper		5.3	2.4	6
office worker		7.4		7
messenger		1.1		1
administrator		3.2		3
merchant			16.7	7
grocer			28.6	12
cashier		12.8		12
sales representative		2.1		2
salesperson		26.6	2.4	26
street vendor			16.7	7
cosmetic sales		1.1	2.4	2
clothes vendor		3.2		3
nanny			4.8	2
domestic servant			9.5	4
florist		1.1		1
leather worker		1.1		1
hair stylist		7.4		7
N	105	94	42	241
Mean wage in old pesos *	199259	226978	228548	
Standard deviation of wage *	60860	88360	163718	
Proportion of Female Working Population Employed in Group *	28.9	51.7	14.0	94.6

Data Source: Labor Trajectories Survey, 1993 and the National Survey of Urban Employment - Tijuana, 1993.

* Data from the National Survey of Urban Employment.

Table 3. Expected Effects of Variables in a Non-Discriminatory Labor Market Model vs. A Discriminatory Labor Market Model of Women’s Occupation Outcomes.

	Non-Discriminatory Market			Discriminatory Market		
	Maquila	Service/ Commerce Employee	Self- Employed	Maquila	Service/ Commerce Employee	Self- Employed
Age	1	n.e.	n.e.	1	negative	positive
Marital Status	1	n.e.	n.e.	1	Single	Married
Kids in HH	1	n.e.	n.e.	1	negative	positive
Education	1	positive	negative	1	positive	negative
Previous Maquila Experience	1	negative	negative	1	negative	negative
Previous Service or Commerce Employment	1	positive	negative	1	positive	negative
Father’s Self- Employment	1	n.e.	n.e.	1	positive	negative
Relative’s Recommend- ation	1	n.e.	n.e.	1	positive	negative
Friend’s Recommend- ation	1	n.e.	n.e.	1	positive	negative

Table 4. Characteristics of Workers by Occupational Group in Labor Trajectories Survey, 1993.

	Maquiladora Worker	Service or Commerce Employee	Self- Employed	N
<i>Individual and Household Char.</i>				
Age				
12-19	28.6	35.1	7.1	66
20-24	29.5	43.6	9.5	76
25-29	20.0	9.6	4.8	32
30+	21.9	11.7	78.6	67
Marital Status				
Single	48.6	72.3	16.7	126
In Union	41.9	20.2	64.3	90
Wid./Div./Sep.	9.5	7.4	19.0	25
Children				
None between 0 and 15 years	32.4	70.2	35.7	115
Child between 0 and 4	40.0	14.9	21.4	65
Child between 5 and 15	27.6	14.9	42.9	61
<i>Human Capital</i>				
Education				
None	3.8	2.1	14.3	12
Primary	41.0	11.7	47.6	74
Secondary	44.8	42.6	28.6	99
More	10.5	43.6	9.5	56
Has had a previous job	66.0	59.6	57.1	143
Prev. Self-Employed	1.9	0.0	26.2	13
Prev. Maquila Employee	41.0	3.2	7.1	49
Prev. Comm. Or Service Employee	5.7	33.0	2.4	38
<i>Social Capital</i>				
Father Self-employed	18.1	35.1	14.3	58
Relative's recommendation	9.5	24.5	2.4	34
Employed friend's recommend.	21.9	27.7	9.5	53
Other	68.6	47.9	88.1	154
Born in Baja California	34.3	48.9	11.9	87
Born in Michoacan or Oaxaca	7.6	4.3	26.2	23
Born in Other State	58.1	46.8	61.9	131
Mean Income	199259	226978	228548	227
Standard Error on Mean Income	(60860)	(88360)	(163718)	
N	105	100	42	241

Data Source: Labor Trajectories Survey, 1993.

Table 5. Logit Coefficients from the Regression of Occupation on Individual Characteristics.
 Column 1: Commerce and Service Employees; Column 2: Self-employed; Comparison Group:
 Maquiladora Workers.

		Model 1		Model 2		Model 3	
		Col. 1	Col. 2	Col. 1	Col. 2	Col. 1	Col. 2
Age	12-19	-0.6	-0.3	-	-0.0	-0.6	-
	20-24	-	-	-	-	-	-
	25-29	-1.1	-0.4	-	0.0	-1.0	-
	30+	-1.7	2.0	-	2.7	-2.4	-
Children	No children between 0 and 18	-	-	-	-	-	-
	Has child less than 5 years	-1.4	-1.2	-	-0.8	-1.1	-
	Has child between 5 and 18 years	0.8	-0.2	-	-0.5	0.8	-
Marital Status	Single	0.4	-1.3	-	-1.5	0.8	-
	In union	-	-	-	-	-	-
	Div./Sep./Wid.	1.0	-0.5	-	-0.8	1.1	-
Constant		0.3	-0.9	-0.1	-1.1	0.3	-
	Prob > chi ²	.0000		.0000		.0000	
	d.o.f.	14		7		7	
	Chi-square	95.61		68.79		45.72	
	Pseudo R ²	.1919		.1381		.0918	
	N	241		241		241	
	difference from full model	-		26.82		49.89	
	d.o.f.	-		7		7	
	Prob > chi ²	-		.0004		.0000	

Data Source: Labor Trajectories Survey, 1993.

Note: Coefficients in bold are significant at $p > 0.10$.

Table 6. Logit Coefficients from the Regression of Occupation on Selected Independent Variables.

Column 1: Commerce and Service Employees; Column 2: Self-employed.; Comparison Group: Maquiladora Workers.

		Model 1		Model 2		Model 3		Model 4	
		Col. 1	Col. 2						
Age									
	12-19	-0.6	-0.3	-0.9	-0.6	-0.7	-0.1	-1.0	-0.5
	20-24	-	-	-	-	-	-	-	-
	25-29	-1.0	-0.4	-0.5	0.1	-1.0	-0.4	-0.6	0.2
	30+	-1.5	2.1	-0.3	2.8	-1.6	2.2	-0.6	2.9
Children									
	No children between 0 and 15	-	-	-	-	-	-	-	-
	Has child less than 5 years	-1.4	-1.2	-1.6	-0.9	-1.4	-1.3	-1.7	-1.0
	Has child between 5 and 15 years	0.3	-0.5	0.3	-0.7	0.3	-0.5	0.5	-0.6
Marital Status									
	Single	-	-	-	-	-	-	-	-
	In union	-0.2	1.5	-0.6	1.1	0.0	1.5	-0.4	1.1
	Div./Sep./Wid.	0.6	0.9	0.7	0.9	0.9	0.8	1.2	0.8
Education									
	None			-0.2	0.1			-0.2	0.1
	Primary			-	-			-	-
	Secondary			1.3	0.9			1.2	0.8
	More			2.3	1.0			2.3	0.8
Previous maquila employment				-3.2	-2.5			-3.4	-2.7
Previous service or commerce employment				2.2	-1.0			2.2	-0.8
Father self-employed						0.9	0.2	1.1	0.5
Relative's recommendation						1.0	-1.4	0.7	-1.8
Employed friend's recommendation						0.5	-1.4	0.6	-1.6
Other						-	-	-	-
Constant		0.8	-2.2	-0.3	-2.3	0.2	-2.0	-0.8	-1.9
	Prob > chi ²	0.0000		0.0000		0.0000		0.0000	
	d.o.f.	14		24		24		30	
	Chi-square	95.40		191.28		117.42		211.17	
	Pseudo R ²	0.1915		0.3839		0.2357		0.4238	
	N	241		241		241		241	
	difference from full model	115.77		19.89		93.32		-	
	d.o.f.	16		6		10		-	
	Prob > chi ²	0.0000		0.0029		0.0000		-	

Data Source: Labor Trajectories Survey, 1993.

Note: Coefficients in bold are significant at $p > 0.10$.

Table 7. Unadjusted and Adjusted Predicted Probabilities of Working in an Occupational Group

	Maquiladora Employment		Commerce and Service Employment		Self-employment	
	Unadjusted	Adjusted	Unadjusted	Adjusted	Unadjusted	Adjusted
<i>Individual Characteristics</i>						
Age						
12-19	.46	.57	.50	.38	.05	.05
20-24	.41	.44	.54	.50	.05	.06
25-29	.65	.50	.28	.42	.06	.08
30+	.34	.31	.16	.28	.49	.42
Marital Status						
Single	.41	.47	.54	.41	.06	.12
In union	.49	.44	.21	.33	.30	.23
Widowed/Divorced/Separated	.40	.32	.28	.54	.32	.14
Children						
None	.36	.38	.49	.41	.14	.22
Less than 5 years old	.65	.60	.22	.23	.28	.17
Between 5 and 15 years old	.48	.36	.23	.49	.30	.15
<i>Human Capital</i>						
Education						
None	.33	.59	.16	.24	.50	.18
Primary	.58	.58	.15	.26	.27	.17
Secondary	.48	.41	.40	.40	.20	.19
More than secondary	.20	.30	.73	.55	.07	.15
Previous employment						
In a maquiladora	.88	.83	.06	.11	.06	.06
No maquiladora experience	.32	.34	.47	.38	.20	.21
In commerce or service employment	.16	.16	.82	.77	.03	.08
No commerce or service experience	.49	.38	.31	.39	.20	.23
<i>Social Capital</i>						
Father self-employed	.33	.34	.57	.48	.10	.18
Father not self-employed	.47	.47	.33	.36	.20	.17
Recommendation of family member	.29	.43	.68	.51	.03	.06
No recommendation of family member	.46	.44	.34	.37	.20	.19
Recommendation of friend	.43	.44	.49	.48	.08	.08
No recommendation of friend	.44	.44	.36	.36	.20	.20

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