

**THE DIVERSE NATURE OF THE MEXICAN NORTHERN BORDER:
THE CASE OF URBAN EMPLOYMENT**

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ABSTRACT

One sector of the labor market has contributed significantly to the unique development of Mexico's northern border: this sector is the maquiladora export industry. The maquiladora's role becomes important due to the international character of these enterprises, as well as its particular repercussions in raising the economic participation of young women. However, the emphasis on the study of the maquiladoras has not been coupled with efforts to understand the employment characteristics of the non-maquiladora sectors. A comprehensive understanding of the work opportunity structures along the border thus has not yet been attained. This paper encourages a more satisfactory vision of the border labor markets by emphasizing the total labor participation. The article acknowledges the plurality of the border and therefore explores diversity and heterogeneity along the area. We do this by characterizing and comparing employment characteristics of four major populations on the Mexican northern border:

Tijuana. Ciudad Juárez. Nuevo Laredo and Matamoros.

RESUMEN

Un elemento importante en la formación del carácter único y especial de la frontera mexicana ha sido la inserción de la maquiladora de exportación en el mercado de trabajo regional. Su papel ha cobrado importancia en relación al carácter internacional del proceso maquilador, y los efectos sobre la participación económica de mujeres jóvenes. Sin embargo, el énfasis que se ha dado al estudio de las maquiladoras no ha venido acompañado por un esfuerzo comparativo con sectores no maquiladores, así es que un entendimiento comprensivo de la estructura de oportunidades en el empleo fronterizo todavía no se realiza. Este escrito intenta presentar una visión comprensiva de los mercados de trabajo fronterizos, enfatizando la participación total de la población económicamente activa. Aceptando la pluralidad fronteriza, los autores exploran la diversidad y heterogeneidad de la región, describiendo y comparando las características del empleo en cuatro centros poblacionales de la frontera norte mexicana: Tijuana, Ciudad Juárez, Nuevo Laredo, y Matamoros.

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Introduction¹

THE border! It is a 3,000 kilometer line connecting the Caribbean with the Pacific in the land mass called North America. It is a spacious but thirsty region having limited natural resources, but one still able to attract many newcomers from long distances. It is a meeting ground for two major but dissimilar cultures, whose interaction produces unique social processes.

The border! It is all these things and more. Oddly enough, perhaps a major advance in our thinking and understanding of the border is to be won by recourse to a simple grammatical transformation: the shift from singular to plural forms. In some respects, i.e., a political one, the border is one entity, but even here the move from the federal level to state and local levels also requires the move from singular to plural.

The mobility of goods and persons on the border is seldom a lateral movement along the length of the border; most often it is a penetration across the border of a series of corridors occurring at irregular intervals, driving some distance into the territories of Mexico and the United States. These points of crossing are signaled by twin-city population clusters ranging from a few thousand to those numbering in the millions.

Once the plurality of the border is acknowledged, it then becomes necessary to explore diversity and heterogeneity along the border. We propose to do this by systematically characterizing and comparing four major population clusters on the Mexican side of the border:

Tijuana, Ciudad Juárez, Nuevo Laredo and Matamoros. The first and last represent extreme locations on the border, with the middle two located well within the interior. Aside from Mexicali, which still presents a strong agricultural character, these four metropolitan

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areas are the largest along the entire border. We also include in our tables the three major metropolitan centers of interior Mexico (Mexico City, Guadalajara and Monterrey). They will provide a point of reference and of contrast for the border centers.

Among characteristics of border cities, why are labor markets important? A significant feature of the construction of a unique character of the Mexican border has been one sector of the labor markets: the maquiladora export industry (MEI).² This has become a rather prominent issue due to the international character of the maquiladora process, as well as its particular repercussions in raising the economic participation of young women. However, the emphasis on the study of the MEI has not been coupled with efforts to understand the employment characteristics of the non-maquiladora sectors. A comprehensive understanding of the work opportunity structures along the border thus has not yet been attained. Therefore, this paper tries to encourage a more satisfactory vision of the border labor markets by emphasizing the total labor participation. In doing so, we make use of the Mexican National Survey of Urban Employment (Encuesta Nacional de Empleo Urbano: ENEU).

We believe that the concept of opportunity structure analytically can contribute to the understanding of several social border phenomena. This concept has a double meaning in the case of labor markets. On one hand, opportunity structures represent an objective reality of a set of occupational arrangements and labor market conditions that are external to the individuals. This is the meaning used in this paper. On the other hand, opportunity structures are subjective referents for individuals' perceptions (i.e., entrepreneurs or workers) of these external arrangements. The dynamics of labor markets is consequently a product of the interaction between jobs and people. This process is particularly complex on the border.

One of the most distinctive aspects of the U.S.-Mexican border is the economic and social interaction produced by the articulation of two asymmetric opportunity structures within one geographical area. These structures have developed as a result of historical divergences related to the socioeconomic developments of both

2 The MEI not only has been the most analyzed issue about markets on the border, but also one of the most studied social phenomena in general of the region. Indeed, the recent evolution of systematic social research of the Mexican border is closely related to the studies regarding MEI, such as Bustamante (1975), Fernandez Kelly (1983) Carrillo y Hernandez (1985), Iglesias (1985).

countries. The asymmetric nature of these opportunity structures basically and operationally is depicted by the dynamics of the labor and production markets. They are the most conspicuous referent of the social interactions that have resulted from the disparate income levels between the two countries. The production markets fulfill a similar function for those interactions produced by the discrepancies in the services and goods offered, as well as in their quality and price differences. These interactions range from micro-social phenomena, such as commuting across the border, to more complex ones, such as those related to the operation of maquiladoras.

A comprehensive study of the U.S.-Mexican border is not only possible by analyzing the opportunity structures across the international boundary, but also by comparing the border centers with the rest of their own countries. For example, in terms of opportunity structures the Mexican border is one of the most developed regions of its country, while on the American side the border is one of the less developed regions within the U.S. (excepting San Diego). Thus, the asymmetric opportunity structures on the U.S.-Mexican border should be comprehended by taking in to account both binational and national dimensions. However, this paper explores Mexican border labor markets as expressions of dissimilar opportunity structures only within the Mexican context.

I. The Diversity of Labor Market Conditions on the Mexican Border

Tables 1 to 3 provide a descriptive presentation of a range of variables of the economically active population (EAP) for the four border cities as well as for the three Mexican largest metropolitan areas: Mexico City, Guadalajara and Monterrey.³ The latter cities are provided only for purposes of general contrast rather than for a systematic analysis, but we do want to make one general point. An inspection of the array of variables for these two sets of urban areas allows for the following generalization: in nearly all contrasts, the border cities display more variation in terms of urban labor conditions than do the three metropolitan areas. The most exaggerated examples of this heterogeneity can be

3 In this paper the concept of metropolitan areas is used only to describe the urban areas of Mexico City, Guadalajara and Monterrey. The border cities are metropolitan areas only when the twin-cities are included in the analysis, which is not the case here.

seen for those variables in which the border cities display the greatest divergence among the group of seven cities:

Workers in the manufacturing sector	Matamoros (36.7%) Nuevo Laredo (22.1%)
Wage workers not receiving social security	Tijuana (37.8%) Matamoros (16.8%)
Domestic servants	Nuevo Laredo (4.6%) Ciudad Juárez (1.8%)
Wage workers in establishments of 1 to 5 employees	Nuevo Laredo (24.3%) Ciudad Juárez (12.5%)
Wage workers in establishments with more than 100 employees	Matamoros (68.5%) Tijuana (36.2%)
Monthly average income of the EAP in the primary occupation	Tijuana (U.S. \$345.40) Nuevo Laredo (U.S. \$ 197.80)

Less striking but also very important differences are:

Workers in the commercial sector	Tijuana (21.6%) Matamoros (14.4%)
Female participation rate	Matamoros (33.8) Nuevo Laredo (28.0)
Male participation rate	Tijuana (72.1) Matamoros (68.0)
Workers with an education above junior high school	Tijuana (25.5%) Ciudad Juárez (19.4%)
Self-employment	Nuevo Laredo (18.1%) Matamoros (13.8%)
Workers laboring less than 20 hours a week	Ciudad Juárez (6.4%) Nuevo Laredo (3.8%)

The extent of these variations might appear unexpected. After all, the border cities often have been considered as similar entities since they share common geographical and socioeconomic elements. By contrast, the three interior metropolitan centers overall show less variation, but this is not necessarily to be expected. For example, Mexico City, as the primate city in Mexico, could be expected to display, through its employment structure, the pattern of power and privilege that clearly distinguishes it from the next two largest Mexican metropolitan areas of Guadalajara and Monterrey. One

possible explanation for these unexpected differences is that the three largest interior metropolitan areas show less variation than expected because of their large size. They each account for at least three million inhabitants, and cities of this magnitude generally exhibit a more diversified structure of employment than those found in smaller places. In other words, the bases for the greater heterogeneity among border cities in part derives from the economic specialization made possible by their smaller size. As will be seen later, cities like Matamoros with a population of approximately 300 thousand inhabitants, allow for a high level of specialization, one which is unlikely in a city ten times larger.

In spite of the diverse situations along the border, there are three important common elements of the border cities in terms of employment. First, there is the substantial amount of labor working in modern industries such as electronic, electric and automotive. These industries, mostly maquiladoras, can account for as much as 24.5% of the EAP as in the case of Matamoros (Table 1). Tijuana counts with the lowest percentage on this indicator among the border cities (5.3%), but this is still higher than any of the three interior cities. Second, the particular labor conditions produced by the maquiladora export industry are not only manifest by the rising economic participation of women, but also by producing a significant allocation of female labor in a sector traditionally dominated by men -manufacturing (Cruz and Zenteno, 1987).⁴ Third, the unique situation of the border allows a person to live in one country and work in another where labor market conditions are quite different. Table 1 shows that as much as 7.8% and 4.8% of the EAP in Tijuana and Ciudad Juárez, respectively, are working in the U.S. labor market.

II. Portrayal of the Four Mexican Border Labor Markets

Turning now to the analysis of the border cities, rather than examining each of the variables presented in the tables, at best a lengthy and tedious process, we will attempt to characterize each of the four border areas in terms of significant features of their employment patterns. As we will see, the maquiladora export indus-

4 Another important characteristic is that the MEI Industry has not been capable of creating an Internal labor market which allows the segmentation of the border labor markets. In the traditional economic sense, that is, neither by creating Internal career mobility nor by segregating particular segments of the population such as the young, women and migrants (Zenteno, 1992).

try is only one part of the opportunity structure of these cities, although there is no doubt that its presence or absence often is the defining feature in the characterization of employment. For this reason it is necessary to take two factors into account. First, we will characterize the border cities as entities rather than considering the individuals who live in them. Secondly, the ENEU does not explicitly identify whether or not the activity is a maquiladora one so we must indirectly calculate the working population in this type of industry. Although it is limited, we will use only one criterion to refer to workers in the maquiladora export industry: those employed in electronics as well as in the automotive industry (see Table 1).

Matamoros: maquiladora primacy without economic diversity

Matamoros is at the eastern extreme of the U.S. -Mexican border and it was populated by 303,392 inhabitants in 1990. This border city presents an astonishing concentration of its EAP working in the secondary sector (46.4%). This figure has no correspondence on either the border or the interior metropolitan areas, the closest being Ciudad Juárez (38.8%). Moreover, employment in the two industries which can be easily related to the maquiladora export industry (electronic-electrical and automotive) accounts for one-fourth of the EAP (24.5%). Consequently, employment in the tertiary sector is low (49.3%) in comparison with any other border city. Equally distinctive of Matamoros is its low levels of self-employment (13.8%), non-remunerated workers (2.0%), and employment in the United States (2.3%).

The predominance of the maquiladora export industry in turn affects most of the other employment characteristics. Thus, Matamoros exhibits the highest levels along the border in the following indicators:

- a) Rate of female participation in non-household economic activities (33.8):
- b) Percentage of wage/piece employees (77.0%);
- c) Percentage of direct employees working in the manufacturing sector (24.4%);
- d) Percentage of wage employees covered by social security (83.0%);
- e) Percentage of wage employees laboring in establishments with more than 100 workers (68.5%).

The ENEU information suggests an extraordinary primacy of the MEI in the economy and employment characteristics of Matamoros. This is more noticeable when contrasting it with Ciudad Juárez, a city with the highest absolute level of maquiladora employment in Mexico.

TABLE 1
DISTRIBUTION OF THE ECONOMICALLY ACTIVE POPULATION BY INDUSTRY, 1989

	Tijuana	Chihuahua	Nuevo Laredo	Matamoros	Monterrey	Guadalajara	Mexico City
TOTAL EAP	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
AGRICULTURAL AND EXTRACTIVE	0.6%	0.7%	2.1%	2.1%	0.9%	1.0%	2.0%
MANUFACTURING	22.1%	34.6%	22.1%	36.7%	28.9%	26.5%	24.4%
Food, Textile, Shoe and Wood	9.7%	9.1%	7.1%	6.2%	10.7%	15.3%	12.2%
Chemical, Metallic and Electric	5.1%	3.0%	3.9%	2.8%	10.6%	6.7%	6.6%
Electronic and Electric	5.2%	10.1%	3.2%	12.5%	1.3%	0.9%	0.9%
Automobile, Motor Parts, Automobile Accessories	.1%	8.5%	4.8%	12.0%	2.0%	0.3%	1.3%
Other Machinery and Equipment	1.9%	4.0%	3.2%	3.2%	4.4%	3.4%	3.5%
CONSTRUCTION	7.0%	4.2%	8.7%	9.7%	7.3%	6.2%	3.6%
COMMERCE (WHOLESALE AND RETAIL)	21.6%	19.4%	16.7%	14.4%	21.9%	23.8%	20.4%
SERVICES	38.9%	34.3%	41.9%	32.6%	37.2%	39.0%	45.6%

Transportation and Communications	5.0%	4.4%	10.1%	3.6%	5.0%	4.3%	5.5%
Professional, Financial and Real Estate	5.5%	5.5%	4.7%	2.8%	5.9%	5.4%	6.4%
Medical	3.6%	3.4%	2.5%	3.6%	3.9%	4.1%	4.0%
Educational	2.8%	3.1%	4.1%	5.9%	6.6%	5.0%	6.0%
Government	2.4%	2.2%	2.9%	3.4%	3.4%	3.3%	8.1%
Restaurants, Bars and Hotels	6.9%	5.2%	6.3%	4.2%	4.6%	5.0%	4.2%
Maintenance and Repair	5.6%	5.2%	6.7%	4.3%	4.6%	5.0%	4.2%
Other Personal Services	7.1%	5.3%	4.7%	4.3%	4.2%	6.3%	6.7%
DOMESTIC SERVICE	1.6%	1.8%	4.6%	2.3%	3.7%	3.4%	3.9%
EAP IN THE USA	7.8%	4.8%	3.8%	2.3%	.1%	.1%	.1%
NOT SPECIFIED	0.5%	0.3%	0.0%	0.0%	0.0%	0.0%	0.1%

Source: Mexican National Survey of Urban Employment (ENEU), fourth quarter 1989.

According to employment figures reported by the MEI (INEGI, June 1990) and the preliminary information from the 1990 Population Census, 16% of the population of Ciudad Juárez is employed in this industry. This percentage is only 12% for Matamoros. However, Matamoros displays a greater economic specialization than Ciudad Juárez considering the EAP instead of the overall population.

The industrial specialization of Matamoros produces a higher income in comparison with Nuevo Laredo and the interior metropolitan areas, but not with respect to Tijuana and Ciudad Juárez. The average income of the EAP was 2.54 times higher than the official minimum wage of the city in 1989, and equivalent to \$270 U.S. dollars monthly. Half of the EAP was earning at least \$199 U.S. dollars monthly.

Although the possibilities for good earnings are not negligible in Matamoros, these depend greatly on wage jobs in the secondary sector, since there do not seem to exist many alternatives in other economic sectors. This situation, coupled with a low economic participation of men (68.0), the relatively high open unemployment rate (2.7%), the apparent lack of opportunities in self-employment, and the low level of economic participation in the U.S. labor market, reveal a significant pressure on Matamoros's labor market. This condition previously has been suggested in an article by Pedrero (1987).

Thus, Matamoros's employment characteristics exhibit a great degree of specialization as a result of the interaction of the significant effects of the maquiladora export industry, the limited possibilities of producing employment in other economic sectors, and the relatively small size of city.

Nuevo Laredo: the traditional pattern of a border city

Nuevo Laredo is another city bordering on Texas. Like Matamoros, this border center numbers less than 300 thousand inhabitants (217,912 in 1990), and also shows a prominent degree of economic specialization in terms of employment. Nuevo Laredo illustrates some of the characteristics that have allowed the stereotyping of the Mexican border cities before the emergence of the MEI in the region in 1964. It is a typical economy and employment structure oriented to the production of services.

Thus, almost half of the economically active population (46.5%) in Nuevo Laredo is involved in services, particularly those related to transportation and communications (10.1%), and repairs and maintenance (6.7%). This illustrates the role of Nuevo Laredo as the major crossing point along the border for product trade between the United

States and Mexico. Other important services are touristic ones, i.e., hotels, restaurants and bars (6.3%). Lastly, this border city also shows a relatively large number of domestic servants (4.6%) in comparison with any of the other six urban centers.

Along with Tijuana, the level of manufacturer employment (22.1 %) of Nuevo Laredo is the lowest among the four border centers. Nevertheless, the presence of a developing MEI similar to those of Matamoros and Ciudad Juárez is evident, since there is a meaningful proportion of workers in the electronics, electrical and automotive industries (8.07%), direct workers in the manufacturing sector (13.6%), and wage workers employed in enterprises with more than 100 employees (43.3%).

Even though the economy and occupational structure of Ciudad Juárez and Nuevo Laredo are rather different, these two cities present the lowest educational level of the EAP among the border cities, and also in comparison with the interior metropolitan areas. This low educational level of Nuevo Laredo's EAP corresponds to the small percentage of professionals and technicians (5.1%) in the occupational structure of this city. and the type of services produced. Although self-employment is considerable in Nuevo Laredo (18.1%), this labor market presents a large number of wage/piece workers (74.8%) and a notable number of workers laboring regular hours weekly (72.4%). However, wage labor in Nuevo Laredo presents a substantial allocation in small-scale enterprises (24.3%), and it is not as protected by social security as those of Ciudad Juárez and Matamoros (72.1%).

Low remuneration is the most distinct and critical aspect of employment conditions in Nuevo Laredo. Tijuana, whose official minimum salary is equal to Nuevo Laredo's, presents an average income of the EAP 75% superior to that earned in Nuevo Laredo (\$345 and \$ 1 98 U.S. dollars, respectively), a difference hardly explained by dissimilarities in the cost of living in both cities. The income distribution discloses that 75% of the EAP of Nuevo Laredo had incomes below or equal to \$231 U.S. dollars, substantially less than the average income of the EAP of the other three border cities.

TABLE 2

SELECTED LABOR MARKET CHARACTERISTICS, 1969

	Tijuana	Ciudad Juárez	Nuevo Laredo	Matamoros	Monterrey	Guadaluajara	México City
PARTICIPATION RATES							
Male	72.1	71.6	70.7	68.0	69.1	73.2	68.1
Female	28.2	31.4	28.0	33.8	29.5	33.1	33.9
OPEN UNEMPLOYMENT	1.0%	1.7%	1.5%	2.7%	2.6%	1.4%	3.1%
EDUCATION (MEAN)	8.4	7.7	7.7	8.0	9.2	8.3	8.6
Elementary School Incomplete	17.8%	19.4%	21.5%	21.0%	14.1%	20.8%	17.0%
Elementary Completed or Any Year Secondary	57.4%	61.2%	58.0%	56.1%	57.5%	54.9%	56.2%
Any Year High School or More	25.5%	19.4%	20.5%	22.9%	28.4%	24.3%	26.9%
OCCUPATIONAL POSITION							
Self-Employed	17.0%	17.4%	18.1%	13.8%	14.1%	18.8%	18.1%
Wage / Piece Workers	72.0%	72.9%	74.8%	77.0%	77.8%	68.8%	72.7%
Non-Remunerated Workers	4.3%	4.3%	3.2%	2.0%	3.6%	6.8%	5.3%

OCCUPATION	7.8%	7.3%	5.1%	5.3%	8.7%	8.3%	8.7%
Professionals and Specialized Technicians							8.7%
Direct Workers in the Manufacturing Sector	13.9%	18.2%	13.6%	24.4%	13.0%	15.2%	11.2%
Commerce Small-Scale Entrepreneurs (Non-Ambulant)	4.7%	4.3%	4.9%	3.5%	4.6%	4.8%	6.1%
Sales Workers	9.6%	9.4%	8.0%	5.7%	9.6%	11.1%	9.2%
Workers in Public and Personal Services	10.8%	6.7%	8.7%	7.4%	6.2%	8.8%	10.0%
Transport Operators	6.0%	3.7%	5.1%	3.0%	5.2%	4.2%	4.9%
HOURS WORKED	43.2	39.8	40.8	39.3	40.9	39.6	40.4
Less than 20 hours	4.8%	6.4%	3.8%	3.8%	5.2%	6.4%	6.7%
20-39 hours	16.4%	17.1%	12.0%	19.1%	17.7%	21.3%	21.6%
40-48 hours	54.2%	54.1%	72.4%	60.5%	59.5%	53.9%	44.2%

More than 48 hours	19.8%	16.0%	7.9%	11.4%	14.5%	14.4%	22.9%
WAGE WORKERS NOT COVERED BY SOCIAL SECURITY	37.8%	19.4%	27.9%	16.8%	20.8%	29.5%	27.7%
SIZE OF ENTERPRISE (WAGE WORKERS)							
1-5 workers	18.5%	12.5%	24.3%	15.7%	16.1%	21.8%	19.1%
More than 100 workers	36.2%	63.7%	43.3%	68.5%	54.8%	41.2%	57.4%

Source: Mexican National Survey of Urban Employment, fourth quarter 1989.

TABLE 3
MONTHLY INCOME IN THE MAIN OCCUPATION OF THE
ECONOMICALLY ACTIVE POPULATION BY QUANTILES OF
INCOME, 1989 (DOLLARS)¹

City	1st. Quartile Value at 25%	2nd. Quartile Value at 50%	3rd. Quartile Value at 75%	Mean	Minimum Salary ²
Tijuana	174.3 1.64	248.7 2.35	414.4 3.91	345.4 3.26	106.0 1.00 ³
Ciudad Juárez	136.1 1.28	192.8 1.82	331.5 3.13	287.6 2.71	106.0 1.00
Nuevo Laredo	106.8 1.01	132.6 1.25	231.3 2.18	197.8 1.87	106.0 1.00
Matamoros	172.3 1.63	198.9 1.88	289.1 2.73	269.5 2.54	106.0 1.00
Monterrey	107.9 1.10	154.2 1.57	246.7 2.52	230.2 2.35	97.9 1.00
Guadalajara	106.4 1.09	154.2 1.57	248.7 2.54	222.1 2.27	97.9 1.00
Mexico City	111.8 1.05	152.7 1.44	232.1 2.19	218.2 2.06	106.0 1.00

Source: Mexican National Survey of Urban Employment, fourth quarter 1989.

¹ The exchange ratio for this period was 2,593.9 pesos per dollar.

² Official minimum salaries from July 1 to December 3, 1989.

³ Minimum salary ratio.

Ciudad Juárez: Maquiladora Primacy with Economic Diversity

As previously mentioned, other information has shown Ciudad Juárez to be the Mexican city with the highest absolute maquiladora employment in relation to the population.⁵ Nevertheless, and contrasting with Matamoros, the ENEU data show that the influence of the MEI is reproduced at a lower level considering only the economically active population, most likely because the economy of Ciudad Juárez does not allow for a rather specialized employment opportunity structure.

Ciudad Juárez shows a considerable amount of labor in the manufacturing sector (34.6%). This percentage is only a bit below

⁵ Ciudad Juárez has only 15% of the maquiladora establishments nationwide, but it has 27% of the workers in this industry (INEGI-SPP, June, 1990).

that of Matamoros and substantially larger than those of the other five cities. Moreover, 18.6% of the economically active population of Ciudad Juárez is employed in either the electrical-electronics or the automotive industries. However, Ciudad Juárez displays a more diverse employment structure than Matamoros mainly due to greater opportunities in activities such as wholesale and retail commerce (19.4% and 14.4%, respectively), traditional manufacturing (9.1% and 6.2%), work in the USA (4.8% and 2.3%), and self-employment (17.4% and 13.8%).

The presence of the MEI in Ciudad Juárez has significant consequences in raising the levels of the following employment characteristics: rate of female economic participation (31.4), direct workers in the manufacturing sector (18.2%), wage workers covered by social security (80.6%), and wage labor working in enterprises with more than 100 employees (63.7%). However, wage work has as a counterpart a significant representation of self-employment.

Maquiladora employment, coupled with other employment opportunities, results in a high level of average remuneration of the EAP:

\$288 U.S. dollars (2.7 times the minimum wage). Although average income in Ciudad Juárez is not as high as income in Tijuana, half of those in the EAP have an income at least twice the minimum salary. This same situation is found in Matamoros. However, average income in Ciudad Juárez is higher because the lower limit of the upper quartile of the income distribution is higher in Ciudad Juárez (\$332 U.S.) than in Matamoros (\$289 U.S.). This situation, along with the low remuneration of the EAP in first quartile of the income distribution, suggests that Ciudad Juárez has the greatest income inequality among the border cities.

The panorama of Ciudad Juárez has slight contradictions in two indicators. The border cities in general present lower levels of education of the work force than the three interior cities. However, it is remarkable that Ciudad Juárez has the lowest level of education among the border cities, even with its high presence of professionals and technicians. Second, it would be expected that a higher percentage of the EAP would be working between 40 and 48 hours per week, because of the high levels of wage work in the city, but this is not the case. Even more unusual is the high number of people working less than 20 hours (6.4%) or more than 48 hours (16%), a sort of disguised unemployment.

In summary, Ciudad Juárez presents a less specialized labor structure even though it has a strong maquiladora representation, and its labor is recompensed by a relatively good income. But the lowest education level of the EAP, the high probability of working

either part time or more than 48 hours, as well as the greater inequality in the income distribution, suggest a significant heterogeneity within the working class.

Tijuana: the contemporary image of a border city

Tijuana, the most studied city of the Mexican border and therefore responsible in large part for most of our understanding of this region, is for many reasons difficult to characterize. The presence of the *maquiladora* in the city is more important in terms of establishments than in employment, since it has 26% of the *maquiladora* establishments nation wide, but only 14% of its employees (inegi- spp, June 1990). The ENEU information shows that the relative importance of employment in the electrical, electronic and automotive industries is even higher in Nuevo Laredo than in Tijuana. The low level of relative importance of these two industries in Tijuana, in large part, is the consequence of the significant presence of an important traditional industry such as food, textile, etc. (9.7%) and an industry of chemical and metal substances (5.1%). The high level of non-*maquiladora* industrialization of Tijuana in comparison with other border cities has been mentioned before (Alonso, 1988; Zenteno, 1989).

Tijuana is the border city with the largest amount of labor in the tertiary sector: 62.1% of the EAP. This is a consequence of its important commercial sector (21.6%), as well as other important employment in services oriented to tourism such as hotels, restaurants and bars (6.9%), and personal services (7.1%).

The economically active population of Tijuana has the highest educational level among the border cities (8.4 years), and as high as that of the EAP of Mexico City. However, the most striking aspect of Tijuana is its clear economic superiority in terms of income with respect to the other six centers. The average monthly income was equivalent to \$345 U.S. dollars at the end of 1989 and half of the EAP had an income above \$249 U.S. dollars, this is, 2.35 higher than the minimum wage. Furthermore, one-fourth of the EAP had an income four times higher than the minimum wage.

In terms of education and income, the panorama of Tijuana appears to be more attractive compared with the other border cities. Nevertheless, the paradox of Tijuana is that the high income of the population is not related with a high proportion of wage labor.⁶

⁶ Table 2 shows wage and piece work together. Tijuana has the lowest level of wage

Moreover, the working class with a fixed wage salary is not characterized by a high involvement in large enterprises as is the case in the other border cities (36.2%). Even worse, and perhaps the most remarkable feature of Tijuana after high incomes, is that this border city has the most unprotected wage working class among all the urban centers considered in this analysis. In Tijuana, 37.8% of the EAP receiving a wage did not have any kind of social security, such as IMSS or ISSSTE.

The importance of self-employment (17.0%),⁷ piece work and commission (7.8%), and work in the USA (7.8%) is related to the high average incomes. The relevance of self-employment and piece work can also explain the large percentage of EAP working more than 48 hours a week (19.8%). Thus, we can hypothesize that Tijuana shows an employment situation where self-employment and piece work, besides offering more work flexibility, seem to economically recompense a greater investment in hours worked.⁸

The above does not mean for Tijuana that self-employment is always desirable. The distribution of income shows that the lowest 25% of the EAP is not economically different from the other border cities. Therefore, we can conclude that Tijuana is a city in which the risk of impoverishment is the same as in any other city; but the likelihood for economic improvement is higher than elsewhere.

Undoubtedly, the higher income of the EAP in Tijuana is also a consequence of the advantages of being able to capitalize on the border location oriented to southern California (one of the richest areas in the USA), not only by producing economic activities oriented to the consumers from the other side of border but also by direct participation in the U.S. labor market.

In general, the distribution of the EAP of Tijuana by economic sectors does not greatly differ from that of Ciudad Juárez, with the

labor force among the border cities (64.2%) and the highest level of piece work (7.8%).

7 It is important to observe that the presence of self-employment does not show great differences among the seven cities, ranging from 13.8% in Matamoros to 18.8% in Guadalajara. Therefore, self-employment in Mexican urban employment does not seem to depend heavily on the particular economic characteristics of each city.

8 In a regression analysis made by Rene Zenteno, it was observed that the probability of a worker of obtaining an income higher than the average, is higher among self-employed, workers and piece workers than for wage workers. This results after controlling the effects of variables such as sex, age, education, occupation, industry, etc.

exception of the industries related to the MEI and construction. Employment economic structures of both border cities do not reflect a high degree of specialization as that shown by Nuevo Laredo and Matamoros.

Conclusions

The descriptive analysis presented in this paper illustrates the manifold employment situations along the Mexican northern border. The characterization of the four border urban centers has been expressed in terms of the concept of opportunity structures. Each of the four centers represents a particular constellation of work opportunities. In Matamoros, for example, the strong presence of the maquiladoras opens the possibilities to get a decent job as wage labor in terms of social security and income; however, there exist few working opportunities beyond the secondary sector (including the United States) in comparison with Tijuana, Ciudad Juárez and Nuevo Laredo.

The functioning of any labor market represents the incessant bringing together of jobs and people. It is a complex and dynamic process but particularly on the U.S.-Mexican border, for opportunity structures encompass both sides of the border and the configuration of work positions may change quite markedly over a short period of time. It can be generalized that the employment opportunity structure at this moment for the Mexican border cities depends on two elements. On the one hand, there is the presence or absence of the MEI and the result of the interaction of its primacy with the rest of an urban border economy. Thus, maquiladora primacy leads to defining features of many other employment situations, such as the amount of wage labor covered by social security and the likelihood of working in large-scale enterprises. On the other hand, there are the advantages and disadvantages derived from the U.S. border economy, including direct employment in it. Although employment conditions in Tijuana are not the best along the border, aside from income this city is an excellent example of a border economy taking successful advantage both of U.S. consumers and participation in the U.S. labor market.

Along with these two elements, the size of the Mexican urban center plays an important role in the degree of economic specialization, and therefore in its employment characteristics. Nuevo Laredo and Matamoros, both cities with 300,000 or fewer inhabitants, are also the cities with the highest degree of specialization in their labor force; the first one for the production of services and the second one

for maquiladora production. Tijuana and Ciudad Juárez, around 800,000 each, manifest more diversified opportunity structures, even as they exhibit different labor patterns.

This has been only one step in our understanding of the opportunity structures and labor markets along the U.S.-Mexican border. The ENEU data in themselves cannot answer all the important questions regarding the functioning of the Mexican metropolitan centers positioned on the border, and the complex opportunity structures they present.

There are many aspects of labor and opportunity structure on the border that cannot be understood adequately without going beyond already collected and available data. We believe it is important to go beyond conventional random sampling approaches, and try to obtain, for example, data on kinship networks. By interviewing key members of social networks of a trans-border nature we not only can obtain data on their present functioning but also longitudinal data from earlier periods when the networks were in operation. In particular, we would like to apply the concept of social networks not simply to individuals and households but also to organizations of various kinds. We have in mind manufacturing enterprises other than the well-studied maquiladoras, the numerous commercial enterprises relying on customers on both sides of the border, as well as specific kinds of services. This last would include health enterprises (e.g., hospital and clinics) educational organizations (from day care to higher education) and various religious and fraternal organizations.

This kind of approach will require methodological innovations and conceptual and theoretical approaches quite different from the orthodox, individual-centered perspective of survey research. However, this diversity of data and the variety of methodologies needed to obtain them reflect our belief that the border is a distinctive and singular environment, and as such it challenges us to originate appropriate innovative ways of dealing with it. But in ending we have once again fallen into the trap we warned of at the beginning of this paper; referring to the border in singular rather than plural terms. In a fundamental sense, there is not one labor opportunity structure but many. One way or another, we must always be sensitive to this fact. From research designs to policy formulations, this variety always must be acknowledged and taken into consideration. Of course, the presentation has been limited to the Mexican side. It is essential that we be able to have comparable data for the U.S. side for the same time period, something that still is lacking in nearly all border studies.

References

- Alonso, Jorge,** Estado y burguesía regional: la disputa en torno a la zona libre de Baja California, 1977-1986 . Master Thesis in Regional Development. Tijuana, El Colegio de la Frontera Norte, 1988.
- Bustamante, Jorge,** El Programa Fronterizo de Maquiladoras: observaciones para una evaluación . *Foro Internacional*, 16(2). México, 1975. pp. 183-204.
- Carrillo, Jorge and Alberto Hernández,** *Mujeres fronterizas en la industria maquiladora*. México City, SEP-CEFNOEMEX, 1985.
- Cruz, Rodolfo and Renzo Zenteno,** La participación femenina en la actividad económica de la frontera norte: Tijuana, Ciudad Juárez, Nuevo Laredo y Matamoros , in *Memorias de la Tercera Reunión Nacional sobre la Investigación Demográfica en México*. México City, UNAM-SOMEDE, 1987. pp. 587-591.
- Hernández Kelly, Patricia,** *For We Are Sold, land My People: Women and Industry on Mexico's Northern Frontier*. Albany, State University of New York Press, 1983.
- Iglesias, Norma,** *La flor más bella de la maquiladora*. México City, SEP-CEFNOEMEX, 1986.
- INEGI-SPP, *Estadísticas de la Industria Maquiladora de Exportación*. México City, INEGI, 1990.
- Pedrero, Mercedes,** La participación de la población en cuatro ciudades fronterizas en actividades económicas. Algunos resultados de la Encuesta Nacional de Empleo Urbano . Paper presented in the Simposio Binacional sobre Población en la Frontera México-Estados Unidos. Tijuana, El Colegio de la Frontera Norte, 1987.
- Zenteno, Renzo,** Migración hacia la frontera norte de México: Tijuana, B.C. , Master thesis in Demography. Mexico City, El Colegio de México, 1989.
- Zenteno, Renzo,** The Informally Employed: The Case of a Mexican Northern Border City . Paper presented in the Twelfth Annual ILASSA Student Conference on Latin America. Austin, University of Texas at Austin, 1992.