

Perhaps a Blessing: Skills and Contributions of Recent Mexican Immigrants in the Rural Midwest

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Using a survey instrument with 23 industrial skill descriptions and asking Mexican immigrants to rate their extent of experience, researchers found that immigrants in Marshalltown, Iowa, have much breadth and some depth of experience in four major industrial skills categories: communications, construction, industrial service, and manufacturing. Moreover, the city of Marshalltown has a labor force shortage, little so-called reactive ethnicity, and has been proactive in accommodation, making it different from traditional receiving communities. In contrast to the bleak portrait of human capital literature, using a contextual analysis of skills composition and the receiving community, researchers conclude that Mexican immigrants in Marshalltown, Iowa, make significant contributions and have the potential to make even more.

Keywords: *Mexico; immigration; skills; Midwest; Iowa*

To outsiders, Iowa appears to be homogenous communities of Anglo, Christian residents. Although there is some validity to this image, Iowa's immigration history resulted in a population of residents who hail from many different backgrounds. Ancestors of many Iowa residents came to the state

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because of economic difficulties in their homeland and because of economic opportunities in Iowa. In fact, the 1900 U.S. Census showed that Iowa had 300,000 people who were born in foreign countries (Schwieder, Morain, & Nielsen, 2002, p. 114). Western Europeans, English, and Welsh first came to work in the coal mines, and Eastern Europeans and Syrians came to work in the meat-packing industry (Schwieder, 1996, p. 244). Others wanted to buy land and become farmers. Regardless of country of origin, language, skills, and other types of human capital, Iowa's immigrants have a long history of making substantial contributions to the state.

Similar to their European predecessors, Mexican immigrants coming to Iowa today are fleeing poor economic conditions and looking forward to a better life for themselves and their families. Iowa has become a destination for Mexican immigrants because of changes in the meat-packing industry (Grey, 1999; Grey & Woodrick, 2002) and changes in Mexico's economy, which have destabilized the lives of many residents (Chang, 2000). As Mexican immigrants arrived and subsequent migrant flows developed, communities in the Midwest starting experiencing huge increases in immigrant populations. In 2000, the U.S. Census Bureau reported that Iowa's Hispanic/Latino population grew by 153% over 10 years, whereas seven Iowa counties experienced tenfold increases in their Latino population in the 1990s. In this article, we seek to evaluate the contributions of Mexican immigration to Iowa by focusing on the industrial skills of immigrants in one nontraditional receiving community, Marshalltown, Iowa.

Marshalltown is a thriving community with a population of approximately 26,000 residents and has the potential for continued and significant economic growth over the next 10 years. However, a workforce shortage has become a critical issue for the state (Lutz, Losch, Gonnerman, & Maitland, 2001), and a recent report (Ruth Consulting Group, 2002) predicted a continued workforce shortage problem for Marshalltown because many natives will likely leave the area and many qualified skilled people will retire. To maintain its economic vitality, Marshalltown needs workers to fill more than 5,000 new and replacement jobs (Ruth Consulting Group, 2002). Meanwhile, Mexican immigrants have become the largest growing segment of the population. The number of Latinos, mostly Mexicans, in Marshalltown rose dramatically between 1990 and 2000 from 292 to 3,523 (Burke & Goudy, 2001), making them 12.6% of the town's total population. Like the rest of the state, to sustain Marshalltown's existing industrial economy and provide for future community growth, it needs skilled workers (Grey, 2001; Ruth Consulting Group, 2002).

Quite unlike the traditional receiving communities in Texas and Southern California, the Mexicans who are arriving in this small city experience vastly

reduced chances for the development of a so-called reactive ethnicity, where immigrant youth form a solidarity based in opposition to the dominant society and its institutions. This process is especially problematic in the educational system, where doing well in school is negatively perceived by second- and third-generation Mexican Americans (Portes & Rumbaut, 2001, p. 285). Also, unlike other traditional receiving communities in large metropolitan areas, there is not much of an underclass culture into which the new immigrants can be subsumed. As such, there is more chance for the second and third generations to continue to work at human capital formation that is evident in lives of most first-generation Mexican immigrants and their immigrant forbearers. This is not to say that Marshalltown has received the Mexican immigrants with open arms; native reactions to the newcomers have been mixed. Iowans are concerned about the lack of English spoken by Latino newcomers, the presence of undocumented workers, and rising crime rates (Grey & Woodrick, in press). On the other hand, Grey and Woodrick (in press) pointed out that Anglo community leaders and key institutions are playing an active role in breaking down cultural and language barriers. Marshalltown has made efforts to accommodate newcomers by community leaders' willingness to learn from and engage them (Grey, 2001), having an active and innovative diversity committee, and attending travel seminars to Mexico (Baker & Grey, 2002). Thus, on the whole, Marshalltown differs from traditional receiving communities because it has a small population, labor force shortage, its Mexican and Mexican American community does not have much of an existing reactive ethnicity, and its community leaders have been proactive in the accommodation of newcomers.

Literature Review and Research Questions

The extant literature on the human capital of immigrants to the United States is vast, and much of it is concerned with the skill composition of immigrant populations and how that skill composition compares to natives, to other U.S. immigrant groups (Borjas, 1999; Camarota, 2001; Cohen, Zach, & Chiswick, 1997; Portes & Rumbaut, 2001), and to immigrants in other countries (Antecol, Cobb-Clark, & Trejo, 2003). As more and more Mexicans come to the United States, and their percentage of the whole immigrant population increases, the overall skill level of immigrants has dropped. For example, blue-collar workers increased as a percentage of the total population of immigrants during the 1990s (Greenwood & McDowell, 1999, p. 203), and there has been a decline in educated adjusted entry earnings (Duleep & Regets, 1997). Similarly, even though there was an increase in educational attainment for European/Canadian and Asian immigrants, there

was no similar increase among Latin America immigrants, and this inequality among schooling has been greater for immigrants in the past 20 years (Cohen et al., 1997). Mexican immigrants are more than 6 times as likely as natives to lack a high school education (Camarota, 2001). Not only do Mexican immigrants have lower skills compared to other immigrants groups to the United States, but they also have lower skills compared to immigrant groups in other countries. Antecol et al. (2003) compared the skills of immigrants in the United States, Canada, and Australia. By analyzing language fluency, education, income, and the observable skills of immigrants, they found that the immigrants in Australia and Canada have higher skill levels than their counterparts in the United States. They attribute the difference in skill level to the fact that U.S. immigrants have a larger share from Latin America (Antecol et al., 2003, p. 216). Perlmann and Waldinger (1998) also argued that Mexicans are at the very bottom of the skill ladder and are the largest group of an extraordinarily diverse immigrant population. As a group, the human capital literatures finds Mexican immigrants as having lower and declining skills, lower and declining formal education, and poor English language skills compared to the native population and to most other immigrant groups.

Consequently, some researchers are critical of Mexican immigration and call for a change in immigration and public policies. Borjas (2001) has concern over the declining education and skills level of successive waves of immigrants to the United States. He reasons that the skill composition of the immigrants determines the social and economic consequences of immigration for the country (Borjas, 2001, p. 19). Because of the decline in education attainment and economic performance of immigrants since the 1960s, he suspected that costs of addressing the problems they create as a large "underclass" greatly exceeds the economic gains that arise (p. 32). Borjas goes on to say that "overall, the evidence suggests that Americans would be better off if the immigrant flow were more skilled" (p. 211). Fry (1997) examined the participation of recently arrived immigrants into the U.S. labor force and found that newly arrived immigrants, the largest portion being Latino, is likely to be estranged, creating what he called a rise in "idleness." He says that this idleness indicates that new immigrants are less self-sufficient and more dependent than earlier immigrants, placing larger demands on job training and job-placement services. Fry (p. 226) went further to say that the rising estrangement of immigrant arrivals suggested that the growth of the urban underclass is fueled by immigration. In general, these authors paint a rather grim picture of the contributions made by Mexican immigration in the United States.

The goal of our research is to contribute to the existing literature on the contributions of Mexican immigration. To that goal, we argue that it is important to collect specific kinds of skills data rather than wholly depend on large-scale, macro-level types of data sources such as the U.S. census. Almost invisible in these data sets are individuals who possess industrial skills and who may be skilled but do not have much formal education and have not been gainfully employed. Formal education and earnings are often used as a measure of skill; therefore, these individuals would not be recognized as skilled, not because they lack knowledge and know-how but because of the economic situation in their home countries. Also, missing from such data sources and analyses thereof is a contextual approach in which immigrant skills are assessed while taking into consideration characteristics of the local receiving community. In some cases, so-called lower skills (e.g., industrial skills) being introduced into a community could revitalize it by having immigrants working and living there, particularly if that community is shrinking. Making global generalizations about the contributions made by Mexican immigrants may cover up specific contexts in which persons seen as lower skilled may, in fact, be able to make substantial contributions to certain communities.

To provide a more accurate assessment of the impact and potential impact of Mexican immigration, in this article, we present an analysis of the industrial skills generally required by industry in the United States and evident in one group of Mexican immigrants in a small city in the Midwest, Marshalltown, Iowa. Studies at national (U.S. Department of Labor, 2000), regional (Iowa Department of Economic Development, 2000), and local levels (Ruth Consulting Group, 2002) show a need for workers in their respective communities who are technologically literate in what is commonly referred to as industrial skills. Industrial skills can be categorized into the following four areas: communications, construction, industrial service, and manufacturing. These categories are not all-encompassing. However, they cover the majority of skills used in most industrial jobs in the United States today and in the anticipated future. First, we present some demographic data on the gender, age, and formal education levels of the participants. Then we report on the breadth of experience Mexican immigrant men and women have in the four major categories of industrial skills. Following this, we discuss the depth of experience of the Mexican men and women in the 23 specific industrial skills. Finally, we argue that, in some cases, the types of local and contextualized skills data we collected and analyzed better evaluate the contributions of Mexican immigration than macro-level, nationwide social science research. Through an analysis of the industrial skills of Mexican immigrants and taking into consideration the characteristics of the receiving community, we conclude that Mexican immigration is making substantial

contributions in Marshalltown, Iowa, and has the potential to make even more.

Method

The primary data-collection method in this study was a survey instrument, written in Spanish and proofread by three Spanish-English bilingual-speaking individuals from the University of Northern Iowa academic community. The instrument was used to collect data concerning the levels of experience Mexican immigrants had in certain industrial skills. It comprised a list of 23 items, each being a skill description compiled from existing literature on what is needed by industry on the national and state levels, as well as in the local Marshalltown community (Iowa Department of Economic Development, 2000; Iowa Department of Education, 1999; Ruth Consulting Group, 2002; U.S. Department of Labor, 2000). The 23 skills are of the industrial trades in nature and were placed on the survey into the following four general categories: communications, construction, industrial service, and manufacturing. Adjacent to each skill description was a set of Likert-type scales, in which on a scale of 1 to 5, participants were asked to rate the extent of practice they had in each skill: 1 (*less than 1 year*), 2 (*1 to 2 years*), 3 (*3 to 5 years*), 4 (*6 to 10 years*), 5 (*more than 10 years*).

Population and Sampling

According to the U.S. Census Bureau (2000), there are approximately 2,000 working-age Mexican immigrants living in the Marshalltown area.¹ A two-tiered sampling approach was used. First, access was gained to a local meat-packing plant where immigrants make up most of plant's workforce (Grey, 2000), and a sample of 170 Mexican immigrants was selected at random from both work shifts. An additional 42 working-age Mexican immigrants were selected as volunteers from congregations of two separate church services at a local Catholic parish. According to Fowler (1993), a sample of 212 is more than large enough to represent and make reasonable inferences about the total population of 2,000.

In the meat-packing plant, we administered the survey in 20 small groups of approximately 10 persons each gathered together in a meeting room. The 20 half-hour survey sessions took place on different shifts, during break or other nonproduction time, using a trained Spanish interpreter and a classroom administering technique. For each survey session, the interpreter explained the purpose and instructions for the survey and read aloud the survey items one at a time to the participants. Other interpreters provided by the

company gave individual help for participants who claimed to be illiterate or had trouble reading the instrument.

For administering the survey in the church, 42 volunteers were elicited. The surveys took place on two different days immediately following a church service, one on a Saturday night, the other on the following Sunday morning. As with the plant survey, a Spanish interpreter read aloud the survey one item at a time to the participants after an explanation of its purpose and instructions.

Data Analysis

After the surveys were collected, the data were entered into a statistical analysis software program. On entry, the following three sets of data were analyzed using simple frequency distributions and cross-tabulations by gender: demographics, breadth of skills, and depth of skills. Demographics of the sample were described by gender groups, age groups, and educational levels. The sample's breadth of skill was analyzed by ranking each of the specific example skills within the four major categories of industrial skills by the percentage of Mexican immigrant men and women with 1 or more years of experience. The sample's depth of skills was analyzed by ranking the top 10 industrial skills by the percentage of Mexican immigrant men and women with experience on the following three levels: (a) 3 or more years of experience, (b) 6 or more years of experience, and (c) more than 10 years of experience in the 23 specific industrial skills.

Assumptions, Biases, and Limitations

Anticipated generalizations, decisions, or judgments from the results of this study should be made with the following assumptions, biases, and limitations in mind. First, we assumed that, with the help of an interpreter, all participants were able to correctly interpret the survey instrument and that all responses were sincere and straightforward. Second, as opposed to identifying actual number of years of practice, we attempted to reduce the bias of self-reported data by using scales in the survey instrument to identify experience levels: 1 (*less than 1 year*), 2 (*1 to 2 years*), 3 (*3 to 5 years*), 4 (*6 to 10 years*), 5 (*more than 10 years*). Even though partially eliminated, there still was the chance of respondents exaggerating their experience. Third, the skills identified for data collection were industrial skills that the Marshelltown industrial community will need in the next 5 to 10 years (Hotek & Baker, 2002); consequently, data on other types of skills such as health care, teaching, service work, and so forth were not collected, making

men look more skilled than women. Given that we only analyzed industrial skills, we do not know, in total, what skills the immigrants possess. Fourth, we personally administered the survey to the participants and, even though we used a trained interpreter and preconstructed notes for explaining the purpose of the study and the instructions for completing the survey instrument, there remains the slight possibility of contamination and experimenter bias in the interpretation process. Finally, the population for this study was limited to immigrants in the Marshalltown area.

Results

We present an analysis of 23 specific industrial skills, generally required by industry in the United States, of one group of Mexican immigrants in a small city in the Midwest, Marshalltown, Iowa. First, we present some demographic characteristics of the group such as gender, age, and education levels. Second, we report the breadth of experience immigrants have by delineating the percentages of the sample that have one or more years of experience in the industrial skills as categorized in four major areas (communications, construction, industrial service, and manufacturing). We include how these percentages break down by gender. Third, we measure the depth of experience immigrants have by analyzing the top 10 specific skills within the following three experience levels: (a) 3 or more years, (b) 6 or more years, and (c) more than 10 years. In this way, we can look at the breadth and depth of experience the participants have in industrial skills.

Demographics

Frequency distributions illustrated in Table 1 describe demographic characteristics of gender, age groups, and educational levels of the sample population.

Gender. Out of the 212 total people surveyed, 59.4% were male and 40.6% were female, a fairly good split.

Age. The percentage of the men surveyed who fall into predetermined age groups are listed in Table 1. The oldest, at age 55 years or over, made up 7.9% of the males. Men at the ages of 45 years to 54 years accounted for 11.1%, whereas those at 35 years to 44 years accounted for 42.1%. Younger men at ages 25 years to 34 years made up 19.0%. The youngest, those under the age of 25 years, accounted for the remaining 19.8% of the men.

Table 1. Demographic Characteristics of Mexican Immigrants in the Study

	% Men (n = 126)	% Women (n = 86)
Gender	59.4	40.6
Age group		
55 years old and over	7.9	1.2
45 to 54	11.1	12.8
35 to 44	42.1	22.1
25 to 34	19.0	32.6
Younger than 25	19.8	30.2
No response	0.0	1.2
Education level		
2-year college degree or more	4.0	1.2
More than high school diploma but less than college degree	9.5	15.1
High school diploma (or equivalent)	21.4	17.4
Less than high school diploma	61.9	62.8
No response	3.1	3.5

The percentages of women that fall into the same age groups are also shown in Table 1. The oldest women, at the age of 55 years or older, made up a small 1.2%. Women at the ages of 45 to 54 years accounted for 12.8%, whereas those at the ages of 35 to 44 accounted for 22.1%. Those at the ages of 25 to 34 made up 32.6% of the females. The youngest, at 25 or less, made up a substantial 30.2%. A few women, 1.2%, did not identify their age groups.

A point of interest that emerged from this analysis is that the women were quite younger than the men. Further research may help explain why 61% of the men were 35 years old and over, whereas 62.8% of the women were 34 years old and younger.

Education. Table 1 shows what percentage of men can be categorized into certain educational levels. Of the men, 3.1% chose not to complete this item on the survey; 4.0% had a 2-year college degree or greater; 9.5% had more than a high school diploma or equivalent but less than a 2-year college degree; and 21.4% had a high school diploma or equivalent. The majority of the men, 61.9%, had less than a high school diploma.

The percentages of women that can be categorized into the same educational levels are also listed in Table 1. Of the women, 3.5% chose not to iden-

tify their educational levels; 1.2% had a 2-year college degree or more; 15.1% had more than a high school diploma or equivalent but less than a 2-year college degree; and 17.4% had a high school diploma or equivalent. The majority of the women, 62.8%, had less than a high school diploma.

An analysis of the demographics shows that our sample population was fairly split between male and female groups. Even though most men were older than the majority of women in our study, both gender groups had similar higher educational achievements. However, most of both groups had less than a high school education.

Breadth of Experience in Industrial Skills

Four Pareto diagrams shown in Figure 1 were used to compare and contrast, by rank order, the breadth of experiences men and women have within the following four categories of industrial skills: communications, construction, industrial service, and manufacturing. It is important to note that some people were multiskilled, so individuals may have had experience in any one or more of the specific skills within the communications, construction, industrial service, and manufacturing categories. Multiskilled individuals were included in all categories in which they reported having experience. Therefore, the sum of percentages presented in each diagram equal more than 100%. In what follows, we report the breadth of experience in industrial skills the Mexican immigrants have in Marshalltown, Iowa.

Communications skills. For the purpose of this study, communications is defined as using technical means to connect a sender (source of information or ideas) with a receiver. The communications process uses information as its basic input and delivers it to people or machines. Specific examples used in the study are as follows: computer operation, printed graphics, photographs, technical graphics (drafting), and telecommunications.

Figure 1 illustrates that among men and women with experience in the 5 specific communications skills, those with experience in telecommunications at 25.7% (men = 15.2%, women = 10.5%) was the largest. Printed graphics at 21.3% (men = 11.9%, women = 9.3%) was the second most frequent, followed in order by photographs at 21.0% (men = 10.3%, women = 10.5%), computer operation at 19.9% (men = 7.1%, women = 12.8%), and technical graphics at 7.9% (men = 5.6%, women = 2.3%).

Of the communications skills, the largest percentage of Mexican immigrants as a whole were skilled in telecommunications. Although men were mostly skilled in the specific example of telecommunications and more so than women, it is interesting to note that women were mostly skilled in the

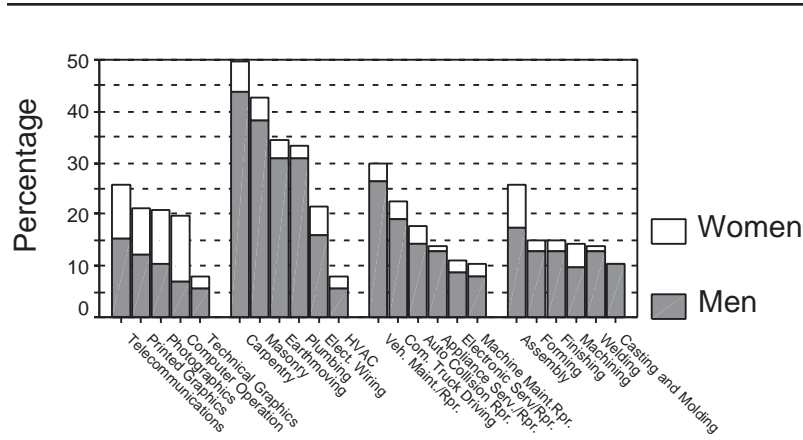


Figure 1. Breadth of experience: The 23 industrial skills in rank order by categories of communications, construction, industrial service, and manufacturing and according to the percentage of Mexican immigrants with 1 or more years of experience.

specific example of computer operations and more so than their male counterparts.

Construction skills. Construction is defined in this study as applying processes such as earthmoving equipment operation, masonry, carpentry, electrical wiring, and heating, ventilation, and air conditioning (HVAC) to produce structures that are used on the site where they are erected. These structures can be residential, commercial, or industrial buildings or they can be civil structures such as roads, dams, bridges, and pipelines.

Figure 1 charts the experiences among men and women in the six examples of construction skills. The most frequently experienced construction skill was carpentry at 49.6% (men = 43.7%, women = 5.8%). Masonry at 42.8% (men = 38.1%, women = 4.7%) was the second most frequent, followed in order by earthmoving equipment operation at 24.4% (men = 31.0%, women = 3.5%), plumbing at 33.3% (men = 31.0%, women = 2.3%), electrical wiring at 21.7% (men = 15.9%, women = 5.8%), and heating, ventilation, and air conditioning at 7.9% (men = 5.6%, women = 2.3%).

Of the construction skills, the largest percentage of Mexican immigrants were skilled in carpentry. Men accounted for most of the carpentry skills and had more practice than their women counterparts in all the construction skills. However, it is interesting to note that the 2 highest specific skills for

women were in carpentry, like men, but also in electrical wiring, not masonry, like men.

Industrial service skills. For the purpose of this study, industrial service is defined as using technical means to provide systematic restoration of a product or structure to its original working condition or provide routine lubrication or adjustment required to keep the product or structure operating as intended. Transporting a product or structure to a desired location can also be an industrial service. Examples used are automotive collision repair, vehicle maintenance repair, electronics service and repair, machine maintenance and repair, major appliance service and repair, and commercial truck driving.

Figure 1 illustrates that among men and women with experience in the 6 examples of industrial service skills, those with experience in vehicle maintenance and repair at 29.8% (men = 26.2%, women = 3.5%) was the largest. Commercial truck driving at 22.6% (men = 19.0%, women = 3.5%) was the second most frequent, followed in order by automotive collision repair at 17.8% (men = 14.3%, women = 3.5%), major appliance service and repair at 13.9% (men = 12.7%, women = 1.2%), electronics service repair at 11.1% (men = 8.7%, women = 2.3%), and machine maintenance and repair at 10.4% (men = 7.9%, women = 2.3%).

Of the industrial service skills, the largest percentage of Mexican immigrants were skilled in vehicle maintenance and repair. Men accounted for most of vehicle maintenance and repair skills and had more practice than their women counterparts in all the industrial service skills. However, it is worth noting from further data analysis that vehicle maintenance and repair, commercial truck driving, and automotive collision repair skills of women are dispersed among four multiskilled women. This did not happen in any of the other three categories of skills.

Manufacturing skills. Manufacturing is defined in this study as applying processes such as casting and molding, forming, machining, welding, assembly, and finishing to change the form of materials to add to their worth and converting raw materials to industrial goods that can be further converted into consumer and industrial products.

Figure 1 charts the experiences among men and women in the 6 examples of manufacturing skills. The most frequently experienced manufacturing skill was assembly at 25.7% (men = 17.5%, women = 8.1%). Forming at 15.1% (men = 12.7%, women = 2.3%) and finishing at 15.1% (men = 12.7%, women = 2.3%) tied for the second most frequent, followed closely by machining at 14.3% (men = 9.5%, women = 4.7%) and welding at 13.9% (men =

12.7%, women = 1.2%). Casting and molding at 10.4% (men = 10.3%, women = 0.0%) was the least frequently experienced manufacturing skill.

Of the manufacturing skills, the largest percentage of Mexican immigrants had experience in assembly. Men accounted for most of the assembly skills and had more practice than their women counterparts in all the manufacturing skills. However, it is worth noting that 8.1% of the women were experienced in assembly skills, twice or more than any of the other manufacturing skills.

Depth of Experience in Industrial Skills

As indicated in the preceding section, Mexican immigrants in Marshalltown, Iowa, have a breadth of experience in industrial skills. Below, we discuss just how much experience they have in these skills. This is important because we see how much the Mexican immigrants can offer to a community not only in the breadth but also in the depth of their experience in industrial skills. The depth of their experience is presented as a result of ranking the top 10 industrial skills by the percentage of men and women with experience on the following three separate levels: (a) 3 or more years of experience, (b) 6 or more years of experience, and (c) more than 10 years of experience.

Three or more years of experience. The first level of depth was analyzed by identifying the percentage of Mexican immigrant men and women with 3 or more years of experience in each of the 23 industrial skills. From that, the top 10 skills were ranked as illustrated in Figure 2.

Of the top 10 skills with 3 or more years experience, their order of rank are carpentry at 30.1% (men = 25.4%, women = 4.7%), earthmoving equipment operation at 20.2% (men = 19.0%, women = 1.2%), masonry at 20.2% (men = 16.7%, women = 3.5%), plumbing at 17.0% (men = 15.8%, women = 1.2%), electrical wiring at 16.2% (men = 12.7%, women = 3.5%), telecommunications at 15.9% (men = 11.2%, women = 4.7%), commercial truck driving at 14.3% (men = 12.0%, women = 2.3%), printed graphics at 14.2% (men = 7.2%, women = 7.0%), computer operation at 12.7% (men = 5.6%, women = 7.0%), and photographics at 12.3% (men = 6.4%, women = 5.9%).

Construction skills are most apparent at the first level of depth, the most obvious standout being carpentry. When including earthmoving equipment operation, masonry, plumbing, and electrical wiring, the first 5 of the top 10 skills are in the construction category. It is also interesting to note that 4 others of the top 10 are in the communications skills category. They are telecom-

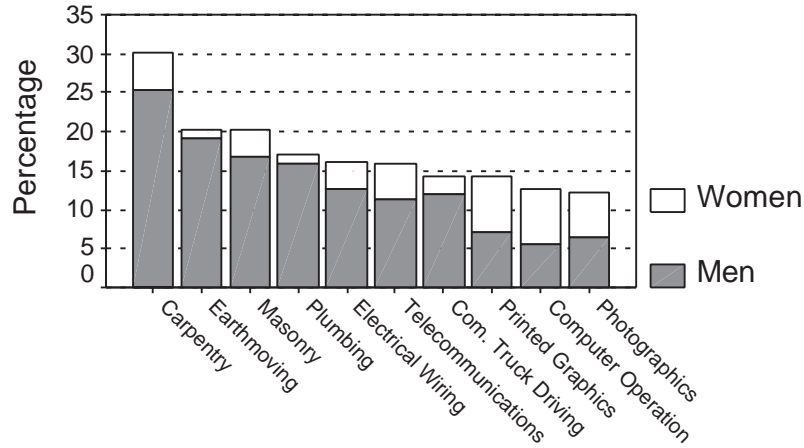


Figure 2. Depth of experience—first level: The top 10 industrial skills in rank order according to the percentage of Mexican immigrants with 3 or more years of experience.

munications, printed graphics, computer operation, and photographics. Women contribute to much of the experience in those 4 communications skills, and in fact are included in all skills in the first level of depth.

Six or more years of experience. The second level of depth was analyzed by identifying the percentage of Mexican immigrant men and women with 6 or more years of experience in each of the 23 industrial skills. From that, the top 10 skills were ranked as illustrated in Figure 3.

The order of rank for the top 10 skills with 6 or more years experience are carpentry at 12.3% (men = 11.1%, women = 1.2%), telecommunications at 11.9% (men = 7.2%, women = 4.7%), earthmoving equipment operation at 11.1% (men = 11.1%, women = 0.0%), plumbing at 7.9% (men = 7.9%, women = 0.0%), printed graphics at 7.8% (men = 4.0%, women = 3.5%), commercial truck driving at 7.2% (men = 7.2%, women = 0.0%), electrical wiring at 6.0% (men = 2.4%, women = 3.5%), computer operation at 6.0% (men = 4.8%, women = 1.2%), masonry at 5.6% (men = 5.6%, women = 0.0%), and vehicle maintenance and repair at 4.8% (men = 4.8%, women = 0.0%).

The data show that at the second level of depth, the 3 skills most apparent are carpentry, telecommunications, and earthmoving equipment operation. It is interesting to note that women account for much of the experience in the

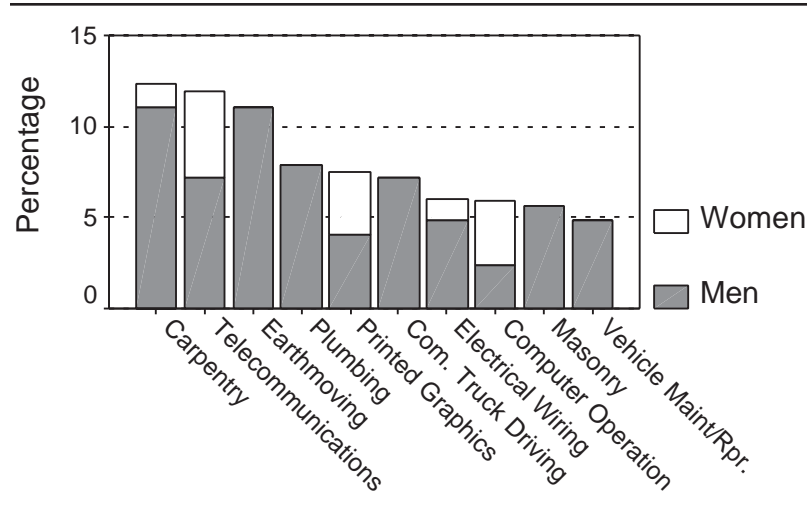


Figure 3. Depth of experience—second level: The top 10 industrial skills in rank order according to the percentage of Mexican immigrants with 6 or more years of experience.

telecommunications skill. Women also make noteworthy contributions to the second level of depth in printed graphics and computer operation.

More than 10 years of experience. The third level of depth was analyzed by identifying the percentage of Mexican immigrant men and women with more than 10 years of experience in each of the 23 industrial skills. From that, the top 10 skills were ranked as illustrated in Figure 4.

Of the top 10 skills with more than 10 years of experience, their order of rank are telecommunications at 10.3% (men = 5.6%, women = 4.7%), earthmoving equipment operation at 6.3% (men = 6.3%, women = 0.0%), commercial truck driving at 4.8% (men = 4.8%, women = 0.0%), carpentry at 4.4% (men = 3.2%, women = 1.2%), electrical wiring at 3.6% (men = 2.4%, women = 1.2%), electronics service and repair at 3.2% (men = 3.2%, women = 0.0%), casting and molding at 3.2% (men = 3.2%, women = 0.0%), printed graphics at 3.1% (men = 0.8%, women = 2.3%), masonry at 2.4% (men = 2.4%, women = 0.0%), and assembly at 2.4% (men = 2.4%, women = 0.0%).

The most apparent skill at the third level of depth is telecommunications. Interesting enough is the fact that women account for almost half of the experience in telecommunications, and a majority of the experience in the skill of printed graphics. Women also are included in the skills of carpentry and electrical wiring.

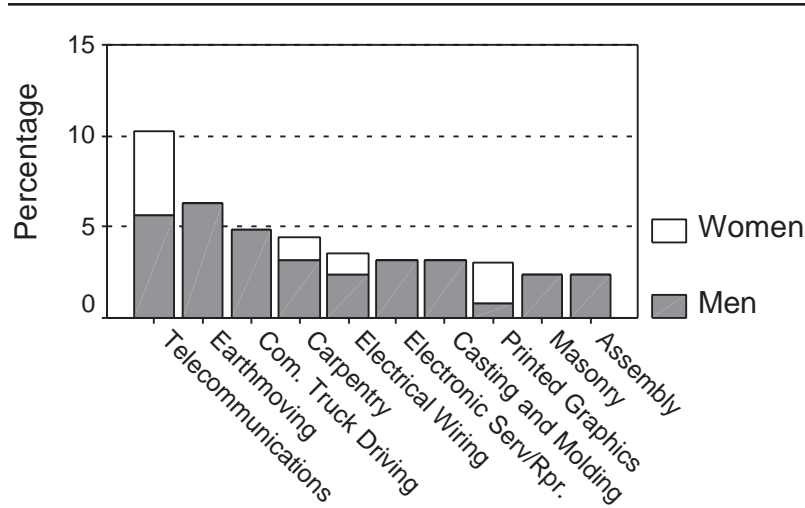


Figure 4. Depth of experience—third level: The top 10 industrial skills in rank order according to the percentage of Mexican immigrants with more than 10 years of experience.

In summary, we analyzed the depth of experience in the industrial skills of Mexican immigrants in Marshalltown by ranking, on three separate levels, the top 10 industrial skills by the percentage of men and women with experience in each of the 23 industrial skills. At the first level of depth, which is with 3 or more years of experience, the skills most apparent are those listed in the major categories of construction and communications. At the second level of depth, which is with 6 or more years of experience, the 3 most evident skills are carpentry, telecommunications, and earthmoving equipment operation. At the third level of depth, which is with more than 10 years of experience, the skill of telecommunications is most evident. Although data collected for this article only include industrial skills, not skills in areas in which most women have worked, it is interesting to note that women do have some industrial skills. As a whole, skills within the categories of construction and communications are those with which the immigrants have the most depth of experience.

Discussion

Iowa's immigration history shows that the ancestors of today's residents came from many parts of the world primarily because of economic difficul-

ties in their homeland and economic opportunities in Iowa. Regardless of country of origin, specific skills, and their other human capital, Iowa's immigrants have a long history of making substantial contributions to the state (Calkin, 1962; Schwieder, 1996; Schwieder et al., 2002). The purpose of this study was to evaluate the contributions of recent Mexican immigrants to Iowa by focusing on the breadth and depth of immigrants' experience in industrial skills in one nontraditional receiving community, Marshalltown, Iowa. Our results show that Mexican immigrants in Marshalltown have much breadth of experience in four general categories of industrial skills—communications, construction, industrial service, and manufacturing. Specifically, Mexican immigrants had breadth of experience in the skills of carpentry (49.6%), followed by masonry (42.8%), then earthmoving equipment operation (34.4%), plumbing (33.3%), and vehicle maintenance and repair (29.8%). As a way to discuss their depth of experience, we rank the top 10 industrial skills by the percentage of men and women with experience on three separate levels. At the first level of depth, which is with 3 or more years of experience, the skills most apparent are those listed in the major categories of construction and communications (see Figure 2). At the second level of depth, which is with 6 or more years of experience, the 3 most evident specific skills are carpentry, telecommunications, and earthmoving equipment operation (see Figure 3). At the third level of depth, which is with more than 10 years of experience, the skill of telecommunications is most evident (see Figure 4). Men are most likely to be involved in and have the most experience in construction skills, although women are most likely to be involved in and have the most experience in communication skills. Collecting specific kinds of skills data at a local level rather than large-scale data at the macro and/or national level makes visible individuals who possess industrial skills but who do not have much formal education, high earnings, or language fluency—those so-called observable variables used in most research that evaluates the skills composition of immigrants. Similar to earlier immigrants to Iowa, Mexican immigrants can and do contribute to the Marshalltown community with much breadth and some depth of experience in industrial skills, particularly in the area of construction. This conclusion was only obtainable through a localized skill analysis.

Also important to our discussion is the consideration of the local receiving community. Unlike most traditional receiving communities, Marshalltown's population is small, its workforce shrinking, and it needs residents. Likewise, for the development of a productive immigrant workforce and community, Marshalltown has little reactive ethnicity or oppositional culture within the immigrant community (Portes & Rumbaut, 2001), which is common in the

children and grandchildren of Mexicans in traditional receiving communities, particularly those with a so-called urban underclass. In addition, Marshalltown has been proactive in working toward accommodation of the newcomers (Grey, 2001). In other work (Hotek & Baker, 2002, 2003), we suggested that Marshalltown offers bilingual, modular, and multimedia-skills-based training to immigrants that would further increase their human capital and, therefore, their contributions to the community. For these reasons, in Marshalltown, there is more chance for the second and third generations to continue to work at human capital formation that is so evident in the lives of most first-generation Mexican immigrants and in the lives of the European immigrants who preceded them a century ago. These characteristics of Marshalltown will help the new Iowans reap the rewards for their skills and hard work and experience upward mobility.

However, it is important to keep in mind that such a rapid influx of Mexican immigrants over the past 10 years has presented challenges for the Marshalltown community and will probably continue to do so. The newcomers have brought with them different languages, ethnicities, religious practices, and lifestyles. The Marshalltown school system has experienced a tremendous increase in school enrollment along with a high enrollment turnover, a huge demand for ESL classes, and inadequately prepared students (Grey & Woodrick, in press). Anglo reactions to these rapid changes are mixed. Community leaders are sometimes inundated with complaints about Mexicans who appear to disregard local norms and break laws (Baker & Grey, 2002) but are accommodating newcomers through such measures as finding ways to interact with them, forming diversity committees, and attending travel seminars to Mexico (Baker & Grey, 2002). Aware of the need for long-term commitment, Marshalltown's community leaders have worked hard at creating avenues for accommodation of the newcomers. Even though there are challenges, unlike traditional receiving communities, Marshalltown has little reactive ethnicity, no urban underclass, and has supportive community leaders. The context into which Mexican immigrants arrive undoubtedly plays an integral role in determining the range and significance of their contributions to a community. Therefore, to effectively determine immigrants' current or future contributions, it is critically important to contextualize an analysis within the receiving community.

The extant human capital literature on the skills of Mexican immigrants to the United States has little disagreement over the conclusion that recent Mexican immigrants have "lower skills" in general than the native population and than other immigrant groups (Antecol et al., 2003; Borjas, 2001; Cohen et al., 1997; Portes & Rumbaut, 2001). For some authors, deriving from these data is the notion that immigration policy should be changed by raising the skill

composition of immigrants coming into the United States, which, in essence, would stop much of the legal flow of Mexican immigrants.² In contrast to the bleak portrait offered by much of this human capital literature on Mexican immigration,³ using specific and local skills data and taking into consideration the context of the specific receiving community to evaluate the contributions of Mexican immigration to the Midwest, we conclude that the Mexican immigrants in Marshalltown, Iowa, have not only made significant contributions to that community but also have the potential to make even more contributions. These kinds of data, this group of immigrants, and their nontraditional receiving community add one further and complicating critique to immigration research and immigration policy. Because of the contextually and historically embedded methodology for data collection on skills and because of the nontraditional receiving community, we found that these so-called low-skilled workers are not a problem but perhaps have become a blessing.

Notes

1. There is no way to be sure of the actual number of Mexican immigrants living in Marshalltown. In addition to those legal immigrants who do not fill out the census are those undocumented persons who do not fill out the form. In this article, we are only using U.S. census data because we have no way of knowing the whole population. In addition, *working age* means those persons between 18 and 65 years of age.

2. What effect this would have on illegal immigration is unclear. Much literature has been written on the effects of the tightening of the United States and Mexico border, and most studies show that illegal crossings have only increased as restrictions have been tightened (Fox, 2002; Orreniou, 2001).

3. Of course, not all literature offers such a bleak picture. For example, Bhagat and London (1999) found that recent immigrants represent two distinct occupational categories; one group is highly skilled and well-educated whereas the second group is characterized by low levels of skills and education. They argued that the second group, although low skilled, contribute to the U.S. economy as workers, consumers, business owners, and taxpayers. Weaver (2000, p. 292) found that even though Mexican Americans are younger, less well-educated, and earn less, they are productive, cooperative, and networking, with a strong work ethic and job satisfaction (p. 275). In addition, they have a stronger sense of work ethic higher satisfaction than Euro-Americans.

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