

THE ROLE AND TRAINING OF HISPANIC FIELD WORKERS IN CHICAGO AREA TREE CARE

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Abstract. In Chicago and its many suburbs, the problem of technology transfer to field personnel is complicated by a large contingency of Spanish-speaking workers. At present, few programs exist to meet their training needs. As a result, trees may be receiving less than optimal treatment, possibly leading to early mortality and unnecessary economic loss to the landscape, nursery and tree care companies that grow and maintain much of the private urban forest. A pilot study conducted by the author and sponsored by the University of Illinois, Department of Forestry found that the number of immigrant Hispanic workers in the Chicago area green industry was larger and more stable than previously believed. The study also found that most workers received either no training or in-house developed training in tree and plant care. Alienation, economics, education and self-esteem were also explored as factors affecting the training needs of this population.

Little has been written concerning Hispanic involvement in the green industry, and few professionally-developed plant care programs target their specific training needs. Current Hispanic participation in green industry training and certification programs is regarded as low by national organizations (14,24). This may be due more to language, social, cultural and economic factors (1,2,10,15,21,22,25,26) than to low numbers of Hispanics in the industry. Indeed, the few professionally developed training materials geared to Spanish-speaking workers have met with great success (9,18,24).

The labor crisis. The labor intensity of landscape, nursery, and tree care businesses (8,23), means that recent labor shortages and high worker turnover seriously affect the health of the industry (3,19,23). A worsening combination of economic and social factors including intense competition for unskilled workers from other industries (12,20,23), a rapidly shrinking pool of traditional U.S. workers (8,12,23), single digit unemployment (8,23), lower numbers of horticultural students (20,23), and green industry unwillingness to pay higher wages and benefits (8,12,20,23) are be-

lieved to be behind the situation.

Hispanic growth. Despite a decline in some segments of the national labor force, the number of Hispanics in the work force is likely to grow. Almost 60% of the expected growth in the national labor force to the year 2000 is expected to be attributable to Hispanics (12). During the nineties, the number of Hispanics in the general population is expected to grow by 26.8%. This number is further expected to increase by 22.1% between the years 2000 and 2010 (16).

The term "Hispanic" refers to a varied group of people from the Spanish and Portuguese speaking countries of Europe, North and South America, and the Caribbean. The majority of the Hispanic immigrants to the U.S., however, originate from Mexico. The 1990 Census revealed that Mexican nationals comprised 16.8% of the total immigrant population of the U.S. between 1981 and 1989; the single largest ethnic group from any of over 60 countries of origin (16).

Northeastern Illinois is the most economically significant area of Illinois and is serviced by several hundred nursery, landscape and tree care companies of various size (11). Illinois also has the most concentrated (5-10% of the total state population) and fastest growing (up 3% since 1980) Hispanic population in the entire 13-state Midwestern census region (16). The counties making up the study area were: Cook (including Chicago proper) and Kane, both with Hispanic populations between 10 and 25%; and DuPage, Kendall, Lake, McHenry, and Will, all with Hispanic populations between 3 and 10% (16).

Instrumentation

Stage I. Stage I of the project consisted of a fully scripted three-minute telephone interview developed by the author. Personnel managers at

randomly selected companies were interviewed regarding the number of Hispanic workers they employed, the type of training utilized, and the rate of worker retention from year to year. The goal was to establish if Hispanic workers were present in sufficient numbers to warrant further investigation.

Stage II. Stage II of the project consisted of on-site interviews with workers, where the Spanish Skills Placement Test (SSPT), the Culture Free Self-esteem Inventory (CFSEI) and a Personal History Questionnaire (PHQ) were administered. The SSPT was developed, and is used extensively, by literacy and English as a Second Language (ESL) groups in Northeastern Illinois (6). The instrument consists of 7 progressively more difficult Competency Forms. The test measured basic skills including reading, writing, and math skills in Spanish among the workers. Since completion of the 6th grade (U.S. system) is considered pre-General Equivalency Degree (GED) by ESL standards (6), the SSPT covers only skills that would normally be acquired through this grade.

The CFSEI is a nationally recognized self-esteem instrument of established reliability and validity (4), composed of several forms adapted to different age groups. This study of Hispanic workers required a combination of the 40-item Form AD for adults covering sub-categories of Social, General, and Personal Self-Esteem, as well as a measure of defensiveness in response (the Lie Score); and an additional 10 items on Academic Self-Esteem

from Form A, which measured the self-esteem developed during workers' school years. A description of the subtest categories, as found in the CFSEI Examiner's Manual (4), is listed in Table 1.

The 75 item, multiple choice PHQ was developed by the author and gathered information on the subject's background including personal history, industry experiences, and exposure to a variety of social, cultural, and economic stimuli that are commonly cited in sociological literature. This instrument was field tested for clarity, readability, and range of response with workers at several companies before it was finalized.

Methodology

Stage I: telephone interviews. The original database (811 files) was collected from 1992 Illinois telephone directories on a compact disk. The files gathered resulted from a sort by county, and type of business within the green industry business (landscape, nursery, and tree care). Each file was comprised of a company name, address, and phone number. Files were downloaded, then uniformly formatted for ease of use and analysis. Repeat and partial files were removed from the database leaving 609 active files. Approximately one third (202) of these files were chosen randomly. Advance letters were sent out describing the study and its goals, assuring confidentiality, encouraging participation, and describing when a follow-up telephone call would be placed. Telephone contact was made with the sample and scripted interviews conducted with

Table 1. Description of CFSEI subtest categories

Category	Description
Academic self-esteem	(i.e., school-related self-esteem) is the aspect of self-esteem that refers to the individual's perceptions of his ability to succeed academically.
General self-esteem	is the aspect of self-esteem that refers to the individual's overall perception of his worth.
Personal self-esteem	is the aspect of self-esteem that refers to the individual's most intimate perceptions of self-worth.
Social self-esteem	is the aspect of self-esteem that refers to the individual's perceptions of the quality of his relationship with peers.
Lie subtest	measures defensiveness. Individuals who respond defensively to self-esteem items refuse to ascribe to themselves characteristics of a generally valid but socially unacceptable nature.

Table 2. Description of the telephone interview participants.

Companies interviewed	93
Total employees	1966
Average employees per site	21
Companies with Hispanics	68
Total Hispanic employees	1041
Average Hispanics per company	11
Work force comprised of Hispanics	53%

personnel managers. Further erroneous files were eliminated during this stage, leaving a remaining sample of 133 files. The refusal rate was 30%, leaving 93 companies that were interviewed by telephone. See Table 2 for a summary. These 93 companies constituted the initial accepting sample, as well as the pool from which later on-site interviewees would be drawn.

Stage II: on-site interviews. Stage II consisted of, in-depth interviews with managers and workers at the company site. By operating in a familiar setting, it was hoped that stress could be minimized, thus reducing the disruptive effects of a new environment on participants. Of the 93 companies surveyed in the initial accepting sample, 68 reported employing Hispanics, 7 were removed

because they declined to participate in Stage II of the project. Another 7 companies were removed because they indicated three or fewer Hispanic workers. These companies were represented in the telephone survey, however, because of the large study area, time constraints and limited resources of the pilot study, costs associated with on-site visits to very small companies could not be justified. All of the remaining 54 companies were contacted and questioned about their willingness to participate in the three hour long process. Of these, a 15 company sample-of-convenience constituted the secondary accepting sample. The secondary sample was comprised of volunteering companies, an unfortunate but unavailable threat to validity. On each site, one or two crews of workers were selected by managers to be interviewed. See Table 3 for a summary.

While on site, managers and Hispanic workers were interviewed separately. Managers (n = 14) were interviewed in English. One manager was unavailable for the interview when we arrived. Workers (n = 65) were interviewed separately in Spanish by a native Spanish speaking, male researcher of Mexican decent. The CFSEI and the PHQ instruments were administered verbally by

Table 3. Description of the on-site interview participants.

Company	Managers interviewed	Total workers at site	Hispanic workers at site	% Hispanic workers	Hispanic workers interviewed	% Hispanic interviewed
1	1	5	5	11	4	80
2	1	6	5	83	3	60
3	1	10	8	80	6	75
4	1	25	3	12	2	67
5	1	15	12	80	5	42
6	1	135	40	30	3	8
7	1	28	27	96	4	15
8	1	20	20	100	2	10
9	1	6	5	67	5	100
10	1	12	12	100	6	50
11	1	12	12	100	10	83
12	1	12	12	100	4	7
13	1	60	60	100	4	7
14	1	25	15	60	4	27
15	0	8	8	100	1	13
Totals	14	379	244	64.4	65	26.6

the interviewer to the participating workers at each site. The SSPT was self-administered by each worker. The SSPT was, however, read, as per contingency specifications, to those workers who either volunteered that they were illiterate, or were identified by others as being so.

Testing arrangements varied greatly in response to the convenience of managers, and the facilities found at each site. Facilities included offices, equipment garages, homes, company lunchrooms, and in one case, leaning up against a pickup truck. Appointments for interviews were also at the discretion of managers. Although the researchers preferred morning interviews while workers were well rested, appointments with workers were often scheduled by manager after work, when subjects may have been somewhat fatigued. As a result of the nature of the study, it was impossible to insure equal treatment of all subjects; a possible, but unavoidable, threat to the validity of the implications drawn from the data.

Results and Discussion

The Hispanic presence. Of the managers agreeing to be telephone interviewed during Stage I ($n = 93$), 68 (73.1%) reported employing Hispanic workers. Most managers were highly suspicious of our intentions, possibly due to a fear of government action against undocumented workers. The survey did not gather information on the immigration status of workers. Of those companies reporting Hispanic employees, 47 (69.1%) said that their work forces were composed of between 60% and 100% Hispanics.

Work force stability. The telephone survey suggested that the Hispanic worker population in the Chicago area is relatively stable. Of the companies having Hispanic workers, 56 (82.4%) reported that between 60% and 100% of their workers returned each year. On-site interviews with workers ($n = 65$) confirmed this tendency to stay in the industry and to return to the same employer each year. Workers reported a mean of 6.1 years working in the industry and a mean of 4.2 years with their current employer. The mean number of round trips made between the U.S. and the country of origin was 5.

Worker training. Nine (64.3%) of the manag-

ers surveyed during the on-site interviewing belonged to between one and four professional organizations, many of which offer training/certification materials to their members (in English). Yet, the telephone interview with companies employing Hispanic workers found that 42 companies (61.8%) used no training materials at all. On site interviews with workers reinforced this response, with 33 (50.8%) saying that they had not received any training and 21 (32.3%) saying that they had learned their skills through observing other workers in the field. This lack of training is likely due to the shortage of professionally developed training methods for Hispanics in the industry.

Wages and workweek. Almost 30 percent of the on site workers interviewed reported that they typically worked between 46 and 55 hours a week in the green industry. Exhaustive schedules in a laborious industry may help explain why workers seldom participate in English literacy or industry activities or programs after work.

For their work efforts, 20 (30.8%) of the workers, reported that they earned wages between \$4.26 and \$6.00 per hour. Another 32 (49.2%) reported wages between \$6.00 and \$8.00. Relatively low wages may partly explain why many workers shared living arrangements with friends (27.7%), or extended family (33.8%).

Isolation. Another explanation for this tendency to live in large groups is that it may help combat feelings of isolation and aid in success at finding employment. While 43 (66.2%) of the workers reported having American friends, 20 (46.5%) of them said that they never/almost never socialize with their American friends away from work. This characteristic denotes a certain alienation from the larger society, which may explain the workers' fearfulness in dealing with English speaking people and governmental agencies.

Alienation within the Hispanic community, however, was rare. Forty-nine of the workers (75.4%) said that they lived in the same neighborhood as their coworkers. Most (70.8%) carpooled to work together each day. Only two workers (3.1%) reported that they had no one with whom to discuss their personal problems while in the U.S.. Wives/girlfriends (26.2%) and extended family members (47.7%) were reported as providing this emotional

support. Workers also reported that friends (43.1%) and family (41.5%) had helped them to obtain their present job.

Education. Background information provided by Hispanic workers during on-site interviews showed that 63 (96.9%) were natives of Mexico. Of the 32 states of Mexico, 46 workers (70.8%) originated from small, agricultural towns in the three adjacent western-central states of Guanajuato (38.5%), Jalisco (23.1%) and Michoacan (9.2%). Eight (12.3%) also originated from agricultural areas of the far southern state of Oaxaca. Small, rural towns in Mexico rarely have schools past the mandatory 6th-grade level. Further schooling frequently requires that students be bused great distances, to the nearest large city. This is costly for agricultural families that need the help at home (17). It is not surprising then, that most of the individuals participating in the study reported only a few years of primary schooling.

The mean number of years of schooling reported by workers during on-site interviewing was 6.4 (SD 3.5). This information was further verified by the results of the language portion of the Spanish Skills Placement Test (SSPT). The largest single group of workers, totaling 24 (36.9%), tested out at the 6th grade level (US system). It should be noted, however, that 38 (58.5%) of the workers, tested out at the 4th grade or lower. The scores from the math portion of the SSPT were even lower, perhaps due to a deterioration of skills since last they were in school. Scores on the SSPT revealed that 45 (69.2%) of the workers were functioning at the 3rd grade or lower math level. The findings of the SSPT demonstrate the need for educational materials targeting Mexican field workers to be simplified in both format and language/math use.

Self-esteem. Given that the immigrant experience is such a difficult one (5, 22), the self-esteem of the workers was measured among the on-site participants using the Culture-Free Self-Esteem Inventories (CFSEI). Poor self-esteem has been correlated with anxiety, depression, and low academic achievement (4). The presence of any of these emotions would likely negatively affect the trainability of workers. Battle (4) relates an individual's self-esteem to their ability to perform worthwhile work. He further suggests that training programs are one means to help achieve higher self-esteem among workers.

The mean Total Self-Esteem score was of 20.9 (SD 5.40). Based on Total Scores, 28 (43.1%) of the workers could be categorized as having low to very low Total Self-Esteem. Subtests further categorized 6 (9.2%) of the workers as having low/very low General Self-Esteem; 8 (12.3%) of the workers as having low/very low Social Self-Esteem; 15 (23.1%) of the workers as having low/very low Academic Self-Esteem; and 19 (29.2%) of the workers as having low/very low Personal Self-Esteem. The scores for all areas were approximately normally distributed. See Table 4 for a summary.

Table 4 also reveals that respondents had a mean raw Lie Score of 3.8. The fact that workers scored so low on the Lie Score indicates a measure of defensiveness in their answers to the Lie item statements, and possibly to other statements, in other subtest categories of the CFSEI. Because of the questionable veracity of their responses, it is difficult to say if self esteem poses a greater obstacle to Mexican immigrant workers in the U.S. than to any other group in the general population. However, due to the critical relationship between self-esteem and learning (4), this is an area that

Table 4. Self-esteem subtest comparisons.

	Possible raw score	Mean raw score	% of Group low/very low
Total self-esteem	32	20.9	43.1
Academic self-esteem	10	7.1	23.1
General self-esteem	16	11.0	9.2
Social self-esteem	8	5.3	12.3
Personal self-esteem	8	4.7	29.2
Lie score	10	3.8	N/A

should be explored in other research efforts on this topic.

Conclusion

The goal of this project was to explore and describe the current status of Hispanics working in the production, installation and maintenance of trees in Northeastern Illinois, and to gather baseline information on some of the possible factors influencing their training. The data suggest that Mexican field workers constitute a large and stable segment of the tree care worker population in the Chicago area and that social, cultural and economic factors, in addition to language, may be limiting the success of training efforts targeting Hispanic workers in the industry.

Correlational research is needed in Illinois, and in other states with large populations of Hispanic immigrants, in order to statistically verify the findings of this pilot study. If further research confirms large numbers of immigrant Hispanic workers in tree care in other states, a more proactive position toward attracting, retaining and developing successful training materials for these workers must be adopted by the industry.

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Résumé. Dans la ville de Chicago et parmi ses nombreuses villes de banlieues, le problème du transfert technologique des connaissances vers le personnel sur le terrain est compliqué par la présence d'une large proportion de travailleurs hispanophones. À l'heure actuelle, peu de programmes existent pour subvenir aux besoins de formation des travailleurs hispaniques de l'industrie horticole. Une étude a été menée afin de recueillir des informations de bases sur le nombre de travailleurs de l'industrie, le taux de renouvellement du personnel, le degré courant de compétence et les obstacles possibles à leur formation. Les questions de l'éloignement, de l'analphabétisme, du manque d'estime personnelle et celles de nature économique ont aussi été prises en considération.

Zusammenfassung. In Chicago und vielen seiner Vororte ist das Problem des Technologietransfers von Vorgesetzten zum Feldpersonal durch die hohe Anzahl an spanischsprechenden Arbeitern kompliziert geworden. Gegenwärtig gibt es nur wenige Programme, die auf die Ausbildungsbedürfnisse der spanischen Arbeiter in der 'Grünen Industrie' eingehen. Es wurde ein Forschungsvorhaben eingeleitet, um grundsätzlich Informationen über die Anzahl der Spanier in Betrieben zu erhalten, desweiteren ihre Fluktuation, ihr gegenwärtiger Ausbildungsstand und mögliche Behinderungen in ihrer Ausbildung. Themen, wie Entfremdung, Wirtschaft, Bildungsgrad und geringe Selbstachtung wurden ebenfalls behandelt.