CHARACTERISTICS OF THE CRAFT WORKFORCE

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ABSTRACT: The heart of the competitiveness in the U.S. construction industry has always been the skilled workforce that has been available to implement the technology of construction. During the late 1980s, many experts predicted severe shortages in the skilled workforce by the year 2000. This perception was based on demographic shifts in our population and the demands for workers in other areas of the economy. Based on this perception, a study was undertaken to examine the issues and survey a broad cross section of the craft workforce. This paper describes the results of a questionnaire administered to more than 4,600 craftworkers throughout the United States concerning their perceptions of their job, career, and employment conditions. The results of this questionnaire provide new insight into how craftworkers perceive job satisfaction, satisfaction with the financial aspects of construction work, career orientation, and pride. The study provides a model for individual companies to develop similar surveys to assess their employee's perceptions. The survey provided an opportunity to gather a broad range of information regarding the perceptions of our current craft workforce. The insights provided by this survey should provide a basis to address problems that may arise with craftworker shortages in the United States. A better knowledge of the perceptions of the craft workforce results in the potential to improve the management's ability to get the best out of the construction workforce, retain skills that currently exist, and build a strong and competitive future workforce.

INTRODUCTION

The construction industry faces many challenges. Many of these challenges arise through a need to maintain a skilled and competitive craft workforce. The source of these challenges are the changing demographic characteristics of the United States and the changes that have occurred in the economic, social, organizational, and technological environment in the United States during the last 20 years. In an earlier paper, Federle et al. (1993) asserted that to effectively address the challenges facing the construction industry, the most competitive firms will have a thorough understanding of the characteristics of their workforce. This paper presents the results of a craft survey that identifies the characteristics of the craft workforce and addresses the attitudes and perceptions that emerged.

BACKGROUND

Several studies in the 1980s predicted severe labor shortages in the U.S. workforce (Fullerton 1989; Abramson 1987; Silvestri and Lukasiewickz 1989) for the coming decade and beyond the year 2000. The general workforce studies portrayed a period of rapid change in the workforce demographics. The construction industry also saw several predictions for the shortages being made (Construction 1990; "More" 1989; Schriener 1990). These studies portrayed a bleak picture of the future supply of craftworkers to meet the growing demand perceived at the time. This concern was widespread throughout the industry and was reinforced by regional shortages being felt in several of the trades at the time. The concern by members of the Construction Industry Institute (CII), comprising primarily large industrial owners and contractors, led them to sponsor a study aimed at learning more about the characteristics of the construction workforce. The study examined many facets of the perceived problem and included an effort to survey a large number of craftworkers on a variety of subjects. This survey was created around the model of influences, developed and reported earlier (Federle et al. 1993), of the craft workforce to gain a better understanding of the perceptions of workers toward their profession, employer, and job. This paper presents some of the more significant results of the survey.

WORKFORCE MODEL

The model was developed from personal interviews with construction industry leaders, brainstorming sessions with the CII task-force members, and a review of literature concerning career choice. It is a hybrid of previously developed career-choice models (Van Maanen and Schein 1977; Sonnenfeld 1984; Feldman 1987; Holland 1966). This model is presented in Fig. 1. A detailed discussion of the model was presented earlier (Federle et al. 1993).

This model portrays a filter through which an individual's values, interests, aspirations, perceived abilities, and perceptions about the construction industry influence whether the individual would consider a career in construction. These influences were the subject of the questionnaire. The desire for an office position or a college degree and the concern for safety are examples that act as filters for those individuals entering the next pool, the construction worker pool, or choosing a career in another industry (see the arrow leading to this career choice in Fig. 1).

In addition to influences that determine whether an individual chooses this pool, a number of other influences affect the relative size of the overall pool. These include individual and family perceptions, weather, family relations, wages (both hourly and annual), industry structure, overall industry image, educational system, and labor unions. These influences were also examined in the questionnaire administered to the craftworkers.

The model of influence presents only a starting point to a more analytical examination of the construction workforce. The issues related to recruitment, utilization, and retention are complex and dynamic. This model provides a point of departure for addressing the data needs that support a more quantitative decision support model, which in turn addresses the inevitable convolutions in the regional workforce supply and demand in the construction industry. The model provides a

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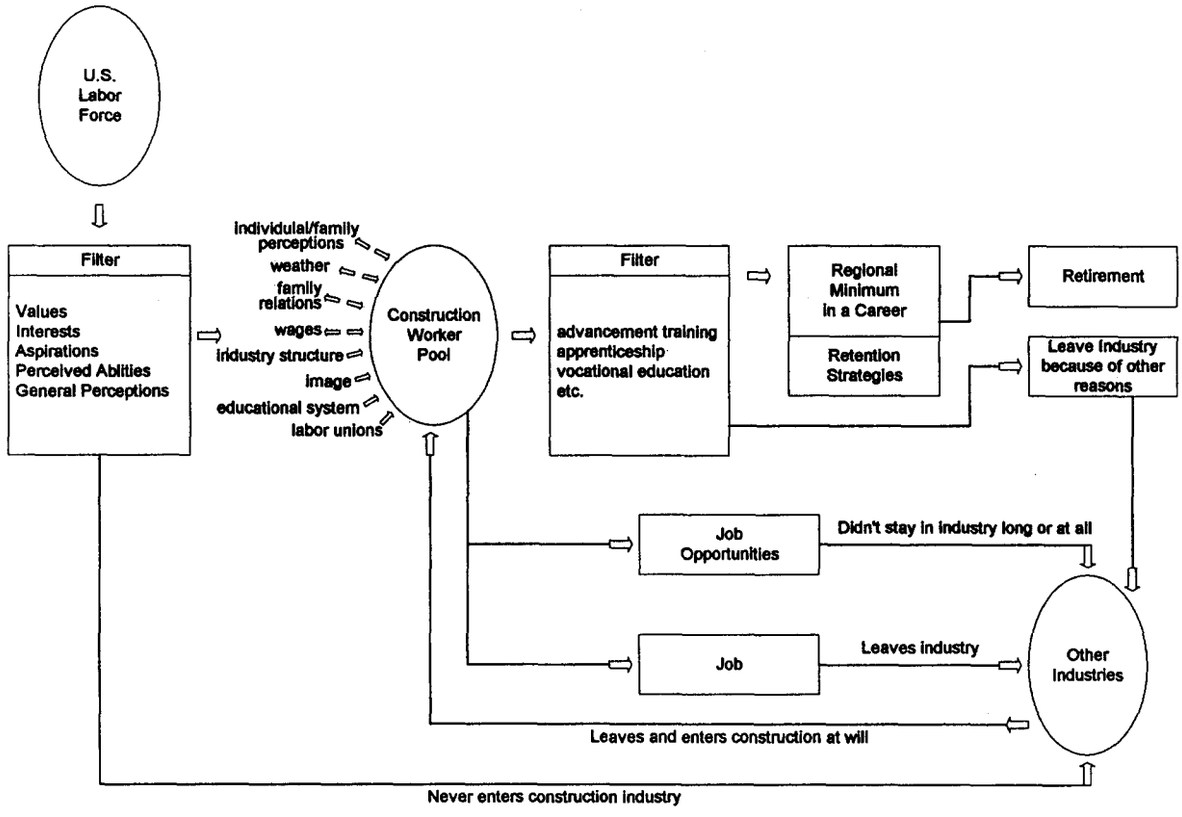

FIG. 1. Model

structure for the development of the questionnaire that provided quantitative measures of workers' perceptions of many of the influences identified in the model.

STUDY ORIENTATION

The study focused on the crafts employed by the sponsoring firms in CII. These firms are generally large industrial contractors working nationwide. The questionnaire was administered to over 4,600 construction craftworkers representing more than 30 skills. The craft questionnaire was administered at the jobsite during working hours. Questionnaires came from both union and nonunion job sites throughout the United States, although a large proportion of the questionnaires came from the gulf coast and southeastern regions of the country.

PRESENTATION OF RESULTS

Questionnaire

The questionnaire was separated into three sections that: (1) Requested demographic information about the respondents; (2) questioned the craftworkers about their attitudes toward construction work and why they chose to become a construction worker; and (3) questioned their perceptions on the career aspects of construction work. The third section also asked the respondent to describe whether certain characteristics were true or false in regard to both the construction industry and the manufacturing industry. In addition, workers were asked what advice they had received about entering the construction industry and what advice they would give an 18-yr-old high-school senior about becoming a craftworker. This article is primarily concerned with the second section of the questionnaire. The results from the third section will be reported separately.

Survey's Importance

Understanding the perceptions of craftworkers toward the construction industry is important—what they enjoy, what makes them enthusiastic, what they like to do, what they would change, etc. This information is important for managers of construction projects to provide opportunities for improving the construction worksite environment. For instance, a crew may be disgruntled because of the lack of a small hand tool. If such a situation occurs frequently, this source of dissatisfaction may result in productive workers leaving the company or possibly leaving the construction industry altogether.

Demographics

Seven companies assisted with the study by distributing the questionnaire to their craft personnel. The number of responses received from the various companies ranged from a low of 99 (2% of the total responses) to 2,285 responses (47% of the total responses). Although only a limited number of companies were represented, the diversity of companies and project locations participating in this survey should make the information generated by the responses valuable across a broader construction audience.

Table 1 and Figs. 2–6 present the majority of the demographic information collected from the respondents. As shown, the vast majority of respondents were male (94.8%, N = 4,585). Other demographic information includes racial/ethnic data: African American (7.4%, N = 353), Hispanics (10.5%, N = 502), Native American (2.7%, N = 127), Asian American (0.7%, N = 32), Caucasian (78.4%, N = 3,738), and Other (0.3%, N = 14). The minority construction workers are a slightly larger percentage of the total (in this study) than is reported in national statistics published by the Bureau of Census (*Statistical* 1990), where African Americans were reported to be 6.8% of total craftworkers and Hispanics 7.8%. This

TABLE 1. Demographic Characteristics

Questionnaire item (1)	Response category (2)	Frequency of response (3)	Category percentage (4)
Gender	Female	250	5.2
	Male	4,585	94.8
Marital status	Married	3,325	68.8
	Single	874	18.1
	Divorced	595	12.3
	Widowed	36	0.7
	No response	21	
Race/ethnicity	African American	353	7.4
	Asian American	32	0.7
	Native American	127	2.7
	Hispanics	502	10.5
	Caucasian	3,738	78.4
	Other	14	0.3
	No response	85	
Job classification	General foreman	227	5.5
	Foreman	630	15.2
	Journeyman	2,450	59.0
	Apprentice	553	13.3
	Other	291	7.0
	No response	700	
Craft training program	Began	693	25.7
	Completed	2,006	74.3
	No response	2,152	—
Apprenticeship program	Began	637	27.1
	Completed	1,711	72.9
	No response	2,503	—
On-the-job training	No	1,045	24.3
	Yes	3,248	75.7
	No response	558	
Number of weeks worked per year	39 or fewer weeks	1,001	21.6
	40–49 weeks	1,089	23.5
	50–51 weeks	766	16.5
	52 weeks	1,779	38.4
	No response	217	
Craft	Asbestos worker	136	2.8[a]
	Boilermaker	656	13.5
	Bricklayer	136	2.8
	Carpenter	945	19.5
	Cement mason	334	6.9
	Electrician	1,137	23.4
	Glazier	20	0.4
	Iron worker-Reinf.	507	10.5
	Iron worker-Struct.	815	16.8
	Laborer	821	16.9
	Marble mason	23	0.5
	Millwright	581	12.0
	Operating engineer	375	7.7
	Painter	498	10.3
	Pipe fitter	1,494	30.8
	Plasterer	69	1.4
	Plumber	461	9.5
	Roofer	311	6.4
	Rigger	844	17.4
	Sheet metal worker	330	6.8
	Sprinkler fitter	143	2.9
	Terrazzo worker	15	0.3
	Tile setter	95	2.0
	Teamster	89	1.8
Acceptable travel time	Less than 15 min	244	5.1
	16–30 min	1,139	23.8
	31–59 min	1,504	31.5
	60 or more minutes	1,903	39.7
	No response	61	—
Acceptable travel distance	Less than 15 mi (24 km)	468	9.7
	16–30 mi (25–48 km)	1,372	28.4
	31–59 mi (49–99 km)	1,348	27.9
	60 or more miles (100 km or more)	1,903	33.9
	No response	61	—
Reason for leaving the construction industry	Retirement	2,470	55.6
	Layed off	259	5.8
	Better job	1,563	35.2
	Safety concerns	152	3.4
	No response	407	—
Willing to spend weeknights away from home	No	1,432	30.3
	Yes	3,291	69.7

[a]Multiple answers allowed percentage will not add to 100%.

discrepancy is likely due to the nature of the cooperating firms' employment practices and the geographic distribution of the projects included within the survey.

The job classifications of the respondents (general foremen, foremen, journeymen, apprentice, and other) show that all categories are well-represented. In addition, the wide variety of crafts, listed in Table 1, are well-represented. The respondents were allowed to indicate all crafts for which they are skilled. Since this resulted in multiple responses for the nonunion-sector employees, the percentage exceeds 100. The distribution of jobs and crafts allows the comparison of perceptions and

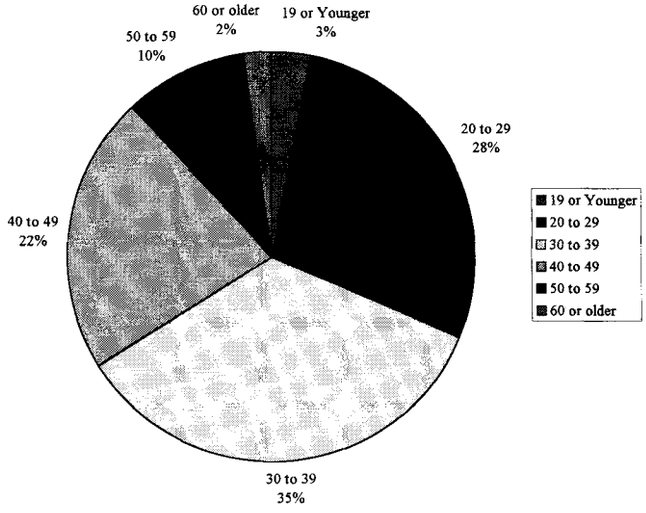

FIG. 2. Age of Respondent

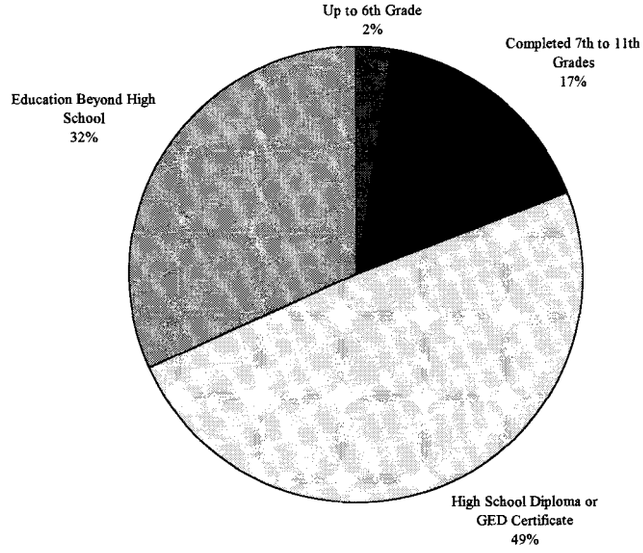

FIG. 3. Years of Schooling

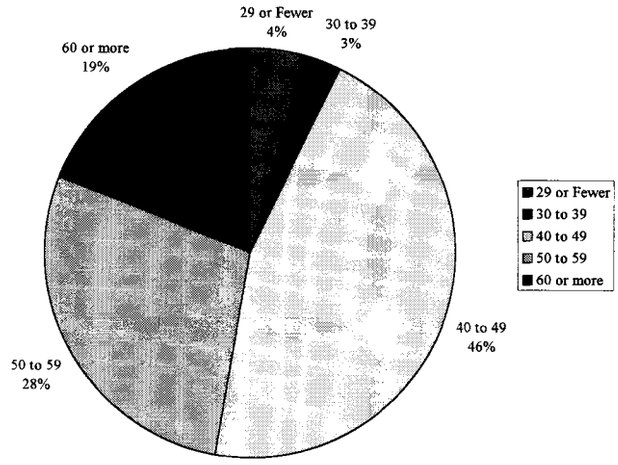

FIG. 4. Average Number of Hours Worked per Week

attitudes across classifications. As might be noted from the crafts represented, nearly all the sites to which the questionnaire was distributed were industrial construction projects.

More than 80% of the respondents indicated having completed the 12th grade or beyond. In addition, 74% reported having completed a craft-training program, while 73% had completed an apprenticeship program, and 76% received on-the-job training. The average number of hours worked per week was 47, and the average number of weeks worked per year was 43. On average, the respondents were 36 years old and had 12 years of craftwork experience.

The respondents were asked at what age they expected to leave the construction industry and why they would leave. More than 50% of the respondents expected to leave the construction industry by age 55, with retirement or a better job being the two most frequent reasons for leaving construction.

Another set of questions sought to determine the willingness of the respondents to travel, both in distance and time. Less than 40% were willing to travel more than 1 hr (one-way) to work, with most indicating a willingness to travel up to 59 mi (94.5 km). A 70% majority, however, were willing to spend weeknights away from home if needed.

Statistical Analysis

To develop the scales, which are referred to in the following sections, the writers used a four-step process, similar to that used by Federle (1990) and discussed briefly by Federle and Maloney (1992). In this process, the items expected to form a scale were included within the questionnaire. Next, like items were reduced into scales using common-factor analysis techniques. As is standard practice, an eigenvalue of one, representing an equal likelihood of being explained by chance, was used as the cut-off point to determine the number of factors which are then transformed into attitudinal scales. The factor loadings of the items were then multiplied by the individual responses to develop a quantitative measure for each respondent on each scale. Reliability analyses of the scales were then conducted, and finally an analysis of variance among major subgroups was performed. Unique to this paper is that cross-tabulations of the demographic variables on the attitude scales were the main form of identifying important subgroup differences. The results of the statistical analysis are presented in the following sections. If a subgroup is not identified as having different responses from other subgroups, a lack of statistical significance among those groups existed.

Satisfaction Measures

The questionnaire was designed to develop measures of satisfaction for two major attitudinal areas of construction work. The first was a job satisfaction measure. This measure sought to elicit responses on the amount of work activities the respondent enjoys, feelings about working conditions, and other like items. (Please see Appendix I for a listing of the actual items and response categories used within the questionnaire.)

The second scale asked about the respondent's satisfaction with the financial aspects of the craftwork. Included among these items were attitudes about hourly wages, annual income, how well current earnings influence their work attitude, and how well their earnings satisfy their needs. Each item was designed to elicit feelings the craftworker had about construction work.

Job Satisfaction

Each of the items comprising the job satisfaction scale reported in Appendix I are related to the respondent's job per-

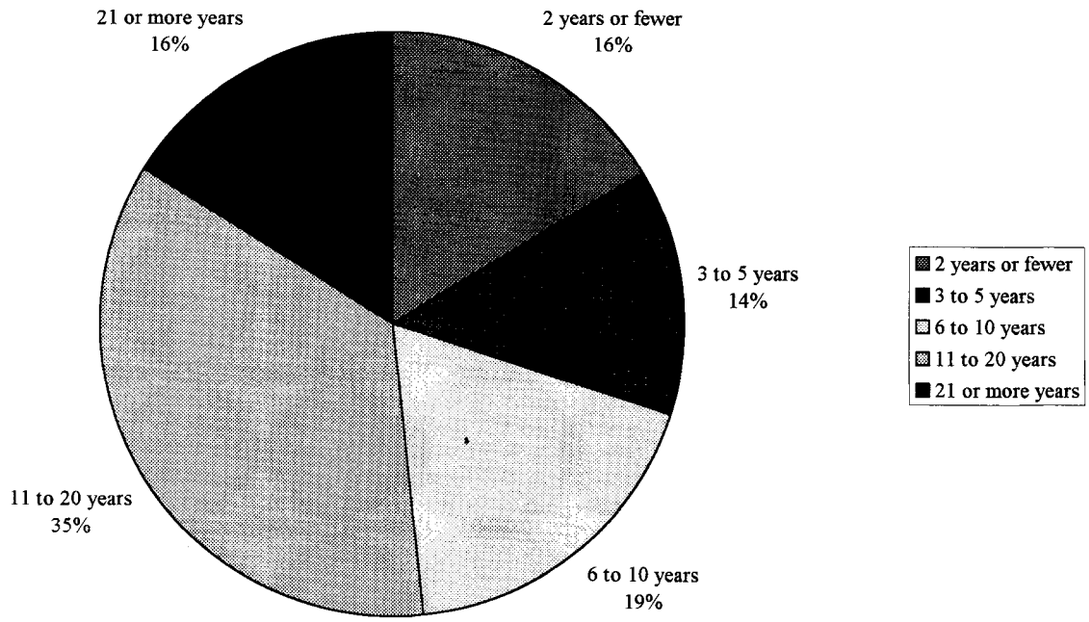

FIG. 5. Number of Years Working in Craft

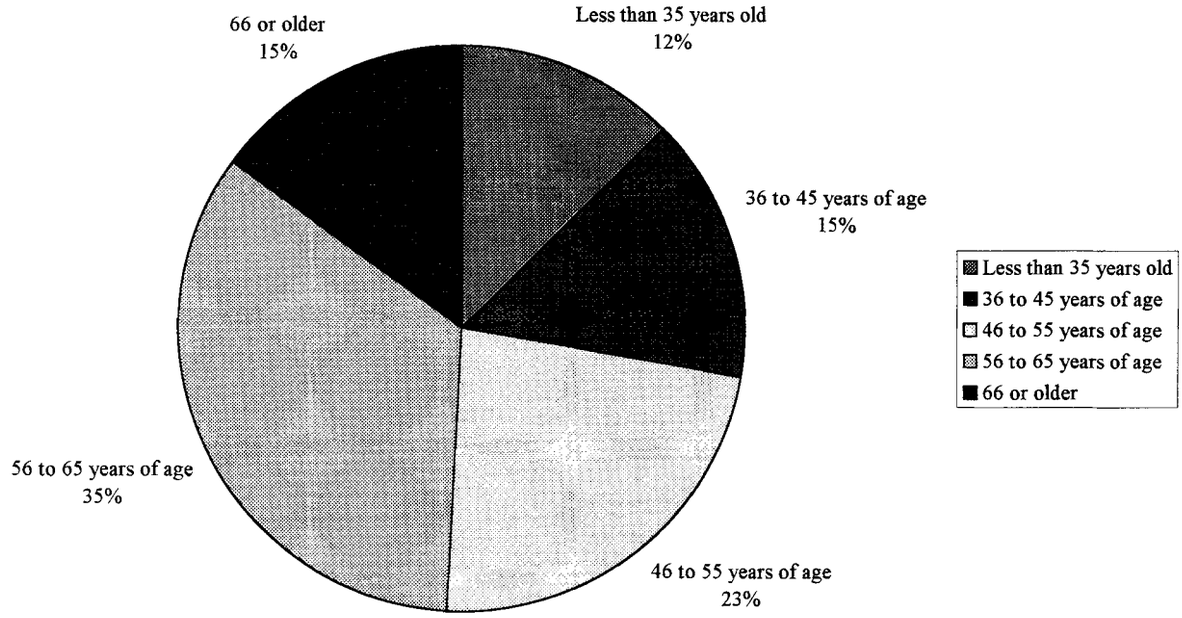

FIG. 6. Age Expected to Leave Construction Industry

formance. From their responses to these items, the respondents were separated into low, medium, and high levels of job satisfaction. Several demographic differences are unlike what might have been expected. Overall, women were more likely to report higher average levels of satisfaction with their jobs than were men. Because women comprise such a small percentage of the overall craft workforce, sexism might have been expected to have reduced their overall satisfaction. This higher job satisfaction is probably indicative of the opportunities, perceived by females, that construction work can provide. Craft employment has repeatedly been proposed as a means of self-sufficiency for women who are also heads of households (Kleiman 1991; *Set* n.d.).

General foremen and foremen were twice as likely than journeymen and apprentices to report high levels of job satisfaction. This number was somewhat surprising since the comment is often heard that the extra 50 cents or dollar per hour these individuals receive is not worth the additional headache resulting from increased job responsibilities. Obviously, to those who hold these positions, however, the job is worth the extra headache. The ability to plan and control work activities may also be a key satisfier.

Another surprise within the standard demographic variables was that single people were much less satisfied with their job than married, widowed, or divorced people. Yet, due to the travel requirements, the uncertainty of a weekly paycheck, the forced overtime, etc., one might expect single people to be more adaptable in such situations.

Two other surprises resulted from the fact that both the number of sites that people worked at during the past year and the number of years with their current employer had no effect on the likelihood of reporting a higher job satisfaction. Whether individuals worked one or 99 sites, they reported little change in job satisfaction. Also, whether an individual had worked for a single company for one day or 20 years had little effect on the overall job satisfaction. If viewed in the proper light, both these facts should be considered good news for the construction industry. That the number of sites had no effect on job satisfaction indicates that craftworkers, perceive changing jobsites to be part of a construction worker's career. In addition, that the loyalty shown by both the employer and employee to a long-term relationship had no effect may indicate that a traditional "hire and fire" mentality for a project would have little effect on changing the job satisfaction of the workers. Alternative explanations to this last supposition, however, are: (1) Due to the small number of contractors represented in this survey, too few workers had experienced loyalty on the part of the contractor to a sufficient degree to affect their overall job satisfaction; and (2) the company's selection process "culls" those craftworkers who do not find the hire and fire mentality appealing.

Another interesting difference was that those who had received on-the-job training or craft training, or participated in apprenticeship programs were more satisfied than those who reported receiving no training. Further study is needed to discern the keys to this greater satisfaction.

Hispanic workers were more likely to be satisfied than the other ethnic groups. Statistically, a higher percentage of Hispanics participated in this survey than would be expected in the general craftworker population. Some of the contractors distributing this survey were located among states in the gulf coast region where there is a relatively high percentage of Hispanic workers. Perhaps this higher percentage or some other as yet unidentified cause may have produced this effect.

Moreover, the less-educated respondents were more likely to be highly satisfied with construction work. Further study is required to determine whether the less educated are more likely to accept worse job conditions than the more educated. If this is the case, then a plausible explanation for the increased likelihood of job satisfaction is that these individuals would be happy with almost any job regardless of the conditions, and construction, therefore, fits their needs.

Worker's perceptions, such as the foregoing, are overall symptoms of many of the problems the construction industry faces in overcoming its current image problem. Attracting highly qualified craftworkers to a field perceived to satisfy only those who have a lower education level will be difficult. As discussed by Maloney (1986), greater intrinsic satisfaction is derived when a worker's expectation is that the job will be demanding. The expectation of more skilled and educated construction workers may be too high to generate enough internal satisfaction.

There were separate questions on whether the respondent would be willing to leave the construction industry. For those willing to leave, 76% still reported satisfaction with their work. This result indicates that the problem of retention and

recruitment is less attributable to the work that craftworkers perform and more to the work environment. For example, the cyclical nature of craftworker employment may cause them to be dissatisfied with the financial aspects of their job.

Satisfaction with Financial Aspects of Construction Work

Distinct from job satisfaction, a scale for satisfaction with the financial aspects of construction work was developed. Appendix I shows that this scale includes hourly earnings, annual wages, and other related items such as a willingness to travel and to spend weeknights away from home for employment. Obviously, those who are willing to travel farther would seem more likely to earn sufficient compensation to satisfy their needs and to be satisfied with their annual income. On the other hand, those who are willing to travel might resent a low hourly wage that makes traveling a necessity to support themselves and their dependents. The analysis showed that willingness to travel long distances, those greater than 1 hr or 60 mi (96 km), had no effect on this satisfaction. Those willing to spend weeknights away from home were more likely to be satisfied.

Some of the findings from the crosstabulations included: older workers (those over 55 years of age) and very young workers (18 or younger) reported more satisfaction with the financial aspects of construction work than those between 19 and 54 years of age. Masons, both cement and marble, reported the lowest levels of satisfaction among the various trades. Satisfaction with the financial aspects of construction work also had a dramatic effect on the age at which a worker planned on leaving the construction industry. Participants indicating an intention to leave the industry after the age of 46 reported high satisfaction levels with the financial aspects of construction work.

The number of years with an employer had no effect on satisfaction with the financial aspects of construction work. This finding cannot be attributed to the influence of union wage scales in eliminating the relationship between longevity with an employer and pay, because most of the respondents work for merit-shop contractors. Rather, this finding may be indicative of the lack of seniority used by the participating contractors in determining wage rates. If this finding was due to the contractors who participated in this survey paying solely on worker skill level and/or performance, these contractors should be benefiting from a productivity-enhancing compensation package. Alternatively, this finding may also indicate that loyalty by an employee to his/her employer, and vice versa, is not highly regarded by the construction industry!

Table 2 shows the normalized response values of the satisfaction measures. A value of zero indicates no satisfaction, whereas a value of one indicates complete satisfaction relative to the sample. A final finding was that once the scales were normalized from zero to one, satisfaction with the financial aspects of construction work was somewhat higher than overall job satisfaction. This finding indicates that even in the merit-shop sector of construction work, the characteristics of the work environment are more in need of change than are wage scales. Also presented in Table 2 are scales labeled "Consider Construction a Career" and "Pride in Construction as a Vocation." Both of these will be discussed later; however, both scales have higher normalized mean and median values than either satisfaction measure. Thus, overall, relatively low levels of satisfaction are felt by the average craftsperson for his/her job and its financial rewards.

Consider Construction a Career

A scale was developed to identify those who intended to make construction a career as opposed to those who treated construction as a place to work until a better job was obtained. For a discussion of how and why this occurs, please refer to the model of influence (Federle et al. 1993).

TABLE 2. Normalized Responses

Scale (1)	Normalized Values	
	Mean (2)	Median (3)
Job satisfaction	0.291	0.256
Financial satisfaction	0.384	0.385
Consider construction a career	0.465	0.425
Pride in construction as a vocation	0.799	0.834

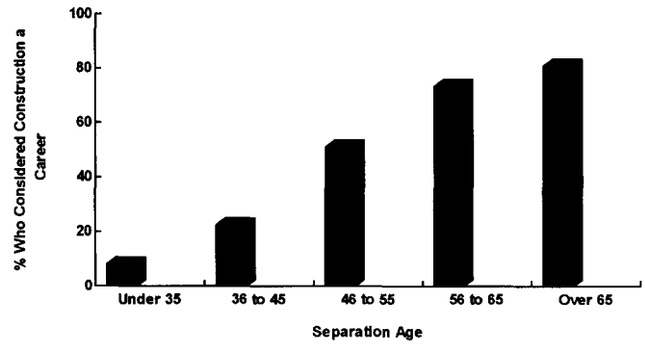

FIG. 7. Expected Separation Age and Perception of Construction As a Career

Somewhat surprisingly, no gender or racial or ethnic differences were found among the demographic variables. The research team thought that the white-male domination of the construction industry might produce a tendency on the part of minority groups to treat construction as a job rather than a career. However, this was not found to be true. Craftworkers who indicated a higher likelihood of making construction a career included: operating engineers, cement masons, and electricians. Those who indicated a willingness to travel long distances, greater than 60 mi (96 km) or 1 hr, and those who were willing to spend weeknights away from home in pursuit of work were much more likely to consider construction a career.

The expected separation age provided interesting information regarding those who considered construction a career. As shown in Fig. 2, only 73.4% of those intending to leave the construction industry between the ages of 56 and 65 considered construction a career, and 81.1% of those intending to leave the construction industry after the age of 65 considered construction a career. Thus many of the workers in the industry (for their entire lives) still do not think of their work as a career. This finding provides further evidence that many workers consider construction solely as a place to earn a check. Why? Perhaps this attitude is partly due to the lack of organizational investment, the lack of promotional opportunities, or the cyclical nature of the work. Obviously, the commitment for these individuals toward their industry is lacking. (See Fig. 7 for the expected separation age and perception of construction as a career.)

Further evidence that the lack of organizational investment negatively affects perceptions on considering construction a career is that those who received craft or apprenticeship training were much more likely to consider construction a career. Thus, training represents a commitment by both the worker and the employer. Finally, the less well-educated workers were much more likely to consider construction a career than those who had received at least a high school diploma. This reinforces the image issue of the poorly educated dominating the construction craft workforce.

Pride in Construction as a Vocation

The last attitudinal scale was developed from a series of items seeking to evaluate the pride the craftworker felt toward his/her work as a vocation. As shown in Appendix I, the items that comprise this scale asked for responses on personal pride level and the pride level of family, friends, and the community for construction jobs. The findings from the crosstabulations include: apprentices and journeymen are much more likely to be proud of their jobs than foremen and general foremen. The tradespeople who, on average, reported higher levels of pride included: rodbusters, laborers, painters, sprinkler fitters, terrazzo workers, and teamsters. While the most surprising group in the low-pride category were the electricians, this category also included marble masons and plasterers. Rather surprising is that laborers and teamsters find pride in their work because they are typically considered to be among the least skilled on a construction site.

One explanation for the low level of pride among electricians could be that most of their work is not as publicly accessible as other crafts (i.e., the wiring to support lighting and power are not seen by the typical user, whereas carpenters who construct walls etc. have their work readily available for viewing). This belief, however, was not supported as rodbusters, laborers, and sprinkler fitters all reported high levels of pride. Table 2 shows that construction workers report much higher levels of pride in their jobs than they report on job or financial satisfaction or intent to make construction a career. Therefore, small differences among the crafts would be more likely to classify a craft in one of the attitudinal ends than would be true for the other attitudinal scales.

Additional interesting information is that those who are unwilling to travel or spend weeknights away from home have more pride in their job than those willing to travel or not willing to spend nights away from home. Among the plausible explanations for this finding are that travelers grow weary of being away from home, with its negative effects on family life, and thus lose pride in construction work. Minority workers were more likely to be proud of construction as a career than white workers. Finally, the older the workers, the lower the level of pride they have.

CONCLUSION

The survey provided an opportunity to gather a broad range of information regarding the perceptions of our current craft workforce. The insights provided by this survey should provide a basis for addressing the problems that may arise with craftworker shortages in the United States. A better knowledge of the perceptions of the craft workforce results in the potential to improve the management's ability to get the best out of the construction workforce, retain skills that currently exist, and build a strong and competitive future workforce.

ACKNOWLEDGMENT

The financial support of the Construction Industry Institute is gratefully acknowledged.

APPENDIX I.

Job Satisfaction Items: ($\Re$ = 0.7337, N = 3,733)

How many work activities on your job do you enjoy?

1. Nearly all
2. About half
3. Almost none

How much of your work creates real enthusiasm on your part?

1. Nearly all
2. About half
3. Almost none

How do you feel about the kind of work you do? (Reverse scored)

1. Don't like it—would prefer some other kind of work.
2. I like it, but there is other work I like as much.
3. I like it very much.

The physical working conditions make working here:

1. Pleasant
2. Neither pleasant nor unpleasant
3. Unpleasant

How do you feel about your physical working conditions?

1. Satisfied
2. Moderately satisfied
3. Moderately dissatisfied
4. Dissatisfied

If you could have your choice of all the jobs in the world, which one would you choose?

1. Present job
2. Different job in same craft
3. Another craft
4. A job in another industry

Satisfaction with the Financial Aspects of Construction Work: ($\Re$ = 0.8430, N = 3,733)

For the job I do, I feel the amount of annual income is:

1. Good
2. Neither good nor poor
3. Poor

For the job I do, I feel the amount of hourly wage is:

1. Good
2. Neither good nor poor
3. Poor

How does the amount of money you now make influence your overall attitude toward your job?

1. Positive influence
2. No influence
3. Negative influence

To what extent are your needs satisfied by the pay and benefits you receive? (Reverse scored)

1. Almost none of my needs are satisfied.
2. A few of my needs are satisfied.
3. Almost all of my needs are satisfied.

For the next two questions, use the following scale:

1. Agree
2. Neither agree nor disagree
3. Disagree

Personal Perception of Construction as a Career: ($\Re$ = 0.6703, N = 3,733)

I would like to contnue doing the kind of work I am presently doing for the rest of my life:

1.
2.
3.

I regard my present position as a lifetime career:

1.
2.
3.

Construction work is the best in the world:

1.
2.
3.

I like my job more than my coworkers do:

1.
2.
3.

Personal Pride in Construction as a Career: ($\Re$ = 0.6069, N = 3,733)

I am ashamed of my job:

1.
2.
3.

I feel that my job detracts from my status in my community:

1.
2.
3.

I am proud of my job and the work I do:

1.
2.
3.

I feel that my family respects my vocation:

1.
2.
3.

I would quit this job in a minute if I could make the same money doing something else:

1.
2.
3.

APPENDIX II. REFERENCES

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