







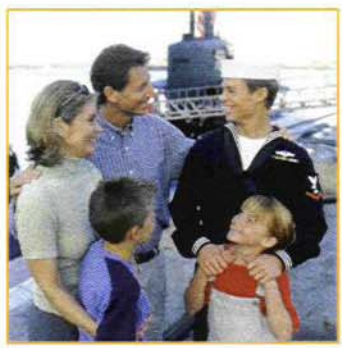

Overview Report

2000 Military Recruiter Survey

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2000 MILITARY RECRUITER SURVEY: OVERVIEW REPORT

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EXECUTIVE SUMMARY

Since the beginning of the All Volunteer Force in 1973, military recruiters have faced many challenges. Particularly difficult challenges in the late 1970s and 1980s, along with reports of recruiter improprieties, led to increased attention from Congress on recruiter quality-of-life issues. In 1989, the Directorate for Accession Policy asked the Defense Manpower Data Center to conduct a survey of recruiters. Subsequent surveys were administered in 1991, 1994, 1996, 1998, and 2000. Survey topics have included quality-of-life issues, adequacy of training and resources, goal attainment, satisfaction with leadership, and perceptions of improprieties.

Recruiting Environment

In the fall of 2000, when the *2000 Military Recruiter Survey* was administered, military recruiters were facing one of the toughest recruiting environments since the end of conscription. Although the number of youth eligible for military service was on the rise, some military Services failed to achieve their missions in the preceding 2 years because of changing environmental factors.

A top indicator of recruiting difficulty—youth propensity to join the military—was much lower, on average, in the 1990s than in the 1980s, partly because of increased options for high school graduates. College enrollment rates rose steadily during the 1990s, a strong economy brought new civilian-sector job opportunities, and in 2000 the unemployment rate was at its lowest point since implementation of the All Volunteer Force. A continually declining number of military veterans limited youths' exposure to knowledgeable adults who could tell stories or answer their questions about the military. In addition, military advertising budgets were unstable, making delivery of consistent messages to youth impossible.

In 2000, the Department of Defense and the Services increased recruiting resources in response to the current recruiting environment and recent recruiting shortfalls.

Topline Findings

Changes in the recruiting environment and in the resources available to address challenges are often reflected in recruiters' perceptions of their job performance and quality of life. A set of core questions is asked in each Recruiter Survey to capture changes in recruiters' perceptions. The questions are grouped into five categories: goal achievement, job demands, improprieties, management/supervisory support, and job satisfaction. Overall, the results indicated improvement from 1998 to 2000 in recruiters' attitudes about their jobs and their self-reported performance. Goal achievement was up, and recruiters' perceptions about the difficulty of achieving goals were less negative. Job demands continued to be a challenge. Recruiters continued to work long hours, although fewer recruiters reported foregoing leave because of job pressures. Perceptions of improprieties, or bending the rules to achieve goal, decreased from 1998 levels. Support from management was mixed. Levels of negativity regarding supervisory support remained the same, while recruiters reported better teamwork with their superiors. Recruiters indicated no changes in dissatisfaction with recruiting or in their intentions to remain in recruiting.

Model Development

For the *2000 Military Recruiter Survey*, the overview report focuses on satisfaction, job performance, and strain among active duty production recruiters. Structural equation modeling with latent variables (SEM) was used to identify the relative and independent strength of nine influencing factors (ease of meeting goals, control over duty assignment, hours worked, pressure to meet goals, office appearance, recognition for achievement, supervisor support, perceived importance of recruiting, and family concerns) and one mediating factor (perceived strain) on two major outcomes (performance and satisfaction with recruiting).

The model was developed in two stages. First, an iterative process was used to determine how well survey items grouped together to form the 12 constructs. Second, another iterative process, informed by an understanding of the recruiting market, was conducted to specify expected direct and indirect effects of the influencing variables on the outcome variables. For example, according to the model, decreased family concerns is expected to lead to higher satisfaction with recruiting. Model validation and goodness of fit tests indicated that the final structural model adequately represents the responses of active duty production recruiters.

Model Findings

Overall, the modeling effort was successful, particularly in explaining satisfaction with recruiting. The findings indicate that increasing attention to family concerns, increasing support for the importance of recruiting, and decreasing strain will directly increase job satisfaction. Also, the job-related factors that most affect satisfaction through strain include, in order of their relative strength, decreasing excessive goal pressure, increasing control regarding duty assignments, increasing recognition for work well done, increasing ease of meeting goals, decreasing the number of hours worked, and improving office appearance.

The model was less successful in predicting job performance (possibly because of unmeasured factors such as variation in propensity by region and differences in school system characteristics, unemployment rates, and socioeconomic and demographic makeup within and across recruiting areas). The model constructs most strongly influencing performance include control over duty assignment, ease of meeting goals, and hours worked. Model findings indicate a relatively minor, though statistically significant, influence of strain on performance.

Conclusions

The 2000 Military Recruiter Survey findings show overall improvement in recruiters' perceptions of their jobs and quality of life since 1998. In addition, the model captured many important factors contributing to strain and satisfaction with recruiting. This information may prove useful in guiding changes in policies and procedures to enhance future recruiters' quality of life. For example, the model findings indicate that policy makers and program managers should continue their efforts to provide tools that aid the recruiting job, to address family issues, and to support the recruiting career field. If the model is to provide a better understanding of factors influencing performance, the current analysis may need to be expanded to include demographic and economic indicators as well as other recruiting market characteristics.

Table of Contents

Appendixes

Table of Contents (Continued)

List of Tables

List of Figures

CHAPTER 1: BACKGROUND, TOPLINE HIGHLIGHTS, AND RECRUITER PROFILES

This report contains findings from the *2000 Military Recruiter Survey*. It is the latest in a series of *Recruiter Survey* reports presenting recruiters' perceptions about their work and its effects on their lives.[1] The findings in this report are presented primarily within a model framework that indicates issues and situations that contributed to successful job performance and job satisfaction among recruiters in 2000. First, however, we provide background information on the *Recruiter Survey*, a snapshot of the FY 2000 recruiting environment, highlights on key indicators from the *2000 Military Recruiter Survey*, and profiles of recruiters included in the 2000 survey data analysis.

Brief History of the *Recruiter Survey*

In the years immediately following implementation of the All-Volunteer Force in 1973, the job of military recruiters became much more challenging. Suddenly they were competing with private industry, colleges and universities, and vocational training organizations to attract qualified youth to military service. Reports grew that pressures to meet accession goals were creating high levels of stress among recruiters. Those issues were addressed by the House Committee on Appropriations during a 1978 hearing and in subsequent hearings on recruiting (Maxfield, 1990).

In 1983–84, an economic upturn improved employment prospects in the private sector. That change, as well as a declining population of youth during the 1980s and fluctuations in recruiting resources and accession goals, added to recruiters' difficulties. Congressional concern grew that pressures on recruiters to achieve their accession goals in a highly competitive environment were contributing to recruiting improprieties (Maxfield, 1990).

The FY 1990 House Appropriations Conference Committee directed the Services to ensure that, in their efforts to meet necessary accession goals, they did not subject recruiters and their families to undue pressure and a diminished quality of life (Maxfield, 1990). In response, in 1989 the Directorate for Accession Policy asked the Defense Manpower Data Center (DMDC) to design and administer a survey to enlisted military recruiters from all four active DoD Services. Findings on recruiters' perceptions of recruiting policies and procedures, improprieties, and quality-of-life issues were provided to all personnel responsible for establishing recruiting policy and managing recruiting programs (Zucker, 2001).

Accession policy worked with DMDC staff to develop the first survey, which was administered in late 1989. Follow-up surveys in 1991, 1994, 1996, 1998, and 2000 have added to the baseline information collected in 1989 (Zucker, 2001).

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[1] The 1989 through 1998 surveys were titled *DoD Recruiter Survey*. In 2000, the name of the survey was changed to *Military Recruiter Survey*. In this report, unless we speak specifically of the 2000 survey, we refer to the surveys as *Recruiter Survey*.

Sample Frame and Target Population

The sampling frame for the 1989 survey included active duty Army, Navy, Air Force, and Marine Corps recruiters. The frame was expanded in 1991 to include Reserve and Guard recruiters and in 1994 to include Coast Guard recruiters.[2] In 1994 and 1996, in an effort to focus the sampling frame on personnel who had been actively recruiting during the reference period for the surveys, DMDC asked each Service to send a list of its production recruiters. Because the definition of *production recruiter* varied among the Services, the recruiting personnel lists for the Services that were included in the frames for those 2 years were somewhat inconsistent. However, the survey analysis results were based on a similar target population for each Service (Zucker, 2001; A. Zucker, personal communication, April 4, 2002).

The target population of recruiters in the 2000 survey was recruiters with monthly *or annual* goals/missions (production recruiters) and at least 1 year of recruiting experience. Similarly, the target population of recruiters in the 1994, 1996 and 1998 surveys was recruiters with monthly goals or missions and at least 1 year of recruiting experience (Zucker, 2001). The population was defined more generally in the 1991 survey as officer/enlisted recruiters who had at least 1 year of recruiting experience, and in the 1989 survey as active duty members currently assigned to recruiting duty who had at least 1 year of recruiting experience (Maxfield, 1990, 1993).

Data Collection

For all of the *Recruiter Surveys* except the 1998 survey, the mode of data collection was mailed paper surveys. In 1998, survey diskettes rather than paper surveys were mailed to 96 percent of the sample (the Coast Guard completed paper surveys) (Condon, Girard, Feuerberg, & Zucker, 2000). Mailings for each of the surveys began in October/November, and field operations closed between December and February.

The 2000 survey was mailed, following a notification letter, to a random sample of 10,115 recruiters. The weighted response rate for the full sample was 56.9 percent (Flores-Cervantes, Valliant, George and Zucker, 2002). Among the 5,639 survey respondents, 4,706 were eligible for the analysis sample. Data collection information for all of the surveys is summarized in Table 1.1 (see Appendix A for a more complete description of the data collection procedures and results in the 2000 survey).

Survey Content

The core content of the *Recruiter Survey* covers recruiters' perceptions of (1) selection, training, and development procedures; (2) quality of life on and off the job; (3) job satisfaction and goal achievement; (4) organizational leadership, including reasonableness of goals/missions; (5) pressures to reach goals and rewards for doing so; (6) support in the form of recruitment

[2] The Coast Guard is part of the Department of Transportation. In peacetime, it performs missions for that department; in wartime, however, it may be placed under the command of the Department of Defense.

Table 1.1.
DoD Recruiter Survey: Data Collection Information

Year	Survey Mail Dates	Field Closed	Frame Size	Sample Size	No. of Respondents	No. of Eligible Analysis Cases[a]
1989	mid-Oct ; mid-Nov	20 Dec 1989	18,113	3,498	2,524	1,554
1991	30 Oct; 12 Dec	27 Jan 1992	24,219[b]	5,951	3,273	1,988[c]
1994	21 Oct; 22 Dec	23 Jan 1995	13,576[d,e]	7,255[f]	4,805	3,846
1996	5 Nov; 19 Dec	03 Feb 1997	13,897[e]	7,173[f]	4,822	4,008[g]
1998	mid-Nov; 19–22 Dec	23 Feb 1999	24,183	8,466[f]	5,163	4,343
2000	16–22 Nov; 15 Dec	09 Feb 2001	23,254	10,126[f]	5,639	4,706

Note. Data sources for this table include published and unpublished sources for the surveys (Condon, Dunlop, Girard, Sundel & Feuerberg, 1997; Condon, Girard & Feuerberg, 1998; Defense Manpower Data Center, 1995; Fink, Ghosh, Guterman & Sands, 1995; and Smith, et al., 1995).

[a]Definitions of eligible analysis cases varied somewhat in the first 2 survey years. See report text. Descriptive analyses were based on these cases. [b]Reserve Components were added to the frame in 1991 (Army Reserve and National Guard, Naval Reserve, Air Force Reserve, and National Guard). [c]Army Reserve recruiters were not included in the analysis because only 12 satisfied the selection criteria. [d]The Coast Guard (part of the Department of Transportation) was added to the frame in 1994. [e]The 1994 and 1996 sample frames differed from the frames in other years. The Services each provided a list of their "production recruiters," and their definitions of those recruiters varied. [f]The number of surveys mailed was less than the sample size because some addresses were not usable: in 1994, 6,320 were mailed; in 1996, 7,162 were mailed; in 1998, 8,463 were mailed; and in 2000, 10,115 were mailed. [g]For the multivariate analysis, the eligible sample was 4,029. Twenty-one cases missing branch or Service designation were classified by using Master File data and were added to the multivariate analysis sample.

advertising, incentives to attract qualified prospects, and adequate offices and equipment; and (7) improprieties in recruiting.

The questionnaire is continually updated. Questions are rewritten to improve clarity, dated items are removed from the survey, and new items are added to ensure that the survey meets the changing needs of policy makers and program managers (Zucker, 2001). For example, in the 2000 survey, items about computer and Internet use, job stress, recruiting offices, and the possibility of using civilian contractors to assist recruiters were expanded. Items were also added to assess recruiters' satisfaction with schools, availability of childcare, and spousal employment opportunities in assigned duty areas. These new items reflect the increasing importance of Internet communications in recruiting as well as initiatives by the active Services and Reserve Components to meet the needs of recruiters' family members. A copy of the *2000 Military Recruiter Survey* is included in Appendix B.

Some other topics reflecting the dynamic recruiting environment that were added to the survey between 1991 and 1998 included the following: perspectives on the prospect and recruiting markets; the effects of Desert Shield/Desert Storm, military downsizing, and resource cutbacks on recruiting; working with schools; accessibility and attractiveness of recruiting offices to prospects; unreimbursed job-related out-of-pocket expenses; healthcare access and coverage for recruiters and their families; and the difficulty of recruiting women (a more important issue following media coverage of improprieties in 1996).

Reports on Topline Findings

For each administration of the survey, DMDC reports *key military indicators* in five topical areas: goal achievement, job demands, improprieties, management/supervisory support, and job satisfaction. Trends in these indicators and significant differences between successive surveys are noted (Zucker, 2001). Highlights from the topline findings for the 2000 survey are presented later in this chapter.

The FY 2000 Recruiting Environment

This section of Chapter 1 contains information about recruiting pressures that helps to provide context for findings from the *2000 Military Recruiter Survey*. This section also includes comments from respondents to an open-ended question in the 2000 survey about recruiters' most pressing problems. The comments are presented simply as anecdotes that add the voices of recruiters to the description of pressures confronting them on the job. The comments have not been subjected to any qualitative or quantitative analysis and should not be considered representative of all recruiters.

Size of the Prospect Market

On the positive side, the total population of youth 18 to 24 years old grew by more than 1 million from 1998 to April 2000, to slightly more than 27 million. The population of 25- to 34-year-olds also increased by more than 1 million during that period (US Census Bureau, 2001a, 2001b). Not all individuals in eligible age groups, however, meet enlistment requirements for active duty and Reserve service, so the increase in the qualified prospect pool was less than the population increase.

Changes in postsecondary goals among youth and other changes in the country also offset gains from having a larger pool of recruit-aged young adults. A respondent to the *2000 Military Recruiter Survey* summed up many of these changes when replying to an open-ended item about the most pressing problems facing recruiters today: "Good economy. Low unemployment. College enrollment at an all time high. Negative news about military life."

Declining Interest in Military Enlistment

Data from the *Youth Attitude Tracking Study* indicate that during the 1990s young adults were proportionately less likely, on average, to express interest in serving in the military than youth were in the 1980s (Wilson et al., 2000). Because studies have shown a strong correspondence between expressed interest in the military and likelihood of actual enlistment, the change in attitude about military enlistment increases pressures on recruiters (Wilson et al.). Those pressures were indicated by many respondents to the 2000 survey, who cited decreasing interest to enlist as their most pressing problem (e.g., "Recruiters are facing a bigger challenge with the young people now a days. They are not interested in the military as much as they were a few years ago.").

Fewer Knowledgeable Adult Influencers

Adults who in the past served as role models and good sources of information about the military are scarcer today. In a 1996 research study conducted by the Navy, the presence of veterans under age 65 was cited as the most important factor for explaining enlistment rates (DMDC, 2000). The veteran population, however, has been steadily declining in the United States. Veterans younger than 65 years old represented about 9.5 percent of the total US population in 1990 and about 6.5 percent (approximately 15.9 million) in 2000. Also, among the nearly 16 million veterans under age 65 in 2000, only about 2.2 million were under age 35 (Department of Veterans Affairs, 2001; US Census Bureau, 2001c).

Recruiters were also reporting in the mid- to late 1990s that civilian knowledge of the military is often incomplete or out-of-date and they must educate parents and school officials about the wide-ranging job assignments, training opportunities, and educational benefits available in today's military (Barrett, 1996). In recent polls conducted for the Department of Defense, civilian adults confirmed those reports: A majority of adults reported they had little or no knowledge about current military programs and incentives (Wirthlin Worldwide, 2001a; Yankelovich Partners, 2001). In addition, recent poll results indicate that although many adults express favorable opinions of the military generally, they are more likely to advise their children and students to attend college immediately after high school than to consider military service (Wirthlin Worldwide, 2001b). Various respondents to an open-ended question about pressing problems facing recruiters commented on these issues:

> "Common feedback from parents: 'We support the U.S. and the military, but I would never let my son/daughter serve.'"
>
> "Attitudes of the parents. The kids will enlist but the parents discourage them."
>
> "Misconceptions about military from friends and family who were teens and young adults during Viet-nam era."
>
> "Educators, they only encourage students who do not do well to look into the military."

Thus, recruiters have to persuade not only youth, but many adult influencers as well, of the value of including military service in youths' postsecondary plans.

Rising College Aspirations and Enrollments

Increasingly, teens aspire to attend college. The number of 18- and 19-year-old students in 2- and 4-year colleges rose from just under 3 million in 1990 to 3.4 million in 1999, with a projected enrollment of 44,000 more in 2000. Rates of enrollment varied, however, among subgroups. More women than men have been entering college: For 18- and 19-year-old students, the projections for 2000 were 1.9 million women versus slightly more than 1.5 million men (Snyder & Hoffman, 2002). Also, in 1999 the enrollment rates of young adults entering college immediately after high school varied considerably by parents' educational attainment: 82 percent among students whose parents held a bachelor's degree or higher; 54 percent among students whose parents had completed high school, but not college; and 36 percent among

students whose parents had less than a high school diploma (National Center for Education Statistics, 2001).

These developments have led to increased interest in recruiting college students. More attention has also been paid to home-schooled students and youth with high school equivalency degrees who score high on the military qualification test. Those markets, however, can present special challenges for recruiters (Philpott, 1999).

Strong Economy

The booming economy also contributed to recruiting pressures in late 1999 and 2000. The civilian unemployment rate in 2000 was 4.0, the lowest rate since 1969. The unemployment rate for young adults, traditionally higher than that for the total civilian population, ranged from 10.7 to12.5 for 18- to 19-year-olds and from 6.6 to 7.9 for 20- to 24-year-olds during 2000 (US Bureau of Labor Statistics, 2002). Competition for both high school and college graduates was keen. Various recruiters responding to the question about pressing problems wrote that the military was at a disadvantage because it could not effectively match the pay and benefits available in the civilian sector:

> "Most civilian companies offering better educational packages than the military."
>
> "Not competitive with civilian employers."
>
> "Competition, almost every enterprise, company & franchise offers the same or more in pay, benefits."

Goal Achievement Pressures

Recruiters also felt increased pressures to meet their goals because, uncharacteristically, DoD failed to achieve its active enlisted accession goals in the late 1990s. In FY 1998 DoD attained only 97 percent of its goal, despite a decline in accession goals of about 4,700 from FY 1997. The Navy reached only 88 percent of its goal in FY 1998, and the Army 99 percent. DoD also failed to achieve its enlisted accession goals in FY 1999 (96 percent of goal). Goals increased from FY 1998 by about 2,500, to 195,000. Both the Army (92 percent) and the Air Force (95 percent) failed to reach their goals in FY 1999 (DoD, Office of Accession Policy, personal communication, March 21, 2002).

More pressures were to come in FY 2000, when DoD total active enlisted accession goals increased by nearly 7,000. The approximate change for each of the Services was as follows: Army, 5,500 increase; Navy, 2,500 increase; Marine Corps, 1,250 decrease; Air Force, 200 increase (DoD, Office of Accession Policy, personal communication, March 21, 2002).

In addition to "meeting the numbers," DoD recruiters were expected to adhere to educational standards of recruit quality that had been in place since the mid-80s: At least 90 percent of recruits should be high school diploma graduates, and at least 60 percent should score 50 or above on their qualification tests. In comparison, among the general population, only about 79 percent of 18- to 23-year-olds have high school degrees and only 50 percent would

score 50 or above on the military qualification test, according to the norms defined for the test (Office of the Assistant Secretary of Defense [Force Management Policy], 2002).

Recruiters also had to adhere to standards regarding enlistees' medical fitness and legal violations. Some of the respondents to the 2000 survey mentioned that finding qualified leads and applicants was a pressing problem in their recruiting areas.

Clearly, recruiters were under strong pressures in FY 2000, particularly Army recruiters. Recruiters knew that they, unlike service members in many other jobs in the military, would be held personally accountable for their individual performance by clearly measurable goals/missions.

DoD Response to Recruiting Challenges

DoD and the Services responded to the challenges facing recruiters in FY 2000 by allocating more resources to the recruitment effort. For example, the Services increased the number of "on the street" recruiters and used a variety of temporary recruiting assignments to supplement the ranks of recruiters: They deployed recruiters from headquarters and staff positions, recalled former recruiters, and assigned recent graduates of basic training to their home areas. Also, civilian contractors were used on an experimental basis to assist with administrative duties, calls to prospects, and guidance counseling. In addition, some recruiters' assignments were extended.

In response to the dwindling interest in and knowledge about military service, DoD and the Services began reassessing their advertising programs and conducting market research on youth and their influencers. DoD and the Services also began developing sophisticated Web sites with information about today's military and the individual Services. Some of those efforts were implemented in FY 2000 and prior years, but the effects of others would be more evident in later years.

To attract youth aspiring to earn college degrees, the Services expanded existing education programs and implemented new ones, such as the Army's College First and University Access Online programs. In combination, various programs provided enlistees with opportunities to earn college credits before, during, and after their terms of enlistment. To compete with civilian employers and to attract enlistees with special skills, particularly in high-tech and medical specialties, the Services increased bonuses and incentives (and sometimes combined them), implemented college loan repayment programs, and emphasized training opportunities.

DoD also addressed quality-of-life concerns among recruiters. Health care programs were improved for service members in remote locations (benefits under TRICARE Remote would not be extended to family members until FY 2001), employment support was provided to recruiters' spouses, and recruiters became eligible for reimbursement of recruiting-related parking expenses for privately owned vehicles. The Services relocated some recruiting stations to better market areas, and supplied laptops, pagers, and cell phones to many more recruiters (Kozaryn, 2000; Williams, 2000; & Department of Defense, 2000a,b,c,d).

FY 2000 Results for Active Duty DoD Services

All of the forgoing challenges and developments in the recruiting environment set the stage for FY 2000. Recruiters had much to accomplish under extremely competitive conditions. Supported by increased resources, all active duty DoD Services did in fact meet or, in the case of the Air Force, exceed their enlisted accession goals in FY 2000. In addition, all of the Services met or exceeded quality benchmarks regarding high school graduates and scores on qualification tests (DoD, Office of Accession Policy, personal communication, March 21, 2002).

The topline findings from the *2000 Military Recruiter Survey* provide information on how the recruiting environment and the efforts undertaken by DoD and the Services, both Active and Reserve Components, affected the performance and quality-of-life perceptions of individual production recruiters in FY 2000.

2000 Topline Findings: Highlights

The following highlights from the *2000 Military Recruiter Survey* identify statistically significant increases and decreases for key military indicators from 1998 to 2000 (see Appendix C for more details on these key indicators).[3]

Goal achievement. Good news—The percentages of active duty DoD recruiters and Reserve Component recruiters reporting they achieved their assigned goals in at least 9 months of the previous fiscal year rose between 1998 and 2000 (up by 8 percentage points, to 41 percent, and up by 5 percentage points, to 62 percent, respectively).[4] Army, Air Force, and Army National Guard recruiters reported higher achievement. Reported achievement varied greatly across Services and Components, ranging from a low of 24 percent for the Army to 79 percent for the Naval Reserve.

In addition, both active duty DoD and Reserve Component recruiters, on average, were less pessimistic in 2000 about the *achievability* of their goals/missions. The percentage of all active duty DoD recruiters disagreeing that their goals were attainable declined by 9 percentage points, to 18 percent, the lowest proportion since 1991. For total Reserve and Guard Components, there was an 8 percentage point decline, to 21 percent, also the lowest proportion since 1991. All individual active duty DoD Services and the Army Reserve and Army National Guard reported declines in the percentage of recruiters who thought they could not attain their goals. Improvements were particularly notable in the Army (a 13 percentage point decline, to 24 percent) and in the Army Reserve (a 19 percentage point decline, to 27 percent).

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[3] Results in this report for topline findings, recruiter profiles, and multivariate analysis apply only to respondents who were defined as production recruiters, that is, respondents who had monthly goals/missions and at least 1 year of recruiting experience. The findings are weighted percentages. T-tests with a cutoff of alpha equal to .05 were used to determine statistically significant changes.

[4] In the analysis findings, "active Services" include the Army, Navy, Marine Corps, Air Force, and Coast Guard. "Active duty DoD Services" exclude the Coast Guard, which is part of the Department of Transportation. The "Reserve Components" include the Army Reserve, Army National Guard, Naval Reserve, Air Force Reserve, and Air National Guard.

Job demands. Mixed news—The percentage of all active duty DoD recruiters who reported working more than 60 hours per week did not change significantly from the high level reported in 1998 (65 percent in 2000). The Air Force was the only active Service with a decrease (5 percentage points, to 37 percent), which helped to offset a 9 percentage point increase from 1996 to 1998. Both Army and Coast Guard recruiters, however, reported increases in the percentage of recruiters working long hours. The story for Reserve Components was different. On average, the percentage of Reserve and Guard recruiters working more than 60 hours per week increased by 6 percentage points, from 34 percent to 40 percent. The Army Reserve, the Army National Guard, and the Air Force Reserve had increases in the percentage of recruiters reporting long work weeks. The only Reserve Component with a lower percentage of recruiters reporting they worked more than 60 hours per week was the Naval Reserve.

For the most part, findings were better regarding the percentage of recruiters voluntarily forgoing leave because of job demands. On average, total active duty DoD recruiters reported a decrease (from 69 percent to 66 percent), as did Coast Guard recruiters (from 62 percent to 54 percent). But two Reserve Components—the Army National Guard and Air Force Reserve—had increases in the percentage of recruiters choosing not to take leave because of job pressures (up to 83 percent and 79 percent, respectively).

Improprieties. More good news—The percentage of recruiters perceiving that bending rules to achieve goal in their recruiting command occurs frequently declined from 1998 levels for total active DoD Services (from 28 percent to 22 percent), for Army and Marine Corps recruiters, for total Reserve Components (from 24 percent to 20 percent), and for the Army Reserve. Of note, the 2000 percentages for active duty recruiters are similar to those reported in 1996.

Management/Supervisory support. More mixed results—Improvement in negative reports about support from supervisors was spotty. Overall, about a quarter of active duty DoD recruiters continued to provide negative reports—no significant change from 1998. The Navy, Air Force, and Coast Guard, however, had declining percentages of active duty recruiters who disagreed that supervisor support was good. There was no improvement among Reserve Component recruiters, either overall or within individual Components. In fact, the percentage disagreeing that supervisor support was good increased by 6 percentage points (to 32 percent) for the Army National Guard. Twenty-eight percent of all Reserve and Guard recruiters disagreed that support from supervisors was good.

On the other hand, active duty recruiters reported better teamwork with superiors. The percentage of all active duty DoD recruiters disagreeing that they worked together with their superiors as a team declined from 28 percent to 24 percent. Declines were also reported by all active Services except the Marine Corps. No change occurred, however, for overall Reserve and Guard recruiters or for individual Reserve Components. Twenty-nine percent of all Reserve and Guard recruiters disagreed with the statement that they work with their superiors as a team.

Job satisfaction. Mostly more of the same—On average, for both Active Service and Reserve Component recruiters, there was no change in dissatisfaction with recruiting (44 percent

for active duty DoD, 11 percent for the Coast Guard, and 24 percent for Reserve Components). Air Force recruiters, however, reported a 12 percentage point decline in dissatisfaction, to 25 percent. In contrast, Air Force Reserve recruiters reported an 8 percentage point increase in dissatisfaction, to 17 percent. That increase reversed the gains achieved between 1996 and 1998.

Most active duty DoD recruiters once again reported they would select a different assignment or leave military service if they could do so. Only 27 percent of them would remain in recruiting if given a choice in the next month (unchanged from 1998). The Air Force and Navy were the only active Services to report significant changes—an increase of 6 percentage points for the Air Force (to 48 percent selecting recruiting) and a decrease of 5 percentage points (to 25 percent) for the Navy. On average, there was no significant change for Reserve Components. A slight majority of Reserve and Guard recruiters continued to say they would remain in recruiting (51 percent). The percentage of Army Reserve recruiters reporting they would select recruiting rose by 10 percentage points, to 32 percent.

The topline findings indicate progress on several fronts for individual recruiters. Reported goal achievement, perceptions of achievability, and perceptions about improprieties all showed improvement. The additional resources provided by DoD and the Services appear to have counterbalanced some of the difficulties in the recruiting environment. Recruiters' jobs, however, remained demanding in FY 2000, and approximately a fourth of all recruiters were dissatisfied with the support they received from their supervisors. Also, job satisfaction remained mostly unchanged from 1998 to 2000. The findings from the structural equation modeling of the 2000 survey responses (see Chapters 2 and 3) provide some indication of the relative importance of issues that contributed to job performance, satisfaction, and stress.

Demographic and Assignment Profiles

This section of the report contains summary demographic and recruiting assignment profiles for both active duty production recruiters and Reserve and Guard production recruiters, as well as highlights on various demographic subgroups. By definition, profiles of average recruiters obscure the diversity among recruiters both within and across their Services and Components. In addition, these profiles are based on the recruiter population of interest: recruiters with goals/missions and one or more years of recruiting experience. Officers were also excluded. More detailed demographic and recruiting assignment information for each of the active Services and Reserve Components is available in the *Tabulations of Responses from the 2000 Military Recruiter Survey* (Rockwell, et al., 2002).

Demographic Profiles

Active Duty Recruiters

DoD. The average active duty DoD recruiter was a married White male in his thirties in paygrade E-6 or E-7 who had taken some college courses (see Figure 1.1).[5] The average active

[5] In the demographic profiles, Whites represent only non-Hispanic Whites, and Blacks represent only non-Hispanic Blacks. Also, the following rule was used to determine "average": The modal response category (the category

duty Air Force recruiter, however, was in paygrade E-5 or E-6 and had taken some college courses or completed an associate of arts (AA) degree.

Coast Guard. The average Coast Guard recruiter was a married White male in paygrade E-6 or E-7, was 35 to 44 years old and had taken some college courses or completed an AA degree. Thirty-three percent of Coast Guard recruiters were more than 39 years old, in contrast to only 8 percent of active duty DoD recruiters. Also, 14 percent of Coast Guard recruiters had a bachelor's degree or higher, compared with 8 percent of active duty DoD recruiters.

Reserve and Guard Recruiters

The average Reserve and Guard recruiter was a married White male in paygrade E-7 who had taken some college courses or completed an AA degree. Although the average Reserve Component recruiter was in his thirties, about a third of Reserve Component recruiters were older than 39 (36 percent). Also, 17 percent of Reserve and Guard recruiters had a bachelor's degree or higher. The average paygrade was the same for all individual Reserve Components (E-7) except the Naval Reserve, where the average paygrade was E-5 to E-6.

In summary, the data from the 2000 survey indicate that, on average, active duty DoD recruiters, compared with Coast Guard and Reserve Component recruiters, were relatively young, proportionately less likely to be White, and proportionately less likely to have a bachelor's degree or higher. Reserve and Guard recruiters were proportionately more likely than recruiters in the other two groups to be in a higher paygrade.

Demographic Subgroups

Women. Six percent of all active-duty DoD recruiters were women. Although the proportion of women was highest in the Air Force (11 percent), the numbers of female recruiters in the Army and the Navy were greater than in the smaller sized Air Force. The proportion of female active duty DoD recruiters was lowest in the Marine Corps (2 percent). The Coast Guard also had a relatively high proportion of female recruiters (10 percent). Thirteen percent of recruiters in the Reserve Components were women; there were no significant differences across Reserve Components.

Hispanics. Among all active duty DoD recruiters, 11 percent were Hispanic, with the highest proportion in the Marine Corps (17 percent). Eight percent of Coast Guard recruiters and 8 percent of all Reserve and Guard recruiters were Hispanic. There were no significant differences in the proportions of Hispanic recruiters in the Reserve Components.

Blacks. Twenty-five percent of all active duty DoD recruiters were Black. The proportion was highest in the Army (30 percent). In the Coast Guard, the proportion of Black recruiters was 13 percent. In the Reserve Components, 12 percent of recruiters were Black, with the highest proportions in the Air National Guard (20 percent) and the Army Reserve (17 percent).

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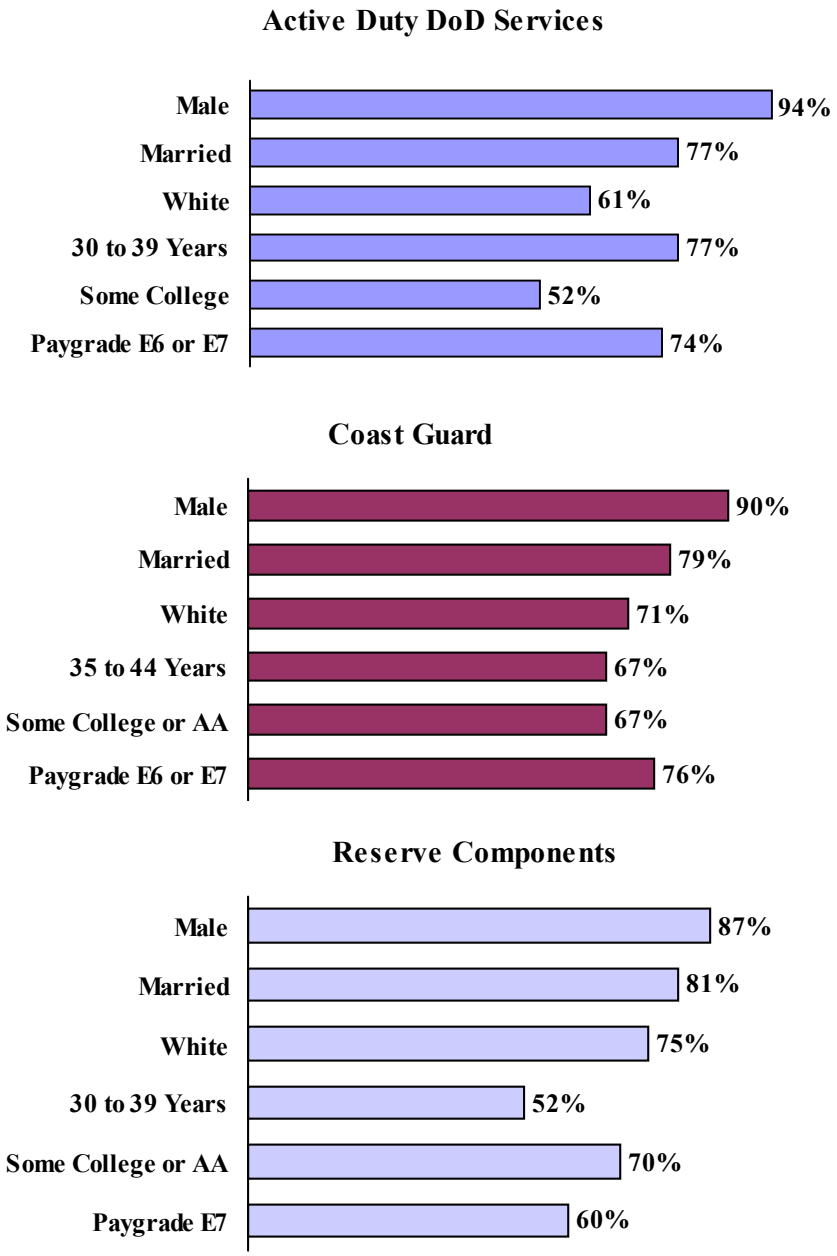
with the greatest frequency) was selected. If that category did not represent at least 51 percent of the respondents, we collapsed it with the adjoining category having the higher percentage of respondents.

Figure 1.1
Demographic Profiles: Active Duty DoD, Coast Guard, and Reserve Component Recruiters



Recruiting Assignment Profiles

Active Duty Recruiters

DoD. The average active duty DoD recruiter had been assigned to recruiting duty more than 1 year but less than 3 years (64 percent), was in the first tour of duty (80 percent), and had team monthly goals/missions (72 percent). When asked if they had volunteered to be recruiters, 41 percent of active duty DoD recruiters said they volunteered for recruiting duty because they wanted it. An equal percentage said they were assigned to recruiting duty without any choice. When asked their reasons for becoming a recruiter, active-duty DoD recruiters checked the "I had no choice" response most often (37 percent). The next most prevalent response was "I believe in my Service and want to share it with others" (29 percent).

Air Force recruiters diverged most from the average-recruiter profile. Only 45 percent of Air Force recruiters had been assigned to recruiting more than 1 year but less than 3 (30 percent had been assigned to recruiting duty for 6 years or more), and only 61 percent were in their first tour of duty. In addition, 92 percent of Air Force recruiters said they had volunteered for recruiting duty because they wanted it, in contrast to 30 percent of Army recruiters, 42 percent of Navy recruiters, and 37 percent of Marine Corps recruiters. The other 8 percent of Air Force recruiters also volunteered for recruiting duty, but 7 percent reported they would have preferred another assignment and 1 percent said they had "volunteered" for recruiting duty but "really had no choice."

Coast Guard. Like the average active duty DoD recruiter, the average Coast Guard recruiter had been a production recruiter for more than 1 year but less than 3 years and was in the first tour of recruiting duty, although the percentages for the Coast Guard were lower: 57 percent and 71 percent, respectively. The majority of Coast Guard recruiters had team monthly goals/missions (75 percent). In contrast to the average active duty DoD recruiter, nearly all Coast Guard recruiters volunteered for and wanted recruiting duty (97 percent). None indicated they had been assigned and not given a choice. Regarding their reasons for becoming recruiters, nearly three fourths said "I believe in my Service and want to share it with others," and 49 percent said "I want to help young people."

Reserve and Guard Recruiters

The profile of the average Reserve and Guard recruiter reflects a seasoned group of recruiters—69 percent had been assigned to recruiting duty for 3 years or more (including 41 percent who had been assigned 6 years or more), and only 52 percent were in their first tour of recruiting duty. A majority said they volunteered for and wanted recruiting duty (80 percent). Only 4 percent said they had been assigned to recruiting duty without any choice. Reserve and Guard recruiters most often checked "I believe in my Service and want to share it with others" (54 percent) and "I want to help young people" (45 percent) as their reasons for becoming recruiters. Two thirds of Reserve and Guard recruiters had personal monthly goals (66 percent).

Air Force Reserve Component recruiters had been on the job a comparatively long time. A majority of Air Force Reserve (59 percent) and Air National Guard (54 percent) recruiters had

been assigned to recruiting duty for 6 years or more. Similarly, a majority of Air Force Reserve (73 percent) and Air National Guard (57 percent) recruiters were in their second or later tours of recruiting duty. More than 94 percent of Air Force Reserve and Air National Guard recruiters volunteered for recruiting duty because they wanted it, in contrast to 66 percent of Army Reserve recruiters.

CHAPTER 2: THE ANALYSIS MODEL

In this chapter we describe a model-based approach we will use to analyze the data collected from the *2000 Military Recruiter Survey*. This approach is commonly known as structural equation modeling with latent variables (SEM). The analyses focus on active duty recruiters with goals/missions and one or more year of recruiting experience.[6] This modeling centers on three pivotal issues: job performance, satisfaction with recruiting, and strain associated with recruiting in a challenging environment. These three issues correspond to the concerns that prompted the development of the first *Recruiter Survey:* the need to enlist enough qualified young men and women to maintain the nation's military forces without subjecting recruiters and their families to highly stressful conditions that adversely affect their quality of life and their job performance (Maxfield, 1990). The other major components of the model are the factors that may affect recruiters' performance, satisfaction with recruiting, and job strain. These factors are well represented in this survey because DoD and the Services have intentionally included items in the various *Recruiter Survey*s to identify situations and concerns associated with high stress among recruiters (Maxfield, 1990).

This model-based approach to examining data from the *Recruiter Survey* departs from previous approaches that relied primarily on extensive crosstabulations with accompanying commentary.[7] We chose the SEM approach because it offers the following advantages.

Comprehensive measurement of concepts. The major concepts discussed in this report—recruiter satisfaction, job performance, and strain—and the components influencing them are relatively broad and multidimensional. We decided that single survey items were inappropriate for measuring these complex concepts. For example, although there is an item in the questionnaire that asks how satisfied the respondent is with recruiting, other items ask whether the respondent would encourage friends to become a recruiter, what the respondent's family thinks of recruiting, and whether the respondent believes that the pay received for recruiting is appropriate. The SEM approach captures all of these items, allowing measurement not only of a personal global evaluation of satisfaction but also aspects related to family, friends, and compensation. Similar comprehensive measurement results can be achieved with all of the components in the model.

Estimation of complex structural relationships. SEM allows the specification of multiple direct and indirect influences on multiple outcomes. With other more common modeling techniques (e.g., ordinary least squares multiple regression), analysts can assess the structural relationships among influencing factors and outcomes, one outcome at a time. SEM

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[6] Because we recognize that active duty and Reserve and Guard recruiters have different missions, we determined that separate analysis of the data for the two groups was appropriate. Following development of the structural model for active duty recruiters, we then evaluated the appropriateness of that model for Reserve and Guard production recruiters. Results of this test are reported in Appendix D.

[7] For the 1996 survey, a supplementary regression analysis was conducted to identify predictor variables for goal achievement and recruiter satisfaction (Condon, Dunlop, Girard, Sundel, & Feuerberg, 1997). The catalogue of products for the *2000 Military Recruiter Survey* includes tabulation volumes covering all questions in the survey.

allows analysts to assess these structural relationships simultaneously, taking the interrelationships among the outcomes into account.

Estimation of the relative and independent strength of influencing factors. SEM not only incorporates a sophisticated approach to measurement and the modeling of structural relationships, it also allows researchers to quantify the relative strength of major influencing factors. For example, analysts can estimate the effects of one influencing factor on another while statistically controlling for the effects of other influencing factors. Thus, they can disentangle the separate effects of related factors on outcomes such as strain, satisfaction with recruiting, and reported job performance. Regression analysis affords some of the same benefits; however, because the model in this report embodies multiple equations with variables subject to measurement error and three dependent constructs, use of traditional regression analysis, unlike use of structural equation modeling, would fail to estimate the model properly.[8]

The presentation of major survey findings is also simplified with the SEM approach. In tabular presentations, effects are presented individually for each survey item included in the display. Analysts using the SEM technique can consider all model elements simultaneously and estimate the effects in concert with other effects. Thus, instead of having many tables and charts containing variable-by-variable results, the findings for a large number of survey items can be organized by outcome and influencing factors and summarized in a relatively few exhibits.

This analysis will describe the relative strength of influencing factors on job-related stress and recruiting satisfaction and goal attainment. This information should provide insights that will be helpful to policy makers and program managers as they consider strategies for addressing recruiters' quality of life and job performance. Some of the factors are inherent to the recruiter's job and may not be alterable by recruiting managers. In this case, the information provided here may only provide insight. However, other identified factors may include job characteristics and circumstances under the control of recruiting managers or policy makers and, if found to be influential, may be considered for change.

The Model

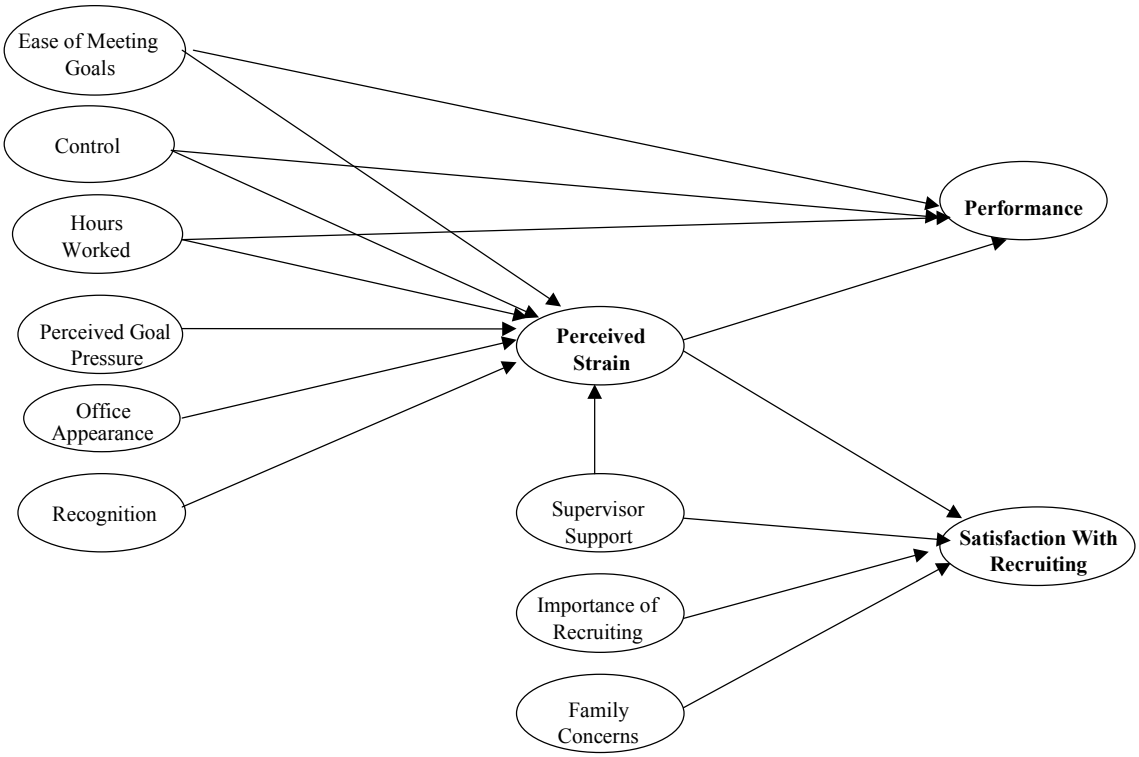
The model in Figure 2.1 depicts the complex relationships among various influencing factors and recruiters' self-reported job performance, satisfaction with recruiting, and stress. Performance and satisfaction with recruiting are the two major outcomes. Perceived strain is depicted as a mediator, channeling at least some of the effects of the influencing factors on the

[8] SEM is an analysis technique that allows the complete and simultaneous tests of the relationships involved in a complex modeling effort after eliminating undesired measurement error in the model. The issue of measurement error and unreliable variable measurements and their effect on multiple regression--and, for that matter, on the field of statistics--has been discussed at length in the published literature (Cochran, 1968, and Subkoviak & Levin, 1977). Werts, Rock, Linn, and Joreskog (1976) further examined correlations, variances, covariances, and regression weights with and without measurement error and concluded that the effects of measurement error on these statistics can have a dramatic effect. The basic concern is that unreliable, measured variables may misrepresent reality and mislead research. SEM removes this concern by explicitly estimating measurement error and then removing it from calculations estimating the magnitude of construct relationships. (Schumacker & Lomax, 1996).

two major outcomes. The influencing factors include ease of meeting goals, control over duty assignment, hours worked, pressure to meet goals, office appearance, recognition for achievement, supervisor support, perceived importance of recruiting, and family concerns.

The model comprises 12 influencing factors and outcomes, more generally called constructs. A construct uses multiple survey variables to represent a single concept, for example, several measures of satisfaction are combined to indicate overall satisfaction. In SEM, constructs may also be called latent constructs depending on the methods used to create the construct for use in the model. The constructs used in this model are latent constructs and include nine influencing constructs, a mediating construct—perceived strain, and the outcome constructs—performance and recruiting satisfaction. The following section provides descriptions of these constructs and their expected interrelationships. For specific information on the survey items used as indicators for each of these constructs, see Table 2.1.

Figure 2.1.
Recruiter Performance and Satisfaction Model



Note. Control = Control Over Duty Assignment.

Table 2.1.
Summary of Survey Items Used as Indicators of the Latent Constructs

Latent Construct *(coding notes)*	**Q #**	**Question Text**
Performance		
(Higher score indicates better performance)	33	In how many of the months of the past fiscal year did you achieve your monthly goal/mission?
	34	What percentage of your recruiting goal/mission did you achieve in the last fiscal year?
	36	Compared to other recruiters from your Service who work in the area served by your MEPS, would you say you are: [responses range from *below average* to *one of the best*]
Satisfaction With Recruiting		
(Lower score indicates greater satisfaction)	42h	Below is a list of statements that relate to aspects of life as a recruiter. I would encourage my friends to become recruiters
	46	If you had the freedom to select an assignment next month, which of the following would you choose?
	56	What do members of your household/immediate family think of your recruiting assignment?
	71a	In general, how satisfied are you with recruiting?
	40i	To what extent do you agree or disagree with the following statements? My pay is appropriate for the job I do
Perceived Strain		
(Lower score indicates greater perceived strain)	42i	Below is a list of statements that relate to aspects of life as a recruiter. I feel emotionally drained from my work
	42j	Below is a list of statements that relate to aspects of life as a recruiter. I feel fatigued when I get up in the morning and have to face another day on the job
	42k	Below is a list of statements that relate to aspects of life as a recruiter. Working with people all day is really a strain for me
	42l	Below is a list of statements that relate to aspects of life as a recruiter. I feel burned out from my job
	42m	Below is a list of statements that relate to aspects of life as a recruiter. I feel frustrated by my job
	42n	Below is a list of statements that relate to aspects of life as a recruiter. I feel like I am at the end of my rope
Ease of Meeting Goals		
(Lower score indicates greater ease of meeting goals)	32a	With reference to your recruiting goals/missions, to what extent do you agree or disagree with the following statements? My monthly goals/missions are achievable
	32b	With reference to your recruiting goals/missions, to what extent do you agree or disagree with the following statements? My assigned market area is adequate to make goal/mission
	35	All things considered, what is the likelihood that experienced recruiters can make goal/mission in your zone/area?
Control Over Duty Assignment		
(Higher score indicates greater sense of control over duty assignment)	6	Did you volunteer to be a recruiter?
	9	Do you think your preferences were considered in your current duty location assignment?
Hours Worked		
(Higher score indicates more hours worked)	10	On average, what is the total number of hours per week you spend performing recruiting related duties?
	12	On average, what is the total number of hours per week you spend on the phone with prospects?
	14	During the past year, did you request annual leave and have the request denied?

Table 2.1. ***(continued)***
Summary of Survey Items Used as Indicators of the Latent Constructs

Latent Construct *(coding notes)*	**Q #**	**Question Text**
Perceived Goal Pressure		
(Lower score indicates greater perceived goal pressure)	32c	With reference to your recruiting goals/missions, to what extent do you agree or disagree with the following statements? Success in reaching goal/mission has a "make or break" effect on my military career
	32d	With reference to your recruiting goals/missions, to what extent do you agree or disagree with the following statements? I am pressured to continue recruiting even after reaching my monthly goal/mission
	32e	With reference to your recruiting goals/missions, to what extent do you agree or disagree with the following statements? I am punished if I fall short of goal/mission
Office Appearance		
(Lower score indicates greater perceived positive office appearance)	22a	To what extent do you agree or disagree with the following statements about your office? My recruiting office presents a professional environment for potential applicants
	22b	To what extent do you agree or disagree with the following statements about your office? My recruiting office presents a pleasant environment for potential applicants
	22c	To what extent do you agree or disagree with the following statements about your office? My recruiting office contributes to my success as a recruiter
Recognition		
(Higher score indicates increased belief that good work will be recognized)	42b	Below is a list of statements that relate to aspects of life as a recruiter. Recruiters are recognized for doing a good job
	42g	Below is a list of statements that relate to aspects of life as a recruiter. Promotion opportunity is better than it would have been without a recruiting assignment
Supervisor Support		
(Lower score indicates higher levels of support from supervisor)	32i	With reference to your recruiting goals/missions, to what extent do you agree or disagree with the following statements? My supervisor will help me if I have trouble making goal/mission
	41b	I have the freedom to personally plan my work and use my judgment as to the best method for recruiting in my assigned area
	41c	The degree to which Recruiting Commands manage office level recruiting activities varies. I receive good support from my supervisors
	41d	The degree to which Recruiting Commands manage office level recruiting activities varies. My superiors and I work as a team
	42a	Below is a list of statements that relate to aspects of life as a recruiter. Supervisors understand and help recruiters with problems
	66f	To what extent do you agree or disagree with the following statements? I feel I am supervised more closely than necessary
Importance of Recruiting		
(Lower score indicates greater perceived importance of recruiting)	42c	Below is a list of statements that relate to aspects of life as a recruiter. Skills attained in recruiting are helpful in securing a good civilian job
	42d	Below is a list of statements that relate to aspects of life as a recruiter. Recruiting is important work
	42e	Below is a list of statements that relate to aspects of life as a recruiter. Recruiting is challenging work
Family Concerns		
(Lower score indicates greater perceived family support)	26b	To what extent do you agree or disagree with the following statements about your formal training and preparation for recruiting duty? Members of my family were well prepared by my Service for the requirements and demands of my recruiting assignment
	57	Are active attempts made by your recruiting command to involve your family in your recruiting job (e.g., special office social events for the entire family, discounted tickets for the family)?
	40g	To what extent do you agree or disagree with the following statements? Recruiter leadership does a good job of keeping recruiters informed of initiatives to improve quality-of-life (e.g., housing, medical, pay, CONUS COLA, childcare)

The Constructs

The model comprises the following 12 constructs:

- **Performance** reflects recruiters' self-reports of goal achievement and their ratings of their performance relative to that of other recruiters in their Service and MEPS areas.

- **Satisfaction with Recruiting** represents recruiters' perceptions of their families' attitudes toward the recruiting assignment, recruiters' own satisfaction with their pay and recruiting, and recruiters' inclination to remain in recruiting and to recommend it to others.

- **Perceived Strain** represents recruiters' perceptions of fatigue, emotional drain, and burnout.

- **Ease of Meeting Goals** reflects recruiters' perceptions of the adequacy of their market for meeting goal, the reasonableness of their goals, and the likelihood that experienced recruiters could make goal in the zone or area.

- **Control Over Duty Assignment** assesses recruiters' sense of control over their situation. It is based on reports of whether they volunteered or were assigned to recruiting duty and whether their preferences were considered in their duty-location assignments.

- **Hours Worked** addresses work time, time spent on the phone with prospects, and annual leave requests that were denied.

- **Perceived Goal Pressure** represents perceived career consequences of goal achievement, pressures to continue recruiting after making goal/mission, and punishment for failing to make goal/mission.

- **Office Appearance** draws on recruiters' opinions about whether their office appears professional and pleasant to potential applicants and whether office appearance contributes to success in recruiting.

- **Recognition** represents recruiters' perceptions that good performance is acknowledged and that recruiting assignments increase opportunities for promotion.

- **Supervisor Support** captures supervisor understanding and help with problems, supervisor expectations, working as a team member with one's supervisor, and freedom from micromanagement.

- **Importance of Recruiting** captures recruiters' perceptions about the importance and challenge of recruiting and whether they think recruiting duty equips them with skills that are transferable to the civilian sector.

- **Family Concerns** captures recruiters' perceptions of family preparation for the challenges associated with recruiting duty, efforts by their recruiting commands to involve families in office social events and other activities, and the effectiveness of recruiter leadership in informing recruiters about new quality-of-life initiatives.

Expected Interrelationships Among the Constructs

In the model depicted in Figure 2.1, the lines connecting the constructs indicate their expected interrelationships. The arrowheads indicate the expected direction of the influence or effect. An effect occurs when a change in one variable results in a change in another variable. For example, the model shows that there is an expected direct effect of ease of meeting goals on performance as well as an indirect effect on both performance and recruiting satisfaction through perceived strain. An indirect effect suggests that the influencing construct affects the outcome through a mediating construct, in this case, strain.

In the paragraphs that follow, we describe more thoroughly the relationships that are being evaluated in this model and our rationale for identifying this structure of relationships. We begin with the predictors of performance.

Influences on performance. In the model, four constructs are expected to have direct effects on performance: ease of meeting goals, sense of control over duty assignment, hours worked, and perceived strain. In addition, ease of meeting goals, control over duty assignment, and hours worked are expected to affect performance indirectly through effects on strain. That is, ease of meeting goals, control over duty assignment, and fewer hours worked are expected to decrease strain. Decreased strain, in turn, is thought to positively affect performance. Each of these suggested impacts is described next.

- Ease of meeting goals is expected to increase performance directly as well as indirectly by decreasing strain. When recruiting is extremely difficult, we would expect to see decreased performance and increased strain, which would further decrease performance. As noted in Chapter 1, the recruiting environment in FY 2000 was highly challenging for nearly all recruiters. They were competing with colleges and employers in a booming economy for young adults who seemed less and less interested in military service. Findings from the *1996* and *1998 DoD Recruiter Surveys* indicated that many recruiters thought that even experienced recruiters had difficulty meeting goal in their areas (Condon, Dunlop, et al., 2000). It is likely that this situation, a perception that goals were not achievable, was stressful for recruiters and may have affected their performance.

- Sense of control over duty assignment is also expected to influence performance directly as well as indirectly through perceived strain. Sense of control over duty assignment may directly affect performance by placing those who desire to be recruiters or who have the necessary skills to be successful recruiters in the recruiting role. Moreover, one also might expect that service members who choose to be recruiters will perhaps experience lower stress levels than recruiters who had no say in the decision, because they have chosen the role. But recruiters, particularly in the

Army and the Marine Corps, are often assigned to recruiting duty without any choice. For some, the involuntary transition to recruiting duty asks them to perform tasks for which they are not well suited; for others, the potential long-term career effect of poor performance is highly stressful and this stress may hinder their performance as recruiters. Assignment to recruiting duty also may require individual or family moves that may prove stressful and thus hinder performance.

- Hours worked is the third construct expected to affect performance both directly as well as indirectly through perceived strain. It is likely that successful recruiters are working long hours to accomplish their goals, as do many other military members, but that the hours they are working are not so numerous that their stress levels are increased and their performance affected.[9] It seems reasonable that excessive hours spent in recruiting might actually hinder performance by increasing recruiter strain. Throughout most of the nineties, large numbers of recruiters reported working 60 hours or more per week. This may have contributed to many recruiting successes. Elucidating the ways in which increased hours worked affects recruiting will be one important contribution of this model.

In the model, four additional constructs are thought to indirectly influence performance through perceived strain: goal pressure, office appearance, recognition, and supervisor support. None of these constructs is thought to have a direct impact on performance. Absence of undue pressure to meet goals, a professional office appearance, a belief that good performance will be recognized, and support from one's supervisor are believed to decrease strain and thereby increase performance. The role of each of these constructs in the model is described below:

- Excessive pressure to meet or exceed goals is expected to influence performance indirectly through its effect on perceived strain. Relentless pressure, a perception of a punitive atmosphere, and the long-term consequences on one's military career of not making goal will increase strain and, in turn, affect performance. A work atmosphere that is more positive in these areas is expected to result in lower strain and more positive performance.

- An office that contributes to successful recruiting is likely to decrease the strain on recruiters and positively affect their performance. In the 1998 survey nearly 60 percent or more of all Active and Reserve Component recruiters thought their offices were inviting to prospects. To recruiters, a fully outfitted office may represent tangible validation by their Service for the importance of their recruiting job.

- The belief that good work will be recognized is expected to decrease strain and thereby have a positive impact on performance.

[9] Average hours worked by officers and enlisted members across active duty DoD Services in 1999 was 54.7 hours. For E5–E6s, the average across all Services was 54.3 hours; for E7–E9s, the average was 55.1 hours. Thus, the long work week for recruiters may not be atypical among military members (Helba et al., 2001).

- Support by one's supervisor is expected to decrease the strain felt by recruiters and through this decrease in strain affect self-reported performance. We expect that a successful recruiter will have decreased strain because he or she believes that adequate and appropriate support is available from his or her supervisor.

Influences on satisfaction. In the model, the second outcome variable is satisfaction with recruiting. The model indicates that strain is expected to have an effect on satisfaction with recruiting. Because of the expected relationship between strain and satisfaction with recruiting, the same influencing constructs that indirectly influence performance through strain are also thought to affect satisfaction with recruiting indirectly through strain. These include ease of meeting goals, control over duty assignment, hours worked, perceived goal pressure, office appearance, recognition, and supervisor support. Each construct will have the same effect on strain as described earlier with regard to performance. As a result of their influence on strain, these constructs are also expected to influence satisfaction. In general, it is expected that with lower levels of strain will come increased satisfaction.

As an example of these relationships, one can trace the path from perceived goal pressure to satisfaction through strain in much the same way that we did with regard to performance. Excessive pressure to meet or exceed goals is expected to influence satisfaction indirectly through its effect on perceived strain. We expect that successful recruiters will perceive little undue pressure on themselves to meet or exceed goal. Without this excessive pressure, they are likely to experience less significant levels of stress. Lower stress levels, in turn, will be related to higher levels of satisfaction. The same logic can be used to trace pathways from ease of meeting goals, control over duty assignment, hours worked, office appearance, and recognition through perceived strain to satisfaction.

Three constructs are expected to directly affect satisfaction with recruiting: supervisor support, importance of recruiting, and family concerns. In the points that follow, we describe the expected relationships between satisfaction with recruiting and supervisor support, importance of recruiting, and family concerns:

- Support by one's supervisor is expected to directly affect a recruiters' satisfaction with recruiting. We expect that a recruiter who is adequately supported by his or her supervisor will be more satisfied with recruiting than a recruiter who lacks support from his or her supervisor.

- Importance of recruiting is expected to have a direct effect on satisfaction. Recruiters with positive attitudes about the importance of their jobs and the value of recruiting are likely to be more satisfied than recruiters who look upon the job less positively.

- Decreased family concerns is expected to lead to higher satisfaction with recruiting. Recruiters' assignments sometimes cause hardship for their families. Among these hardships are the long hours recruiters spend away from home and the stresses associated with being assigned to high cost-of-living areas or areas isolated from military bases and their amenities. We expect that if recruiters believe that the

military is giving support to their families in the face of these difficulties, they will be more satisfied with their recruiting assignments.

Concluding Comments

The model described in this chapter was developed in consultation with DoD personnel after preliminary modeling efforts that explored measurement issues and potential linkages related to these research questions. For our preliminary modeling and the final modeling reported in the next chapter, we used SAS® PROC CALIS, a structural equation modeling software package. PROC CALIS allows us to evaluate two important aspects of a model: the validity of the measurement structure of the model (which is the assignment of specific survey items as indicators for the constructs); and the interrelationships among the constructs described above. As we worked with the data, PROC CALIS provided us with important information about how the model could be improved, how well our specified model mirrored the relationships that exist in the data, and the relative and actual strengths of the relationships between our constructs.

In the next chapter we describe the process we used to finalize the model, our assessments of how well it actually "fits" the data derived from 3,640 recruiters' survey responses, and what the model can tell us about the interrelationships among the nine influencing constructs, perceived strain, self-reported job performance, and satisfaction with recruiting.

CHAPTER 3: THE STRUCTURAL MODEL

In this chapter we briefly describe the method used to construct the *2000 Military Recruiter Survey* (*MRS*) model, highlight key findings, and present other modeling results and information. The model discussed in this chapter covers active duty production recruiters (those with goals/missions and at least 1 year of recruiting experience). Reserve Component recruiters are discussed in Appendix D.

Model Construction

We adopted a two-stage approach for model construction. In the first stage we evaluated the measurement of the constructs.[10] That is, we assessed the degree to which model indicators grouped together to form the 12 constructs specified in Chapter 2. Each construct was first evaluated separately to determine its measurement characteristics.[11] After we completed this task we conducted a confirmatory factor analysis to assess the overall integrity of the constructs as a group. That analysis provided support that the 42 indicators in the model measured the corresponding latent variables, or constructs. This was important because if the measurement model of constructs is statistically or substantively unsound, any measure of the structural relations among constructs is literally meaningless.[12]

In the second stage of model construction we developed the structural model, which identifies the interrelationships or paths of influence among the constructs. Once again, the model development process was exploratory. Although achieving good fit between the model and our data was an important goal, that goal was not the overriding determinant of changes in the model. During each iteration of the development process, we assessed potential changes for substantive intelligibility on the basis of our knowledge of the questionnaire and recruiting realities. We made changes in the structural model only when they were supported by our understanding of the dynamics of the recruiting environment. For example, even though model diagnostics suggested that a direct link between hours worked and satisfaction with recruiting would improve model fit, we did not add this path to the model because we expected that hours worked would be one of several constructs that influence satisfaction only indirectly, through perceived strain.

After we obtained the final structural model, we cross-validated it by using a subset of sampled recruiters to determine further whether the findings presented in this report reflect

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[10]Descriptive statistics and zero-order correlations for indicator variables can be found in Appendix E.

[11]Separate principal components analyses were conducted for each construct. The results of the first principal components analyses were reviewed carefully. Where appropriate, some survey items included as observed indicators of a construct were deleted and others were added. This was done for both statistical and substantive reasons. See Appendix F for standardized estimates for the active duty recruiter measurement model by factors.

[12]During testing of the measurement model, the covariance matrix of the constructs was unconstrained and coefficients were estimated with a maximum likelihood technique. We concluded from the results that the fit was adequate and structural modeling could proceed. Fit statistics included chi-square (χ^2) = 3814 ($p < .0001$), a goodness of fit index (GFI) equal to 0.93, and a comparative fit index (CFI) of 0.92.

recruiters' perceptions of their jobs and quality of life or whether the findings are an artifact of our modeling strategy. Our conclusion, reported in the model validation description in Appendix G, is that the full model holds and is representative of active duty production recruiters.

Overall, modeling was successful. All but two of the expected relationships among constructs (e.g., that increases in perceived strain negatively affect satisfaction with recruiting) were confirmed by the model.[13] The model was also successful, to varying degrees, in explaining the variance of the mediating and outcome constructs. The influencing constructs in the *MRS* model explained most of the variance in satisfaction with recruiting (R^2 = .85) and half of the variance in perceived strain (R^2 = .50). The model constructs proved somewhat less successful in accounting for variation in self-reported performance (R^2 = .34).

In addition, some of the goodness of fit tests that we used to evaluate model quality indicated a good fit between the model and the 2000 survey data for active duty production recruiters. The chi-square test and model residuals, however, indicated that the model's fit is less than perfect. We discuss our evaluation of model quality and related caveats in more detail later in this chapter.

Taking all these factors into account, we concluded that the model accurately reflects the direction and relative influence of factors affecting perceptions of recruiter strain, performance, and satisfaction with recruiting. We also believe the model findings will be useful to officials responsible for making decisions about recruiting policies and programs.

The results of the structural equation modeling (SEM) effort are displayed in Figure 3.1.[14]

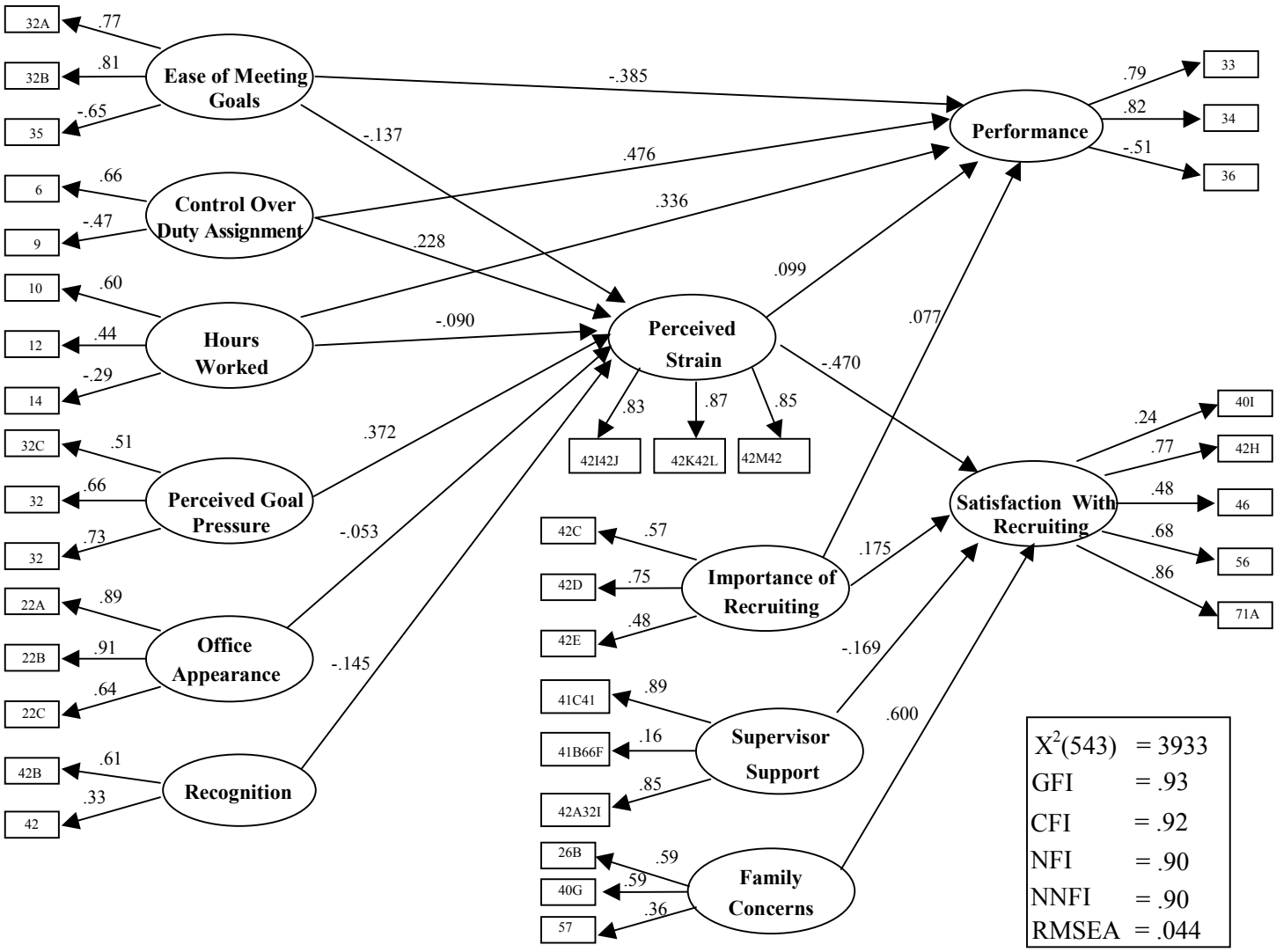
Key Findings

The standardized structural coefficients in Figure 3.1 indicated the relative direct influence of constructs on performance and satisfaction with recruiting. For example, the direct

[13]Two model paths, from supervisor support to satisfaction with recruiting and from importance of recruiting to performance, yielded estimates that were different from our expectations. We did not expect a relationship between perceived importance of recruiting and performance, and expected that increases in supervisor support would be associated with increases in satisfaction with recruiting. Although the supervisor-satisfaction relationship was contrary to expectations and, therefore, problematic, it should be noted that neither importance of recruiting nor supervisor support was relatively influential in explaining performance and satisfaction with recruiting, respectively.

[14]One technique used during model construction, the use of parcels, is identified but not explained in this figure. Parcels result from combining observed indicators (survey items) and using the average of two indicators as input to the modeling process rather than using each indicator separately. In this figure parceling is indicated by question labels such as 42I42J (which indicates the average of items 42I and 42J). The use of parcels was introduced into the modeling process as a strategy to condense the complexity of the model. The constructs perceived strain and supervisor support both had a large number of indicator variables used in their identification. Literature on the use of parcels suggests that, when used for simplification of a construct, inter-item variability is reduced and measurement of the latent construct may be enhanced (MacCallum, Widaman, Zhang and Hong, 1999). Comparison of model solutions with and without the use of parcels indicated that the substantive findings, regardless of method, were the same.

Figure 3.1.
Standardized Coefficients for the Active Duty Model



effect of hours worked on performance should be interpreted as follows: A one standard deviation increase in hours worked will lead to an increase of .336 standard deviations in performance (differences between standardized and unstandardized coefficients are discussed later in this chapter). Coefficient values can range between – 1.0 and 1.0; the higher the absolute value, the greater the influence of the construct. For these constructs, the positive or negative sign of a coefficient usually indicates the direction of influence (i.e., a positive sign indicates that the influencing and outcome constructs both move in the same direction, whereas a negative sign indicates that they move in opposite directions).

The interpretation of a construct coefficient's sign, however, must be carefully applied when reviewing survey data, including the *2000 Military Recruiter Survey* data. Many survey responses are coded directionally—for example, from *very satisfied* to *not at all satisfied* or from *strongly agree* to *strongly disagree*. The actual coding of questions must be consulted to determine the direction of influence. For example, in our model, the structural coefficient for the influence of hours worked on perceived strain is –.090, seemingly indicating an inverse relationship between the two constructs. However, the coding of perceived strain is opposite of what might be expected: As numeric values of strain increase, strain itself substantively decreases as measured by the survey questions (e.g., responses range from 1 = *strongly agree* to 5 = *strongly disagree* for "I feel 'emotionally drained,' 'burned out,' 'fatigued'"). Thus, the coefficient –.090 actually indicates that as hours worked increases, perceived strain increases. See Table 2.1 for information on coding of all indicators included in our model.

From the information in Figure 3.1 and Table 2.1, we drew the following major conclusions about influences on performance and satisfaction with recruiting.

Influences on performance. Of the five constructs modeled as influencing performance, two—importance of recruiting and perceived strain—were substantially less influential than ease of meeting goals, hours worked, and control over duty assignment. For example, the coefficient for hours worked (.336) is more than three times that estimated for perceived strain (.099). Stated as predictions based on the direction of influence, the major direct influences on performance were:

- The more control recruiters had over their duty assignments, the higher their performance (structural coefficient of .476).
- The greater their perceived ease of meeting goals, the higher their performance (-.385).
- The more hours recruiters worked, the higher their performance (.336).

The structural coefficient linking strain and performance had the expected direction (i.e. as strain increased, performance declined), but perceived strain was less influential than expected, as indicated by the relatively low structural coefficient (.099). Because the substantive influence of perceived strain on performance was quite small, the indirect effects of the six constructs influencing perceived strain also had a limited impact on performance.

The linkage between perceived importance of recruiting and performance was relatively small in terms of influence (.077) and the direction of influence was counter-intuitive. While the relationship was not in our expected model (Figure 2.1) it was included in the model for statistical reasons. Future research should be cognizant of this relationship and its counter-intuitive finding.

Influences on satisfaction with recruiting. Reviewing the constructs influencing satisfaction with recruiting, we see that they fall into one of two groups based on the magnitude of the estimated structural coefficients. Family concerns and perceived strain clearly influenced

satisfaction with recruiting more than supervisor support or importance of recruiting did. The major findings, then, were:

- Recruiters perceiving that family concerns were being addressed were more satisfied with recruiting (.600).
- The lower the perceived level of stress, the higher the satisfaction with recruiting (-.470).
- The higher recruiters' perceptions about the challenge, importance, and value of recruiting, the more satisfied they were with recruiting. However, the influence of importance of recruiting on satisfaction with recruiting was relatively weak (.175).
- The influence of supervisor support on satisfaction with recruiting was also weak (-.169). In addition, its influence was in a direction counter to our expectations. As supervisor support increased, satisfaction with recruiting decreased. Upon reflection, there are reasonable questions regarding the meaning of the support construct, as it contains survey indicators regarding both support and micromanagement.

Because perceived strain was a strong predictor of satisfaction with recruiting, the six constructs influencing perceived strain also had important indirect effects on satisfaction with recruiting. These indirect effects exhibited a somewhat more complex series of influences than the direct influences on performance and satisfaction with recruiting. Our interpretation is that there are three groups of influencers with indirect effects on satisfaction with recruiting; they can be categorized on the basis of their direct influences on perceived strain as highly influential, moderately influential, and marginally influential. Goal pressure and control over duty assignment fall into the first highly influential group. Recognition and ease of meeting goals fall into the second group. Major findings regarding constructs influencing perceived strain (with indirect effects on satisfaction with recruiting) presented in order of relative strength were:

- As perceived goal pressures increased, perceived strain increased (.372).
- As control over duty assignment increased, perceived strain decreased (.228).
- As perceptions of ease of meeting goals increased, perceived strain decreased (–.137).
- As perceptions that recruiting efforts are recognized and rewarded increased perceived strain decreased (–.145).

The remaining two constructs fall into the third, marginally influential group that indirectly influences satisfaction with recruiting through strain. These constructs had the expected coefficient directions with strain, but relatively low levels of influence: As hours worked increased, perceived strain increased (–.090); and favorable perceptions of office appearance led to lower perceived strain (–.053).

Other SEM Results and Information

Findings on Indirect and Total Effects

Up to now we have presented standardized coefficients only for direct connections between adjacent latent constructs. In this section, we will discuss the indirect effects on performance and satisfaction with recruiting of the constructs that are filtered through the mediating construct of perceived strain (ease of meeting goals, control over duty assignment, hours worked, perceived goal pressure, office appearance, and recognition). Also, we have not considered the total effects on performance of the three influencing constructs that affect it both directly and indirectly (ease of meeting goals, control over duty assignment, and hours worked). SEM uses a system of mathematical equations to model those multiple paths of influence. Thus, when considering effects on performance and recruiting satisfaction, analysts can consider factors that have direct, indirect, or both direct and indirect (total) effects on the two outcomes.[15]

Ease of meeting goals, for example, had both direct and indirect influences on performance. Its total effect on performance can be broken into direct and indirect parts that are easily defined and calculated. The direct effect of ease of meeting goals on performance is the coefficient connecting the two constructs (–.385). The indirect effect (–.014) is the product of the coefficients between, first, ease of meeting goals and strain (–.137) and, second, strain and performance (.099). The total effect of perceived ease in meeting goals on performance is –.399, which is the sum of the direct (–.385) and indirect (–.014) effects. Including coefficients of total effects and indirect effects facilitates a more complete understanding of model relationships than that indicated by direct effects alone.

Table 3.1 presents calculated indirect and total effects of the influencing constructs on satisfaction with recruiting and performance. The results presented in this table lend support in two ways for our conclusion that the indirect effects through strain to performance are relatively minor. First, there are only small differences between the total effects coefficients and the direct effects coefficients, indicating that adding in the indirect effect does not yield much change. Second, the calculated indirect effects on performance are extremely small (absolute values ranging from .01 to .04) when compared with the size of the direct effect coefficients (absolute values ranging from .08 to .48) for performance.

The calculated indirect effects on satisfaction with recruiting shown in Table 3.1 lend support to our greater interest in the indirect effects of the influencing constructs on satisfaction with recruiting through perceived strain. These coefficients are, on average, larger than the indirect effects on performance (absolute values ranging from .02 to .17). The most important of these effects (based on relative size of the coefficients) are the indirect effects of goal pressure and control over duty assignment on satisfaction through strain.

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[15]See Asher (1983) for a discussion of the usefulness of measuring and comparing direct and indirect effects when trying to identify operative causal mechanisms in a model.

Table 3.1.
Standardized Total and Indirect Effects of Influencing Constructs on Satisfaction With Recruiting and Performance

	Type of Effect		
Influencing Construct	**Indirect Effect on Satisfaction**	**Indirect Effect on Performance**	**Total Effect on Performance**
Office Appearance	0.025	– 0.005	
Recognition	0.068	– 0.014	
Goal Pressure	– 0.175	0.036	
Ease of Meeting Goals	0.064	– 0.013	– 0.398
Hours Worked	0.042	– 0.009	0.327
Control Over Duty Assignment	– 0.107	0.023	0.499

Standardized Versus Unstandardized Coefficients

The standardized and unstandardized results of the structural model are presented in Table 3.2. Figure 3.1 presents only standardized results. Both types of coefficients are interpreted similarly to the interpretation of coefficients estimated by using traditional linear regression. That is, a one-unit change in an independent variable (our influencing and mediating constructs) is expected to lead to a θ unit change in the dependent variable (our outcome constructs). The value θ is the coefficient associated with the independent variable, and the magnitude of change is expressed in terms of the metric of the dependent variable. The standardized and unstandardized coefficients differ, however, with respect to the metric used for interpretation.

To illustrate the difference, imagine that height is regressed on weight and the resulting unstandardized coefficient estimated for height is 5.5. The results can be interpreted in terms of the metric used to measure both height and weight. If height is measured in inches and weight is measured in pounds, then the results of the regression produce an expectation that, on average, an increase of 1 inch in height results in a predicted increase in weight of 5.5 pounds. For standardized coefficients, the metric is the standard deviation of the measures involved. In the example just presented, a 1.0 standard deviation increase in height would correspond to a 5.5 standard deviation increase in weight.

The interpretational framework just presented, in the example is complicated by the fact that SEM deals with latent constructs that do not have inherent metrics, such as height and weight. Instead, their metrics, for modeling purposes, are set by the observed responses to survey questions that are considered to be influenced by these latent constructs. The metric of the constructs is set by constraining the coefficient of one observed variable to equal one. This

means that variation in the construct is measured in the metric of that variable.[16] All of the response variables used to set the metric for the constructs are Likert scales. Most are 5-point scales ranging from *strongly agree* to *strongly disagree*. Two constructs, control over duty assignment and hours worked, are anchored on 4- and 6-point Likert scales, respectively.

Similar to the height and weight example, one can interpret structural coefficients in behavioral terms by using unstandardized coefficients or in statistical terms by using standardized coefficients. In Table 3.2, the unstandardized and standardized coefficients representing the effect of perceived strain on satisfaction with recruiting are –.54 and –.47, respectively. The unstandardized coefficient indicates that a one-point increase in strain can be expected to produce a .54-point decrease in satisfaction (an inverse relation). Similarly, the unstandardized coefficient indicates that a one standard deviation increase in strain can be expected to produce a decrease of .47 standard deviations in satisfaction.

Evaluations of Model Quality

We used a variety of diagnostic tests to evaluate the quality of the active duty *MRS* model. From the perspective of face validity, the model is successful because all but one of the coefficients matched expectations. That is, the direction of influence expected was confirmed by the model. For the construct that did not match expectations, it contained survey indicators with conflicting directions.

Other evaluations of model quality included: consideration of the percentage of variance explained for each dependent construct; a chi-square test assessing the degree to which the implied model covariance matrix matched the observed covariance matrix; an examination of model residuals; and consideration of several other goodness of fit indexes. The results obtained were mixed. Some test results indicated that this model fits the data well. Other results were less favorable. We describe and interpret the findings from our evaluations of the model and indicate possible ways to address identified problems in future modeling efforts.

Explanatory Power

As indicated earlier, the explanatory power of the model varied for the three outcome constructs. The measurement and modeling of satisfaction with recruiting were quite good.

Perceived strain was less completely explained but was, nonetheless, well modeled by the constructs. It might be appropriate, however, to consider additional sources of perceived strain in future efforts to develop a more complete model of this construct. The amount of variance in self-reported performance explained by the model was the least strong of the three outcome constructs—just slightly more than one third (34 percent).

[16]A technical note: In the computer code used to estimate the model, the coefficient for the linkage between one observed variable and the latent construct is set at one. For the unstandardized coefficients this constraint is reported as a coefficient equal to one. In the standardized estimates, the estimate most often will not equal one.

Table 3.2.
Standardized Coefficients, Unstandardized Coefficients, and Standard Errors for the Structural Model

	Outcome Constructs					
	Perceived Strain		Performance		Satisfaction With Recruiting	
Influencing Construct	**STD**	**UNSTD**	**STD**	**UNSTD**	**STD**	**UNSTD**
Office Appearance	–.053	–.045 (0.015)				
Recognition	–.145	–.201 (0.036)				
Goal Pressure	.372	.551 (0.056)				
Ease of Meeting Goals	–.137	–.131 (0.023)	–.385	-.411 (0.031)		
Hours Worked	–.090	–.102 (0.054)	.336	.425 (0.036)		
Control Over Duty Assignment	.228	.213 (0.031)	.476	.499 (0.054)		
Importance of Recruiting			.077	.146 (0.060)	.175	.337 (0.040)
Supervisor Support					–.169	–.168 (0.032)
Family Concerns					.600	.814 (0.060)
Perceived Strain*			.099	.111 (0.036)	–.470	–.538 (0.024)

*Mediating construct.
Notes. STD = standardized coefficients; UNSTD = unstandardized coefficients; standard errors are enclosed in parentheses.

The influences of three of the constructs used to predict performance (ease of meeting goals, control over duty assignment, and hours worked) were strong, as reflected in model coefficients. These findings lead to two lines of thought. The first considers factors unmeasured by the survey that could have considerable influence on performance. Among the potential factors influencing performance is geographic region (e.g., West, South, Northeast). The propensity of youth to enlist in the military varies by region (Wilson et al., 2000), so it is reasonable to expect that performance may vary similarly. Within a particular region, many factors can affect an individual recruiter's performance, such as school system characteristics, unemployment rates, socioeconomic status (SES), and the demographic makeup of a recruiter's

area. One of the most attractive features of this line of thought is that it is testable. Although it would require a fair amount of effort, indicators related to geographic region could be appended to survey records and the model could then be reestimated with those factors included. Another testable factor is Service. Each Service recruits different numbers of recruits and has slightly different requirements and styles of recruiting. These are just a few ideas for additional factors to explain recruiter performance.

The second line of thought considers the possibility that the performance construct itself is problematic. We recommend an examination of the psychometric qualities of the measures used for performance and consideration of the possible use of external, rather than self-report, measures of performance. This suggestion is also testable. The model can be reestimated after incorporating external measures of performance into the *2000 MRS* data.

Measures of Model Fit

The first four goodness of fit indexes described are easy to interpret because they typically range from zero to one, with one indicating perfect model fit. The SEM literature indicates that an index value higher than .90 indicates a good fit for a structural model with latent variables. The goodness of fit index (GFI), provides "a measure of the relative amount of variances and covariances jointly accounted for by the model" (Jöreskog & Sörbom, 1981, p. I.41).

Bentler and Bonnet's (1980) normed fit index (NFI) has been proposed in the literature as an alternative to the chi-square test, which has disadvantages regarding sample size and model complexity that we discuss below. Although the NFI has the advantage of being easily interpreted, it has the disadvantage of sometimes underestimating goodness of fit in small samples. A variation on this measure is the non-normed fit index (NNFI), which has been shown to be a better measure of model fit for all sample sizes. The comparative fit index (CFI) is similar to the NNFI in that it provides an accurate assessment of fit regardless of sample size.

The root mean square residual represents the average of the fitted residuals and may be used to compare models fitted to the same data. The root mean square error of approximation (RMSEA) is a goodness of fit index which Browne and Cudeck (1993) described as "a measure of the discrepancy per degree of freedom for the model" (p. 144). For RMSEA, perfect model fit is indicated by the lower bound value of zero. As a rule of thumb, a value of the RMSEA of .05 or less indicates a close fit of the model in realation to degrees of freedom.

We used all of these indexes to measure the results of the *MRS* modeling effort. All of them had values indicating that our structural model accurately represents interrelationships among constructs measured by the *2000 MRS* data. These measures are presented in Figure 3.1.

Chi-Square Test and Model Residuals

In addition to the GFI, NFI, NNFI, CFI, and RMSEA measures, we used two others that are more sensitive to sample size and model complexity: the chi-square test and the examination of model residuals. These measures suggested a less-than-perfect model fit.

A chi-square test compares the observed covariance matrix for the survey to that implied by the structural model. If these two matrices do not differ significantly, model fit is considered to be satisfactory. The results for this model, however, indicated a significant difference: The chi-square value was 3934, with $p > .0001$. Even when we divided chi-square by the degrees of freedom for the test, 543, the resulting value, 7.2, did not meet conventional rule-of-thumb standards (should be less than 2) in the test of no difference between the observed and model covariance matrices (Hatcher, 1994). We did not conclude, however, that we needed to modify our model because of this finding. Although the chi-square test is considered useful, it is also generally acknowledged that chi-square values should be interpreted with caution and supplemented with other measures of model fit because the chi-square test is influenced by factors other than the validity of the theoretical model. These factors include sample size (the larger the sample size, the more likely the rejection of the model) and the complexity of the estimated model (the more complex the model, the less likely a good fit). Given our large sample size (more than 3,000 active duty respondents) and model complexity and given that our other measures indicated adequate fit, we decided that judging model adequacy solely on the basis of the chi-square findings would not be appropriate.

Another indicator of fit—model residuals—is more visual. Although model residuals are less affected than the chi-square test by sample size, they also indicated possible problems in our model. Figure H.1 (in Appendix H) presents standardized residuals in a bar chart. Residuals in this figure are centered about zero, as they should be, but a large number of residuals exceed two standard deviations (thereby representing significant deviations from the predictions one would obtain from a model perfectly fitting the observed survey data). The interpretation we offer of this figure is that, while the model is centered or oriented correctly, there are significant sources of "noise" in the model as estimated. This "noise" is not centralized in any one or two concepts but is, rather, a feature of this complex multivariate, multi-equation model assessing the interrelationships among 12 constructs and 42 survey items.

Because of the known difficulties with the chi-square test and the observed distribution of model residuals, we place more importance on the results we achieved with the fit indexes that are less sensitive to sample size and model complexity. Thus, despite the results of the chi-square and model residual results, we continue to believe that our structural model accurately represents interrelationships among constructs measured by the *2000 MRS* data. This judgment is made with the caveats noted earlier that alternative indicators of performance and more influences on perceived strain should be considered in future *MRS* modeling efforts.

In this chapter we presented the statistical results obtained from our effort to use a model-based approach to summarize important *2000 MRS* findings. In the discussion of model construction we outlined the post hoc nature of our modeling effort, and in the preceding discussion of model quality we noted both favorable and unfavorable indicators. We believe that future revisions to the *MRS* questionnaire and reports of survey findings could profit from a careful consideration of the constructs (as distinguished from individual questions) that might be included in future models. If possible, existing scales or indexes representing constructs of interest with known properties and reliabilities might be used in the *MRS*. Focusing questionnaire construction on the comprehensive measurement of important constructs would, we believe, yield more precise and useful reports of survey findings.

CHAPTER 4: CONCLUSION

The analyses presented in this report significantly extend the quantitative understanding of factors influencing active duty members' self-reported performance and satisfaction with recruiting, as well as the role of strain in explaining differences in performance and satisfaction. Based on what recruiters say, we have identified job characteristics and factors that might influence these important outcomes either directly or indirectly.

Performance. The model does not predict differences in reported job performance as well as it predicts differences in satisfaction with recruiting, but shows that these factors, in order of their strength in the model, will *increase* performance:

- increasing the sense of control over duty assignment,
- increasing ease of meeting goals, and
- increasing the number of hours worked.

The influence of perceived strain on performance is not substantively important, though it is statistically significant. Thus, the indirect effects of job characteristics and factors on performance through strain are less noteworthy than the indirect effect on satisfaction through perceived strain.

Satisfaction with Recruiting. The model shows that these factors will *directly increase satisfaction with recruiting*. In order of their strength in the model, they are:

- increasing attention to family concerns and
- increasing emphasis on the importance of recruiting.

The model also indicates that one of the strongest influences on satisfaction is perceived strain; therefore *decreasing strain will directly increase satisfaction with recruiting*. In order of their strength in the model, the following job characteristics and factors will decrease strain, thereby increasing satisfaction:

- decreasing excessive goal pressure,
- increasing control regarding duty assignments,
- increasing recognition for work well done,
- increasing ease of meeting goals,
- decreasing the number of hours worked, and
- improving office appearance.

What do the findings imply for possible strategies for increasing satisfaction and performance and decreasing strain? The following items provide suggestions translated from recruiter survey responses through the model findings:

Providing the tools to aid the recruiting job:

- Increasing recognition or reinforcement for work well done,
- Emphasizing positive consequences of making goal and deemphasizing the negative consequences of missing goal, particularly when performance in most months is good,
- Recognizing that not all recruiting markets are equal, and giving consideration of that fact in providing recognition, and
- Ensuring that the recruiting office supports the recruiting mission image and messages.

Continuing to address family issues:

- Showing command concern for families through family involvement and education on the demands of the job.

Supporting the recruiting career field:

- Emphasizing the importance and value of recruiting,
- Providing (additional) incentives for volunteering or extending the tour of recruiting duty,
- Allowing recruiters to exercise some influence on duty location assignment, and
- Allowing unsuccessful recruiting salespersons who give their best effort to transfer without penalty.

Further Research

Analytic Groups

Despite the strength of this model, further analyses would be useful in two areas. This model is based only on data from active duty recruiters. Initial testing on Reserve recruiters indicated that this model is not as strongly predictive for these recruiters (see Appendix D). Developing a model of interrelationships for Reserve recruiters would provide policy-relevant information tailored to this important group of recruiters.

Along a similar line, previous recruiter surveys as well as tabulations from the *2000 Military Recruiter Survey* clearly show Service-related differences in demographics, job characteristics, and issues. Given these findings, it is reasonable to assume that the way in which strain, performance, and satisfaction are influenced by factors identified in this model may differ for the individual Services. In future analyses, identifying these Service-related differences

could help policy makers develop Service-specific policy recommendations for improving recruiters' quality of life.

Additional Model Development

The prediction of performance by this model, as discussed, was not as strong as the prediction of strain or satisfaction. It is likely that other important factors influence self-reported performance. This raises another important issue. This analysis included only self-reported performance, available from the survey results. An additional, more powerful, analysis that could yield useful results would be to use actual performance data as an outcome variable. Further, the addition of economic indicators and market characteristics that might influence recruiters' actual performance, such as unemployment rate and socioeconomic status of the recruiting market, could add to the explanatory power of this model.

Overall recruiting success, as measured by meeting accession goals, has varied over time and varies, as noted, by Service. Individual recruiting success also varies. There will always be exceptional performers, even under the most difficult job demands. An analysis using data from the *2000 MRS* that could provide useful information to policy makers would be to expand the current analysis to include Service-level analyses, demographic factors, actual performance data, and recruiting market data to develop an expanded profile of successful recruiters and the types of markets in which different types of recruiters succeed.

Survey Refinement

These analyses have also provided insight into ways that the survey instrument itself could be improved to facilitate modeling efforts. The constructs used in this analysis were developed *post hoc*, based on the available survey items. This analysis was somewhat limited by the lack of questions on some issues that are believed to be important to recruiting performance or satisfaction. For example, satisfaction with supervision was identified as a likely construct for inclusion in this model. It could not be included because there was only a single indicator of this construct.[17] Should modeling be planned for future recruiter surveys, identifying constructs to be tested and developing survey questions to measure those constructs *a priori* would likely improve analytic power.

Summary

The predictive capability of the model is quite good. It explains much of the variation in strain and satisfaction with recruiting and somewhat less in self-reported performance. This predictive power suggests that the model has captured many important factors contributing to

[17]Use of a single indicator assumes a perfect correlation between that indicator and the underlying construct. In reality, perfect measurement is highly unlikely. Most measures actually include a component of error along with the true construct. The use of multiple indicators for each construct allows that error component of each indicator to be excluded (i.e., modeled separately) so that the relationships being assessed in the broader model represent the relationships among constructs measured without error (Hatcher, 1994).

strain and satisfaction with recruiting. Because the predictive power is weaker for self-reported performance, it is likely that other important factors affect self-reported performance.

Given the model's strengths, policy makers and program managers can have increased confidence that the results point toward recruiters' perceptions of their work and quality of life and possible strategies for improving their quality of life. While the nature of the recruiting job is undergoing some change in the movement toward civilian recruiters, it remains a stressful and challenging job.

The need to understand recruiters' perceptions of their quality of life has been a major impetus for the ongoing *Recruiter Survey*s. The findings in this report provide information on issues and situations that contributed to successful job performance and job satisfaction among recruiters in FY 2000. This information may prove useful in guiding changes in policies and procedures to enhance future recruiters' quality of life.

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Appendix A

Data Collection Procedures and Sampling

Data Collection Procedures and Sampling

The target population for the *2000 Military Recruiter Survey* was recruiters who had goals or missions and at least 1 year of recruiting experience. The sampling frame consisted of military personnel identified by the active Services and Reserve Components as being recruiters. A 56 percent stratified simple random sample was drawn from the frame (10,126 out of 23,254). Notification letters were mailed to 10,115[1] respondents on November 1, 2000. The first wave of surveys was mailed November 16–22. Reminder/thank-you letters were sent the first of December, and a second wave of surveys was mailed 2 weeks later to recruiters whose completed forms had not yet been received. The survey field was closed on February 9, 2001.

The number of returned, usable surveys was 5,639, yielding an unweighted response rate of 56.5 percent (the weighted response rate was 56.9 percent).[2] Among those respondents, 23 were officers and another 910 did not meet eligibility criteria for inclusion in the target population (i.e., no goals/missions and/or less than 1 year of recruiting experience), leaving 4,706 cases in the data analysis respondent group.

The distribution of survey cases by eligibility status is shown in Table A.1. The distribution of eligible analysis cases by Service/Component is displayed in Table A.2.

Table A.1.
Unweighted Distribution of Survey Cases by Eligibility Status

	Number
Total Sample	**10,126**
Eligible Nonrespondents	
Returned blank questionnaire	8
Returned substantially incomplete questionnaire	31
Ineligible Respondents as Reported by Self or Proxy	
No longer a recruiter or separated/retired from the military	86
Unknown Eligibility	
Not locatable	481
Other nonresponse	3,881
Subtotal Nonusable Sample Cases	**4,487**
Eligible Respondents Who Returned Usable Surveys	**5,639**
Respondents Ineligible for Survey Data Analysis (Less than 1 year of recruiting experience, or no goals/missions, and/or no response to questions on experience or goals/missions)	**933**
Total Eligible Cases for Analysis	**4,706**

[1] Eleven recruiters in the sample had addresses that were not usable.

[2] For information on weighting, see the *Weighting Report for the 2000 Military Recruiter Survey*.

Table A.2.
Unweighted Distribution of Eligible Analysis Cases by Service and Component

Service/Component	Number		Percentage of Active Services or of Reserve Components
Active Services	3,640	(77.35%)	99.9
Army	1,129		31.0
Navy	1,046		28.7
Marine Corps	713		19.6
Air Force	584		16.0
Coast Guard	168		4.6
Reserve and Guard Components	1,066	(22.65%)	100.1
Army Reserve	223		20.9
Army National Guard	459		43.1
Naval Reserve	149		14.0
Air Force Reserve	99		9.3
Air National Guard	136		12.8
Total Number of Survey Analysis Cases	4,706		

Note. Percentages may not add to 100 because of rounding.

Appendix B

2000 Military Recruiter Survey

2000 MILITARY RECRUITER SURVEY

The purpose of the 2000 survey is to ask experienced production recruiters their views on key issues that affect the quality of their work lives. The questions ask about management support, training, working conditions and stress. A similar questionnaire was given five times before (1989, 1991, 1994, 1996 and 1998) and is being fielded this year to (1) track changes, (2) adjust policies and procedures, and (3) direct resources toward improving the working conditions and effectiveness of military recruiters. Therefore, it is important that you fill this survey out honestly.

INSTRUCTIONS FOR COMPLETING THE SURVEY

- THIS IS NOT A TEST, SO TAKE YOUR TIME.
- Select answers that best fit you.
- Use pencil or pen to complete the survey. Make your marks dark so that they are easily read.
- Note that sometimes you will be asked to mark only one response and sometimes, you may be asked to mark all that apply.
- Fill in the appropriate answer.
- To change an answer using pencil, erase the wrong answer completely and fill in the correct answer.
- To change an answer using pen, put an "X" through the wrong answer and fill in the correct answer.

CORRECT ANSWER ● INCORRECT ANSWER ✖

Answers to some questions will be on a 5-point scale.

Example:

To what extent do you agree or disagree with the following statements about your office?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
My recruiting office presents a professional environment for potential applicants.....	①	●	③	④	⑤

Sometimes you will be asked to choose one answer for yourself and one for your family member. When this instruction appears, select one answer in each column.

Example:

At your current duty assignment, what type of treatment facility do you and members of your family usually go to when sick or in need of health advice? Please mark one answer in each column.

	Yourself	Members of your family
A military clinic or hospital….	①	①
Off-base, DoD contracted clinic (e.g., PRIMUS)……	●	②
A civilian clinic or doctor (not contracted by DoD)……..	③	●
Some other type of treatment facility……..	④	④
Not applicable, haven't needed medical care at my current duty assignment.....	⑤	⑤

PRIVACY ACT STATEMENT

In accordance with the Privacy Act of 1974 (Public Law 93-579), this notice informs you of the purpose of the survey and how the findings will be used. Please read it carefully.

AUTHORITY: 10 USC 136 and 2358

PRINCIPAL PURPOSE: Information collected in this survey will be used to assess attitudes and perceptions of military recruiting life. This information will assist in the formulation of policies which may be needed to improve the military working environment and relevant recruiting policies.

ROUTINE USES: None.

DISCLOSURE: Providing information on this survey is voluntary. There is no penalty if you choose not to respond. However, maximum participation is encouraged so that data will be complete and representative. Your survey instrument will be treated as confidential. Identifying information will be used only by persons engaged in, and for the purpose of, the survey. Only group statistics will be reported.

Assignment Information

1. What is your branch of Service/Reserve Component?

① Army
② Navy
③ Marine Corps
④ Air Force
⑤ Coast Guard
⑥ Army Reserve
⑦ Army National Guard
⑧ Naval Reserve
⑨ Air Force Reserve
⑩ Air National Guard

2. How long have you been assigned to recruiting duty (include all tours in recruiting)?

① Less than one year
② 1 year, but less than 2
③ 2 years, but less than 3
④ 3 years, but less than 6
⑤ 6 or more years

3. Is this your first tour in recruiting?

① Yes
② No

4. Do you have specific monthly/annual goals/missions? (MARK ALL THAT APPLY)

① Yes, personal monthly goals/missions
② Yes, personal annual goals/missions
③ Yes, team monthly goals/missions
④ Yes, team annual goals/missions
⑤ No, neither personal nor team goals/missions

5. What were your reasons for becoming a recruiter? (MARK ALL THAT APPLY)

① I was able to choose the location of my duty station
② I wanted a change from my military specialty/occupation
③ Recruiting duty is career enhancing
④ Recruiting duty is necessary for promotion
⑤ I believe in my Service and want to share it with others
⑥ I want to help young people
⑦ I had no choice
⑧ Other, please specify _____

6. Did you volunteer to be a recruiter?

① I was assigned to recruiting duty and not given a choice
② I "volunteered," but really had no choice
③ I volunteered, but would have preferred an assignment other than recruiting
④ I volunteered and wanted recruiting duty

7. How many other recruiters (any Service) have offices in the same location (i.e., building, strip-mall) as your recruiting station?

① None, just myself
② 1 other recruiter
③ 2 other recruiters
④ 3 to 5 other recruiters
⑤ 6 or more other recruiters

8. How many other recruiters of your own Service Branch/Component are located in your recruiting station?

① None, just myself
② 1 other recruiter
③ 2 other recruiters
④ 3 to 5 other recruiters
⑤ 6 or more other recruiters

9. Do you think your preferences were considered in your current duty location assignment?

① Yes
② No

10. On average, what is the total number of hours per week you spend performing recruiting related duties?

① 40 hours or less
② 41-50 hours
③ 51-60 hours
④ 61-70 hours
⑤ 71-80 hours
⑥ More than 80 hours

11. On average, what is the total number of hours per week you spend performing administrative duties?

① None
② Some but less than 6 hours
③ 6-10 hours
④ 11-20 hours
⑤ More than 20 hours

12. On average, what is the total number of hours per week you spend on the phone with prospects?

① None
② Some but less than 6 hours
③ 6-10 hours
④ 11-20 hours
⑤ More than 20 hours

13. During the past year, have you voluntarily not taken leave due to the demands of your job?

① Yes
② No

14. During the past year, did you request annual leave and have the request denied?

① Yes
② No

15. How many days of annual leave did you take last year?

① 0 to 3 days
② 4 to 7 days
③ 8 to 14 days
④ 15 to 29 days
⑤ 30 or more days

16. **In the past year, of the number of annual leave days taken, what percentage did you work at least part of the day on work-related tasks?**

① 0%
② 1-25%
③ 26-50%
④ 51-75%
⑤ 76-100%

17. **How many days of annual leave did you lose in the last fiscal year due to the demands of your recruiting duty?**

① None
② 1-5 days
③ 6-10 days
④ 11-20 days
⑤ 21+ days

Housing/Residence

18. **Compared with living conditions in base housing, how do you rate your current living conditions with respect to quality and cost?**

① Not applicable, I have never lived on base → GO TO QUESTION 19

② Not applicable, I am currently living on base → GO TO QUESTION 19

Quality	Cost
① Better	① More
② Same	② Same
③ Worse	③ Less

19. **What is the average ONE-WAY driving time from your residence to your duty location?**

① Less than 15 minutes
② 15-30 minutes
③ 31-60 minutes
④ More than 1 hour

20. **How long does it usually take you to travel from your residence to your nearest…?**

	Less than 15 minutes	15-30 minutes	31-60 minutes	61-90 minutes	91 minutes to 2 hours	More than 2 hours
a. Military exchange.....	①	②	③	④	⑤	⑥
b. Commissary.....	①	②	③	④	⑤	⑥
c. Military hospital/clinic.....	①	②	③	④	⑤	⑥

21. **How satisfied are you with the following characteristics of your current residence and community at your permanent duty station?**

	Very satisfied	Satisfied	Neither satisfied nor dissatisfied	Dissatisfied	Very dissatisfied	Not applicable
a. Cost of residence.....	①	②	③	④	⑤	⑥
b. Schools.....	①	②	③	④	⑤	⑥
c. Availability of childcare.....	①	②	③	④	⑤	⑥
d. Spouse employment.....	①	②	③	④	⑤	⑥

Your Workplace

22. To what extent do you agree or disagree with the following statements about your office?

	Not applicable	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
a. My recruiting office presents a professional environment for potential applicants		①	②	③	④	⑤	⑥
b. My recruiting office presents a pleasant environment for potential applicants		①	②	③	④	⑤	⑥
c. My recruiting office contributes to my success as a recruiter		①	②	③	④	⑤	⑥
d. My recruiting office gets very few walk-in potential applicants		①	②	③	④	⑤	⑥
e. I could successfully recruit more applicants if my office looked "high-tech"		①	②	③	④	⑤	⑥
f. There is a good relationship between my office and other tenants (non-Service) in the area		①	②	③	④	⑤	⑥
g. There is a good relationship between my recruiting office's landlord and the assigned recruiters		①	②	③	④	⑤	⑥
h. My recruiting office is conveniently located		①	②	③	④	⑤	⑥
i. Prospective applicants have little trouble finding my recruiting office		①	②	③	④	⑤	⑥
j. My recruiting office is located close to high schools		①	②	③	④	⑤	⑥
k. My recruiting office is accessible to potential applicants		①	②	③	④	⑤	⑥
l. Parking is available for applicants at my office		①	②	③	④	⑤	⑥
m. Parking is convenient for applicants at my office		①	②	③	④	⑤	⑥
n. Parking is available for recruiters at my office		①	②	③	④	⑤	⑥
o. Parking is convenient for recruiters at my office		①	②	③	④	⑤	⑥

23. How much do you spend monthly to park your POV at work?

① Not applicable, I use other transportation to get to work
② None, free parking
③ $1-$50
④ $51-$100
⑤ $101 or more per month

24. How much do you spend monthly to use public transportation for work?

① Not applicable, I do not use public transportation
② $1-$50
③ $51-$100
④ $101 or more per month

25. If not located near a military installation, does your Recruiting Headquarters provide fitness center access to you at no out-of-pocket expense?

① Not applicable, I am located near a military installation
② Yes
③ No

Training

26. To what extent do you agree or disagree with the following statements about your formal training and preparation for recruiting duty?

	Not applicable	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
a. I was given a realistic preview of what recruiting duty would be like		①	②	③	④	⑤	⑥
b. Members of my family were well prepared by my Service for the requirements and demands of my recruiting assignment		①	②	③	④	⑤	⑥
c. I was given good professional training for my job as a recruiter		①	②	③	④	⑤	⑥
d. The training I received was helpful and relevant for my job as a recruiter		①	②	③	④	⑤	⑥
e. The training I received was insufficient for what I needed to know to do effective recruiting		①	②	③	④	⑤	⑥
f. My allocated time in training was sufficient		①	②	③	④	⑤	⑥

27. Did your immediate supervisor train you for your job as a recruiter?

① Yes
② No

28. How frequently did an experienced recruiter help you during on-the-job training?

① Frequently
② Occasionally
③ Seldom
④ Never

29. How much do you agree or disagree with the following statements about refresher (i.e., TDY, in-house, monthly, weekly) training?

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Not applicable
a. I receive adequate refresher training…….....	①	②	③	④	⑤	⑥
b. I receive adequate refresher training from my supervisor…….	①	②	③	④	⑤	⑥
c. I receive adequate refresher training from my recruiter instructor/ trainer.....……..	①	②	③	④	⑤	⑥

30. Which of the following would make refresher training better? (MARK ALL THAT APPLY)

① More frequent training sessions
② Establish regularly scheduled training
③ Have recruiter instructors conduct more All Hands training
④ Have recruiter instructors conduct more individual training
⑤ Have recruiters prepare and present training to each other
⑥ Shadow experienced recruiter
⑦ Other, please specify _____

31. On average, how long do you think it takes before the typical new recruiter can perform at top efficiency?

① Less than 6 months
② 6 months to less than 1 year
③ 1-2 years
④ More than 2 years

Goal/Mission

32. With reference to your recruiting goals/missions, to what extent do you agree or disagree with the following statements?

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Not applicable
a. My monthly goals/missions are achievable.....….	①	②	③	④	⑤	⑥
b. My assigned market area is adequate to make goal/ mission.....…….	①	②	③	④	⑤	⑥
c. Success in reaching goal/mission has a "make or break" effect on my military career.....……..	①	②	③	④	⑤	⑥
d. I am pressured to continue recruiting even after reaching my monthly goal/mission.....….	①	②	③	④	⑤	⑥
e. I am punished if I fall short of goal/mission.....….	①	②	③	④	⑤	⑥
f. If I miss my goal/mission one month, I can make it up the next month.....…….	①	②	③	④	⑤	⑥
g. I receive adequate support (e.g., cars, telephone, promotional items) to help me accomplish my goal/mission.....…….....	①	②	③	④	⑤	⑥
h. Required paperwork interferes with my efforts to make goal/mission.....….	①	②	③	④	⑤	⑥
i. My supervisor will help me if I have trouble making goal/mission.....….	①	②	③	④	⑤	⑥

33. In how many of the months of the past fiscal year did you achieve your monthly goal/mission?

① Less than 3 months
② 3-5 months
③ 6-8 months
④ 9-11 months
⑤ All 12 months
⑥ Not applicable

34. What percentage of your recruiting goal/mission did you achieve in the last fiscal year?

① 0 to 75%
② 76 to 100%
③ 101 to 125%
④ 126 to 150%
⑤ More than 150%
⑥ Not applicable

35. All things considered, what is the likelihood that experienced recruiters can make goal/mission in your zone/area?

① Extremely difficult
② Difficult but can be made with extra effort
③ Should be able to make goal/mission but difficult to exceed
④ Not only achievable, but good chance to exceed
⑤ Very excellent chance to exceed goal/mission

36. Compared to other recruiters from <u>your Service</u> who work in the area served by your MEPS, would you say you are:

① One of the best (exceed 95 percentile)
② Better than most (66 to 95 percentile)
③ Average (35 to 65 percentile)
④ Below average (below 35 percentile)

37. In your current assignment, do you recruit Non-Prior Service (NPS) applicants?

① Yes
② No → GO TO QUESTION 40

38. If YES to previous question,

a. How many NPS applicants did you recruit in the past fiscal year?

Write the number of NPS applicants you recruited in the boxes. For example, if you recruited 20 NPS applicants, you would enter "020".

☐☐☐ NPS IN PAST FISCAL YEAR

b. How many of these applicants resulted from the ASVAB Student Testing Program (STP) leads?

Write the number of NPS applicants you recruited from the ASVAB STP in the boxes. For example, if you recruited two applicants from the ASVAB STP leads, you would enter "002".

☐☐☐ NPS APPLICANTS FROM ASVAB STP LEADS

39. How would you rate the overall importance of each of the following lead sources for attaining your NPS recruiting goals/missions?

	Very important	Important	Neither important nor unimportant	Unimportant	Very unimportant	Not applicable
a. ASVAB Student Testing Program.....	①	②	③	④	⑤	⑥
b. High School lists/student directories.....	①	②	③	④	⑤	⑥
c. Referrals from applicants....	①	②	③	④	⑤	⑥
d. Local advertising.....	①	②	③	④	⑤	⑥
e. National leads (e.g., direct mailouts, 800 number, Internet).....	①	②	③	④	⑤	⑥
f. Community colleges.....	①	②	③	④	⑤	⑥
g. 4-year colleges/ universities.....	①	②	③	④	⑤	⑥
h. Local merchants/ community contacts.....	①	②	③	④	⑤	⑥
i. Recruiter Assistance (HRAP, HARP, RAP, PRASP, Boot Leave, etc.)...	①	②	③	④	⑤	⑥
j. Recruiting station walk-ins.....	①	②	③	④	⑤	⑥

Job Demands

40. To what extent do you agree or disagree with the following statements?

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Not applicable
a. I have the opportunity to earn an award for production.....	①	②	③	④	⑤	⑥
b. The awards available to me have important effects on my career.....	①	②	③	④	⑤	⑥
c. Some recruiters are not successful because they lack aptitude for sales.....	①	②	③	④	⑤	⑥
d. The good recruiters in my office make up for others who can't make their quotas.....	①	②	③	④	⑤	⑥
e. The contract quotas I am given reflect the actual accession requirements....	①	②	③	④	⑤	⑥
f. Working hard just makes more work for me in the future.....	①	②	③	④	⑤	⑥
g. Recruiter leadership does a good job of keeping recruiters informed of initiatives to improve quality-of-life (e.g., housing, medical, pay, CONUS COLA, childcare).....	①	②	③	④	⑤	⑥
h. The morale of the recruiters I work with is good.....	①	②	③	④	⑤	⑥
i. My pay is appropriate for the job I do.....	①	②	③	④	⑤	⑥
j. If a recruit was not qualified for my Service, I would refer him or her to another Service.....	①	②	③	④	⑤	⑥

41. The degree to which Recruiting Commands manage office level recruiting activities varies. For each statement, indicate whether you agree or disagree.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Not applicable
a. The mileage restriction placed on government vehicles interferes with my ability to do my job.....	①	②	③	④	⑤	⑥
b. I have the freedom to personally plan my work and use my judgment as to the best method for recruiting in my assigned area.....	①	②	③	④	⑤	⑥
c. I receive good support from my supervisors.....	①	②	③	④	⑤	⑥
d. My superiors and I work as a team.....	①	②	③	④	⑤	⑥

42. Below is a list of statements that relate to aspects of life as a recruiter. For each statement, indicate whether you agree or disagree.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Not applicable
a. Supervisors understand and help recruiters with problems	①	②	③	④	⑤	⑥
b. Recruiters are recognized for doing a good job	①	②	③	④	⑤	⑥
c. Skills attained in recruiting are helpful in securing a good civilian job	①	②	③	④	⑤	⑥
d. Recruiting is important work	①	②	③	④	⑤	⑥
e. Recruiting is challenging work	①	②	③	④	⑤	⑥
f. Recruiters' pay is sufficient to meet expenses	①	②	③	④	⑤	⑥
g. Promotion opportunity is better than it would have been without a recruiting assignment	①	②	③	④	⑤	⑥
h. I would encourage my friends to become recruiters	①	②	③	④	⑤	⑥
i. I feel emotionally drained from my work	①	②	③	④	⑤	⑥
j. I feel fatigued when I get up in the morning and have to face another day on the job	①	②	③	④	⑤	⑥
k. Working with people all day is really a strain for me	①	②	③	④	⑤	⑥
l. I feel burned out from my job	①	②	③	④	⑤	⑥
m. I feel frustrated by my job	①	②	③	④	⑤	⑥
n. I feel like I am at the end of my rope	①	②	③	④	⑤	⑥

43. This section of questions asks how your work has changed since 1998 or since you began, if after 1998.

	Much greater	Greater	Same	Less	Much less
a. The amount of contact you have with key influencers such as the parents of prospects is	①	②	③	④	⑤
b. The number of times you visit the high schools in your market is	①	②	③	④	⑤
c. The types and values of incentive packages you can discuss with your prospects are	①	②	③	④	⑤
d. The overseas assignment opportunities you can discuss are	①	②	③	④	⑤
e. The amount of time you spend pre-prospecting (e.g., boy scouts, cub scouts, coaching youth football) is	①	②	③	④	⑤
f. The amount of time you spend prospecting is	①	②	③	④	⑤
g. The number of hours per week you spend performing duty-related tasks is	①	②	③	④	⑤
h. The amount of participation in community events to support your recruiting job is	①	②	③	④	⑤
i. The number of work hours required to meet goal/mission is	①	②	③	④	⑤
j. The amount of paperwork required to get reimbursed for recruiting expenses is	①	②	③	④	⑤
k. The amount of money recruiters have to pay for medical expenses is	①	②	③	④	⑤
l. The amount of free time recruiters have to attend to personal duties is	①	②	③	④	⑤
m. The staffing level for recruiters in your office is	①	②	③	④	⑤
n. The experience level of your fellow recruiters is	①	②	③	④	⑤

44. How frequently do you think recruiter improprieties (i.e., bending rules to make goal/mission) occur in your recruiting command?

① Frequently
② Occasionally
③ Seldom
④ Never

45. How frequently do you think sexual misconduct between recruiters and applicants occurs in your recruiting command?

① Frequently
② Occasionally
③ Seldom
④ Never

46. If you had the freedom to select an assignment next month, which of the following would you choose?

① Remain in recruiting
② Return to my previous military specialty/occupation
③ Select a totally new military specialty/occupation
④ Leave the Service

47. Approximately how many high school seniors do you individually prospect in your recruiting market?

① Less than 500
② 500 to 1,000
③ 1,001 to 2,000
④ 2,001 to 3,000
⑤ More than 3,000
⑥ Not applicable → GO TO QUESTION 56

48. How would you rate the prospect of graduating seniors in your recruiting market finding a full-time job with satisfactory career potential?

① Possible for nearly all
② Possible for most
③ Possible for some
④ Possible for very few to none
⑤ Not applicable

49. Compared to civilian pay for recent high school graduates in your local area, starting military pay is:

① Higher
② About the same
③ Lower
④ Not applicable

50. To what extent do you agree or disagree with the following statements about working with schools?

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Not applicable
a. I can talk to seniors at my high schools anytime.....	①	②	③	④	⑤	⑥
b. My schools make high school directory information available to me.....	①	②	③	④	⑤	⑥
c. I can display posters, brochures, etc., in my schools.....	①	②	③	④	⑤	⑥
d. I am invited to speak to classes on military topics (e.g., military history) in my schools.....	①	②	③	④	⑤	⑥
e. My school counselors encourage qualified seniors to talk to me about the military as a career.....	①	②	③	④	⑤	⑥
f. My school counselors tell students to consider the Service as a way to get money for college.....	①	②	③	④	⑤	⑥

51. In general, are you invited to Career Day at the high schools in your recruiting market?

① Yes
② No
③ Not applicable

52. What percentage of your high schools cooperate by providing access to high school lists/student directories?

① None
② 1-20 percent
③ 21-40 percent
④ 41-60 percent
⑤ 61-80 percent
⑥ 81-100 percent
⑦ Not applicable

53. What percentage of your high schools cooperate by providing access to students?

① None
② 1-20 percent
③ 21-40 percent
④ 41-60 percent
⑤ 61-80 percent
⑥ 81-100 percent
⑦ Not applicable

54. What percentage of high school senior names do you have as a result of all lead sources (e.g., ASVAB STP, high school lists, referrals, advertising lead cards)?

① None
② 1-20 percent
③ 21-40 percent
④ 41-60 percent
⑤ 61-80 percent
⑥ 81-100 percent
⑦ Not applicable

55. Do your supervisors actively assist recruiters in getting schools to cooperate by visiting schools, writing letters, talking with teachers, counselors, school board members, etc?

① Yes, frequently
② Sometimes
③ No, never
④ Not applicable

56. What do members of your household/immediate family think of <u>your</u> recruiting assignment? Are they:

① Very positive
② Somewhat positive
③ Neutral, neither positive nor negative
④ Somewhat negative
⑤ Very negative
⑥ Not applicable

57. Are active attempts made by your recruiting command to involve your family in your recruiting job (e.g., special office social events for the entire family, discounted tickets for the family)?

① Yes, frequently
② Sometimes
③ No, never
④ Not applicable

Resources

58. With respect to recruiting, how important are the following factors?

	Very important	Important	Neither important nor unimportant	Unimportant	Very unimportant	Not applicable
a. Formal training	①	②	③	④	⑤	
b. On-the-job training	①	②	③	④	⑤	
c. Advertising	①	②	③	④	⑤	
d. Promotional items	①	②	③	④	⑤	
e. Educational benefits for prospects	①	②	③	④	⑤	⑥
f. Enlistment bonus	①	②	③	④	⑤	⑥
g. Seasonal shipping bonus	①	②	③	④	⑤	⑥
h. MEPS processing	①	②	③	④	⑤	
i. Office computer and software	①	②	③	④	⑤	
j. Beeper or cellular phone	①	②	③	④	⑤	⑥
k. Recruiter Internet access	①	②	③	④	⑤	⑥
l. Recruiting station location	①	②	③	④	⑤	
m. Recruiting station appearance	①	②	③	④	⑤	
n. Access to own Government vehicle	①	②	③	④	⑤	⑥
o. Positive media publicity	①	②	③	④	⑤	
p. Pro-military community/ influencers	①	②	③	④	⑤	
q. High school access	①	②	③	④	⑤	
r. High school student lists	①	②	③	④	⑤	

59. To what extent do you agree or disagree that the following recruiting resources are <u>in need of improvement</u>?

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Not applicable
a. Formal training	①	②	③	④	⑤	
b. On-the-job training	①	②	③	④	⑤	
c. Advertising	①	②	③	④	⑤	
d. Promotional items	①	②	③	④	⑤	
e. Educational benefits for prospects	①	②	③	④	⑤	⑥
f. Enlistment bonus	①	②	③	④	⑤	⑥
g. Seasonal shipping bonus	①	②	③	④	⑤	⑥
h. MEPS processing	①	②	③	④	⑤	
i. MEPS medical screening	①	②	③	④	⑤	
j. MEPS testing	①	②	③	④	⑤	
k. MEPS liaisons	①	②	③	④	⑤	
l. Office computer and software	①	②	③	④	⑤	
m. Beeper or cellular phone	①	②	③	④	⑤	⑥
n. Recruiter Internet access	①	②	③	④	⑤	⑥
o. Recruiting station location	①	②	③	④	⑤	
p. Recruiting station appearance	①	②	③	④	⑤	
q. Access to own Government vehicle	①	②	③	④	⑤	⑥
r. Positive media publicity	①	②	③	④	⑤	
s. Pro-military community/ influencers	①	②	③	④	⑤	
t. High school access	①	②	③	④	⑤	
u. High school student lists	①	②	③	④	⑤	

60. If it was your decision, would you expand, keep the same, reduce, or eliminate the following advertising elements in supporting your recruiting efforts?

	Expand	Keep the same	Reduce	Eliminate
a. Local newspaper ads	①	②	③	④
b. Billboards	①	②	③	④
c. Television advertising	①	②	③	④
d. Internet recruiting websites	①	②	③	④
e. Radio advertising	①	②	③	④
f. Magazine advertising	①	②	③	④
g. Locally produced flyers/mailings	①	②	③	④
h. Flyers/mailings produced by the Recruiting Service	①	②	③	④
i. Joint (all Services together) advertising	①	②	③	④
j. Major local events	①	②	③	④

61. In your experience, how would you rate the following benefits/incentives in terms of importance to <u>prospects</u> you have dealt with in the past fiscal year?

	Very important	Important	Neither important nor unimportant	Unimportant	Very unimportant	Not applicable
a. Enlistment bonus	①	②	③	④	⑤	
b. Seasonal shipping bonus	①	②	③	④	⑤	⑥
c. Montgomery GI Bill benefits	①	②	③	④	⑤	
d. Service college fund	①	②	③	④	⑤	⑥
e. Military pay and allowances	①	②	③	④	⑤	
f. Medical benefits	①	②	③	④	⑤	
g. Job training and experience	①	②	③	④	⑤	
h. In-Service educational opportunities (on or off duty)	①	②	③	④	⑤	⑥
i. Subsequent civilian employment opportunities	①	②	③	④	⑤	
j. Physical/mental challenge	①	②	③	④	⑤	
k. Opportunity to travel	①	②	③	④	⑤	
l. Choice of first duty station	①	②	③	④	⑤	⑥

62. DoD is discussing the possibility of using civilian contractors to assist recruiters. How much do you agree or disagree with the following statements?

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
a. Using a civilian contractor for telemarketing potential recruits would be helpful to me.....	①	②	③	④	⑤
b. Using a civilian contractor for telemarketing potential recruits would be convenient for me…..	①	②	③	④	⑤
c. Using a civilian contractor for telemarketing potential recruits would help me make my goal/mission.....	①	②	③	④	⑤
d. Using a civilian contractor as an administrative assistant would be helpful to me.....	①	②	③	④	⑤
e. Using a civilian contractor as an administrative assistant would be convenient for me…..	①	②	③	④	⑤
f. Using a civilian contractor as an administrative assistant would help me make my goal/mission.....	①	②	③	④	⑤

63. DoD is evaluating putting recruiting stations in large enclosed malls. These stations would have attractive "storefronts" to attract visitors and computer terminals with information about military careers and benefits. They would also have administrative assistants who would assist all Services. How much do you agree or disagree with the following statements?

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
a. Locating my station where there are a lot of potential applicants who could visit the station would help me recruit……	①	②	③	④	⑤
b. In the right mall, with a good design, the station would reflect well on the military and generate new leads……..	①	②	③	④	⑤
c. A mall location would be a hindrance for meeting with prospects……	①	②	③	④	⑤
d. I would prefer a location in a large mall to my current station location……..	①	②	③	④	⑤
e. If I could choose any location for my station, it would not be in a mall……..	①	②	③	④	⑤
f. Teenagers would visit a mall recruiting station if it looked “high-tech”……..	①	②	③	④	⑤
g. Teenagers today are more impressed by appearance and style……..	①	②	③	④	⑤
h. Proper visibility in a mall would positively impress key influencers……	①	②	③	④	⑤
i. DoD should modernize its recruiting facilities……	①	②	③	④	⑤
j. I would prefer working in a station that was easily accessible to the public……	①	②	③	④	⑤
k. Sharing an administrative assistant between recruiters from different Services would create friction in the office……	①	②	③	④	⑤

64. How many hours per week do you spend phone calling potential recruits that could be hired out to a civilian telemarketing contractor?

① None
② Some but less than 6 hours
③ 6-10 hours
④ 11-20 hours
⑤ More than 20 hours

65. How many hours per week do you spend performing administrative duties that could be hired out to a civilian office administrative assistant?

① None
② Some but less than 6 hours
③ 6-10 hours
④ 11-20 hours
⑤ More than 20 hours

Supervision

66. To what extent do you agree or disagree with the following statements?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
a. My immediate supervisor expects too much from me.....	①	②	③	④	⑤
b. My immediate supervisor coaches me if I need it.....	①	②	③	④	⑤
c. My immediate supervisor criticizes me even when I am doing a good job.....	①	②	③	④	⑤
d. My immediate supervisor does a poor job of maintaining morale among recruiters.....	①	②	③	④	⑤
e. My immediate supervisor stands up for me.....	①	②	③	④	⑤
f. I feel I am supervised more closely than necessary.....	①	②	③	④	⑤
g. My immediate supervisor understands the sales business.....	①	②	③	④	⑤

67. If you supervise at least one other production recruiter on a routine basis, to what extent do you agree or disagree with the following statements?

① Not applicable, I do not supervise at least one other production recruiter on a routine basis → GO TO QUESTION 68

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
a. Recruiters should not bother overworked supervisors with their problems.....	①	②	③	④	⑤
b. In reaching recruiting goals/missions, teamwork is as important as each person's own effort.....	①	②	③	④	⑤
c. It is my job to motivate recruiters to make their goals/missions.....	①	②	③	④	⑤
d. When I listen to subordinates, I do my job better.....	①	②	③	④	⑤
e. It is my job to teach recruiters who have not learned everything necessary from their training.....	①	②	③	④	⑤
f. Recruiters need constant pressure in order for them to make their goals/missions.....	①	②	③	④	⑤
g. Supervisors who inspire recruiters make the difference between goal/mission achievement and failure.....	①	②	③	④	⑤
h. Once properly trained, recruiters should be allowed to make their own decisions.....	①	②	③	④	⑤
i. Supervisors can do only so much to encourage recruiters who fail to make their recruiting goals/missions.....	①	②	③	④	⑤
j. Punishing recruiters who do not make their goals/missions can be counterproductive.....	①	②	③	④	⑤

Satisfaction

68. In general, how satisfied are you currently with the supervision/leadership within your recruiting command?

	Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
a. Immediate supervisor.....	①	②	③	④	⑤
b. Recruiting command beyond immediate supervisor.....	①	②	③	④	⑤

69. In general, how satisfied were you with military supervision/leadership before you became a recruiter?

	Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
a. Immediate supervisor.....	①	②	③	④	⑤
b. Leadership beyond immediate supervisor.....	①	②	③	④	⑤

70. Do you plan to make recruiting a career?

① Yes
② No
③ Undecided

71. In general, how satisfied are you with…?

	Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
a. Recruiting.....	①	②	③	④	⑤
b. Military life.....	①	②	③	④	⑤

Medical

72. In the past fiscal year, how much did you spend on medical and dental care for you and your dependents that was NOT reimbursed?

Write your yearly expense in the boxes. For example, if you spent $100 in the past fiscal year, you would enter "0100".

$ ☐☐☐☐ NON-REIMBURSED MEDICAL AND DENTAL EXPENSES

73. What do you spend (on average) each month in the performance of your official duties (e.g., driving related expenses, applicant meals, phone, etc.) that is NOT reimbursed to you?

Write your monthly expense in the boxes. For example, if you spend $100 each month, you would enter "0100".

$ ☐☐☐☐ NON-REIMBURSED RECRUITING RELATED EXPENSES

74. How much do you spend monthly on housing costs, including utilities, above your Basic Allowance for Housing (BAH)?

Write your monthly expense in the boxes. For example, if you spend $100 each month, you would enter "0100".

$ ☐☐☐☐ HOUSING EXPENSES BEYOND BAH

75. At your current duty assignment, what type of treatment facility do you and members of your family <u>usually</u> go to when sick or in need of health advice? Please mark one answer in each column.

	Yourself	Members of your family
A military clinic or hospital.....	①	①
Off-base, DoD contracted clinic (e.g., PRIMUS).....	②	②
A civilian clinic or doctor (not contracted by DoD).....	③	③
Some other type of treatment facility.....	④	④
Not applicable, haven't needed medical care at my current duty assignment.....	⑤	⑤

76. How long does it usually take you or members of your family to travel to this treatment facility to receive medical care? Please mark one answer in each column.

	Yourself	Members of your family
Less than 15 minutes……	①	①
15 to 30 minutes……	②	②
31 minutes to 60 minutes……	③	③
61 minutes to two hours……..	④	④
More than two hours……	⑤	⑤
Not applicable……	⑥	⑥

77. In general, how satisfied are you with the medical care provided by TRICARE for yourself and/or members of your family? Please mark one answer in each column.

	Yourself	Members of your family
Very satisfied.....	①	①
Satisfied……	②	②
Neither satisfied nor dissatisfied……..	③	③
Dissatisfied..….....	④	④
Very dissatisfied…….....	⑤	⑤
Not applicable……...	⑥	⑥

78. What is your current TRICARE health plan?

① TRICARE Standard
② TRICARE Extra
③ TRICARE Prime

79. Are you or your family now covered by TRICARE Supplemental Insurance?

① Yes
② No
③ Not applicable

80. Are you or your family now covered by PRIVATE medical insurance or an HMO, such as those operated by Blue Cross, Prudential, or Kaiser?

① Yes
② No
③ Not applicable

81. Is TRICARE Prime available to you at your current assignment?

① Yes → GO TO QUESTION 83
② No

82. If no, would you use TRICARE Prime if it were available to you?

① Yes
② No

Computer Usage

83. Do you have a personal desktop computer (PC) in your office that was issued to you?

① Yes
② No

84. Do you have a PC in your office that is shared by you and others?

① Yes
② No

85. Do you have access to a laptop computer for recruiting purposes?

① Yes
② No

86. Do you have a computer in your home or residence?

① Yes
② No → GO TO QUESTION 88

87. Do you use your home computer for work tasks?

① Yes
② No

88. Do you…

	Yes, at office only	Yes, at home only	Yes, both at office and home	No
a. Have access to the Internet……	①	②	③	④
b. Use the Internet……..	①	②	③	④

89. How many hours per week do you spend at work or at home on each of the following for your recruiting related duties?

	None	Less than 1	1 to less than 2	2 to less than 4	4 or more
a. Word processing.....	①	②	③	④	⑤
b. Spreadsheets.....	①	②	③	④	⑤
c. Database applications.....	①	②	③	④	⑤
d. Chat rooms/electronic bulletin boards.....	①	②	③	④	⑤
e. Own recruiting command web site.....	①	②	③	④	⑤
f. Personal/Local web site.....	①	②	③	④	⑤
g. Exchanging e-mail with potential recruits.....	①	②	③	④	⑤
h. Work related e-mail, other than with potential recruits.....	①	②	③	④	⑤
i. Distance learning.....	①	②	③	④	⑤
j. Filling out electronic forms.....	①	②	③	④	⑤
k. Other.....	①	②	③	④	⑤

Background Information

90. What is your current paygrade?

① E-4
② E-5
③ E-6
④ E-7
⑤ E-8
⑥ E-9
⑦ Officer

91. What is the highest grade or degree you have completed? (MARK ONLY ONE)

① Less than 12 years of school (no diploma)
② GED or High School Certificate
③ High School Diploma
④ Some college, but did not graduate
⑤ Associate's degree (e.g., AA, AS)
⑥ Bachelor's degree (e.g., BA, AB, BS)
⑦ Master's, doctoral degree or professional school degree (e.g., MA/MS/PhD/MD/JD/DVM)

92. Are you Spanish/Hispanic/Latino? (MARK "NO" IF NOT SPANISH/HISPANIC/LATINO)

① No, not Spanish/Hispanic/Latino
② Yes, Mexican, Mexican American, Chicano
③ Yes, Puerto Rican
④ Yes, Cuban
⑤ Yes, Other Spanish/Hispanic/Latino

93. What is your race? (MARK ONE OR MORE RACES to indicate what you consider yourself to be)

① White
② Black or African-American
③ American Indian or Alaskan Native
④ Asian (e.g., Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese)
⑤ Native Hawaiian or other Pacific Islander (e.g., Samoan, Guamanian or Chamorro)

94. Are you:

① Male
② Female

95. What is your marital status?

① Now married
② Separated
③ Divorced
④ Widowed
⑤ Never married → GO TO QUESTION 97

96. What was your marital status when you began your first tour of recruiting duty?

① Married
② Separated
③ Divorced
④ Widowed
⑤ Never married

97. How old were you on your last birthday?

① Less than 25 years
② 25-29 years
③ 30-34 years
④ 35-39 years
⑤ 40-44 years
⑥ 45 years or older

98. Would you like to know the results of this survey? If you are interested in being notified when a brief summary of the results is available on the Web, please print your e-mail address below. This e-mail address will be used for no other purpose than this notification. (OPTIONAL)

Please print

99. On what date did you complete this survey?

Y	Y	Y	Y	M	M	D	D

COMMENTS SECTION – PLEASE PRINT

100. What do you believe are the most pressing problems facing recruiters today?

101. What can DoD and your Service do to help your recruiting efforts?

102. If you have comments that you were not able to express in answering the survey, please write them in the space provided.

THANK YOU FOR YOUR PARTICIPATION!

Please mail the questionnaire in the envelope provided.

If the envelope is missing, mail your completed survey to:

WESTAT
1650 RESEARCH BLVD.
RE 133
ROCKVILLE, MD 20850

Appendix C

Topline Findings

TOPLINE FINDINGS

This appendix contains findings for key military recruiter indicators reported for five topical areas: Goal Achievement, Job Demands, Improprieties, Management/Supervisory Support, and Job Satisfaction. Statistically significant changes (those not attributable to sampling variability) in the indicators from 1998 to 2000 are noted.* Trend data are presented in charts for active duty recruiters for the 1994, 1996, 1998, and 2000 surveys. Total active duty DoD Services includes only the Army, Navy, Marine Corps, and Air Force. Total active Services include those four Services as well as the Coast Guard, which is part of the Department of Transportation.

This topline report excludes findings for other 2000 survey items. Readers can consult the *Tabulations of Responses from the 2000 Military Recruiter Survey* for that information.

Goal Achievement

Recruiters' principal task is to meet assigned recruiting goals/missions. As noted in Chapter 1 of this report, the DoD implemented a number of changes in 2000 to help recruiters with the highly challenging task of recruiting prospects in a very competitive environment.

The *2000 Military Recruiter Survey* included several questions to measure goal achievement. Findings for two of those questions are included in this topline report: One question asked for self-reports on actual goal achievement, and the other addressed recruiters' perceptions of the achievability of their monthly goals/mission. Findings on the percentages of recruiters reporting they met their goals 9 or more months of the previous year and who disagreed that their goals/missions were achievable are reported here.

Actual Goal Achievement

Q33. In how many of the months of the past fiscal year did you achieve your monthly goal/mission? (percentage who indicated 9 or more months)

Active Duty Recruiters

Reported goal achievement improved in 2000. Forty-one percent of all active DoD recruiters reported achieving their assigned goals/missions in at least 9 months of the previous fiscal year, a significant increase from the 33 percent reported in 1998 and a reversal of the decline in achievement that occurred between 1996 and 1998. Although all five Services showed improvement from 1998 levels, the increases were significant only for the Army and Air Force. Reported achievement in 2000 varied greatly across the Active Services, ranging from 24 percent for Army recruiters to 57 percent for Air Force and Coast Guard recruiters.

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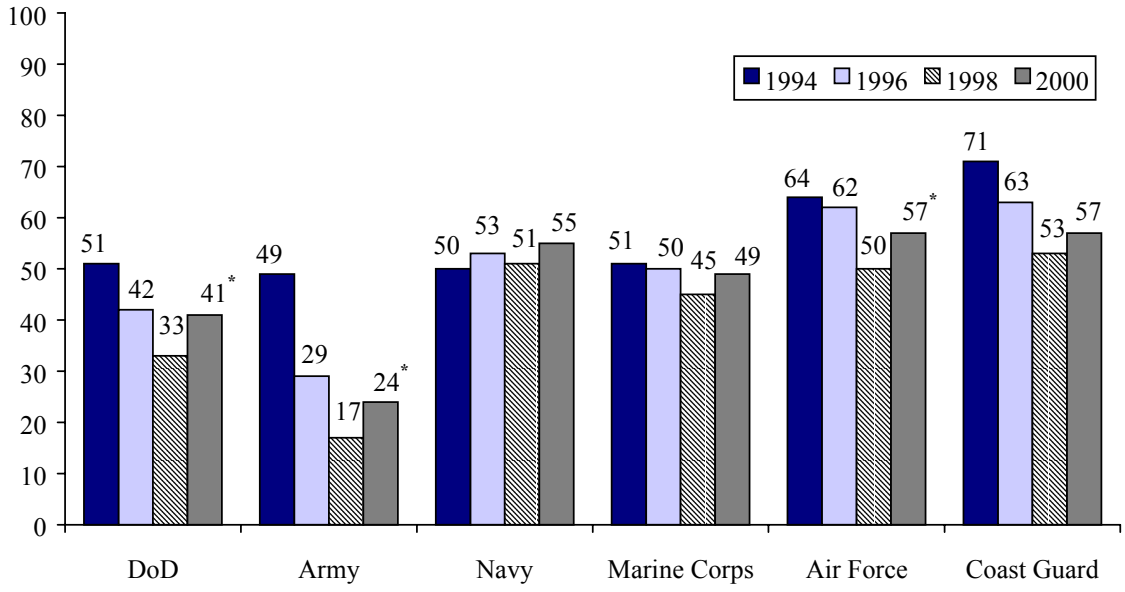
* *T*-tests with a cutoff of alpha equal to .05 were used to determine statistically significant changes between 1998 and 2000. The frequencies and statistical significance calculations in this Appendix were performed on weighted data using SUDAAN® Software for the Statistical Analysis of Correlated Data, Research Triangle Park, NC: Research Triangle Institute.

Figure C.1.
Goal Achievement: Percentage Reporting Achievement of Monthly Goals 9+ Months in Past 12 Months



* Statistically significant differences from 1998 estimate at the alpha = .05 level.
Note. Question number: 2000 Q33, 1998 Q21, 1996 Q20, 1994 Q19.

Reserve and Guard Recruiters

More Reserve and Guard recruiters also reported meeting their goals/missions in FY 2000. The percentage of all Reserve Component recruiters who reported achieving their goals/missions in at least 9 months of the previous fiscal year rose from 57 percent in 1998 to 62 percent in 2000. This statistically significant gain helped to offset the decline in reported achievement that occurred from 1996 (64 percent achievement) to 1998. The percentage of recruiters in each Reserve Component who reported achieving goal in 2000 increased from 1998 levels except among Naval Reserve recruiters. Only the 9 percentage point increase (up to 71 percent) for Army National Guard recruiters, however, was significant. Reported achievement among Reserve Components, which was generally higher than among active Components, ranged from a low of 38 percent for Army Reserve recruiters to a high of 79 percent for Naval Reserve recruiters in 2000.

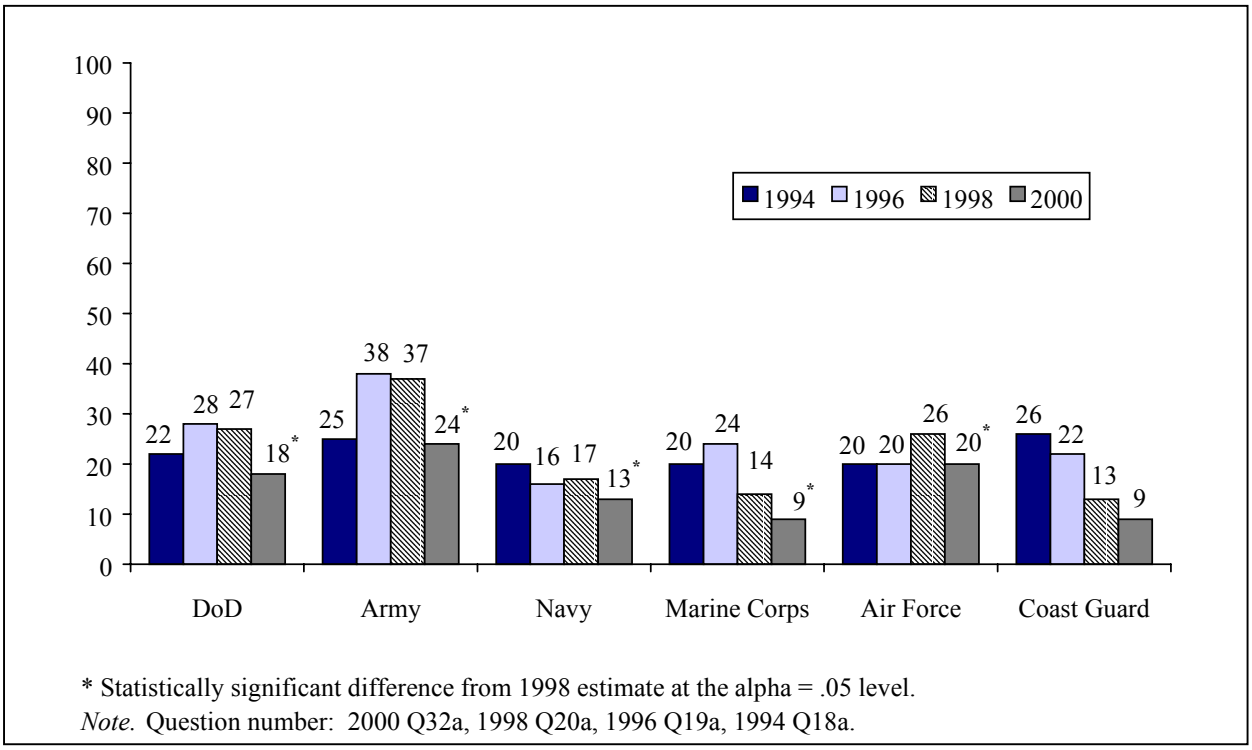
Achievability of Goals

Q32A. My monthly goals/missions are achievable. (percentage who disagree or strongly disagree)

Active Duty Recruiters

Active duty DoD recruiters were less pessimistic about goal/mission achievability in 2000. Overall, the percentage who disagreed or strongly disagreed that their goals/missions were achievable declined significantly, from 27 percent in 1998 to 18 percent in 2000, the lowest level since 1991. All Services except the Coast Guard had significant declines. The Army experienced the largest percentage point decline (13 percentage points, to 24 percent). In each of the other Services, the percentage of recruiters who believed their goals were unattainable was relatively low: Air Force, 20 percent; Navy, 13 percent; Coast Guard and Marine Corps, 9 percent.

Figure C.2.
Goal Achievement: Percentage Disagreeing That Monthly Goals Were Achievable



* Statistically significant difference from 1998 estimate at the alpha = .05 level.
Note. Question number: 2000 Q32a, 1998 Q20a, 1996 Q19a, 1994 Q18a.

Reserve and Guard Recruiters

Reserve Component recruiters, on average, were also less pessimistic about the achievability of their goals/missions in 2000. The percentage of all Reserve and Guard recruiters who believed they could not achieve their goals declined significantly, from 29 percent in 1998

to 21 percent in 2000. The percentage of recruiters in the Army Reserve sharing that perception declined by 19 percentage points, to 27 percent, and the percentage of like-minded Army National Guard recruiters declined by 6 percentage points, to 19 percent. The changes for other Reserve Components were not significant. In 2000, 26 percent of Air Force Reserve recruiters, 18 percent of Air National Guard recruiters, and 13 percent of Naval Reserve recruiters were pessimistic about achieving their goals/missions.

Job Demands

From the outset, the *Recruiter Survey* has tried to measure various aspects of job pressures confronting recruiters in their challenging task of meeting goals/missions. Two of the survey items addressing job demands are included in the topline key indicators. They ask recruiters how many hours they work per week and if they have voluntarily not taken leave because of job pressures. Responses for those who report working more than 60 hours a week and those who voluntarily forgo leave because of job demands are tracked in the topline findings.

Hours Worked

Q10. On average, what is the total number of hours per week you spend performing recruiting related duties? (percentage working more than 60 hours)

Active Duty Recruiters

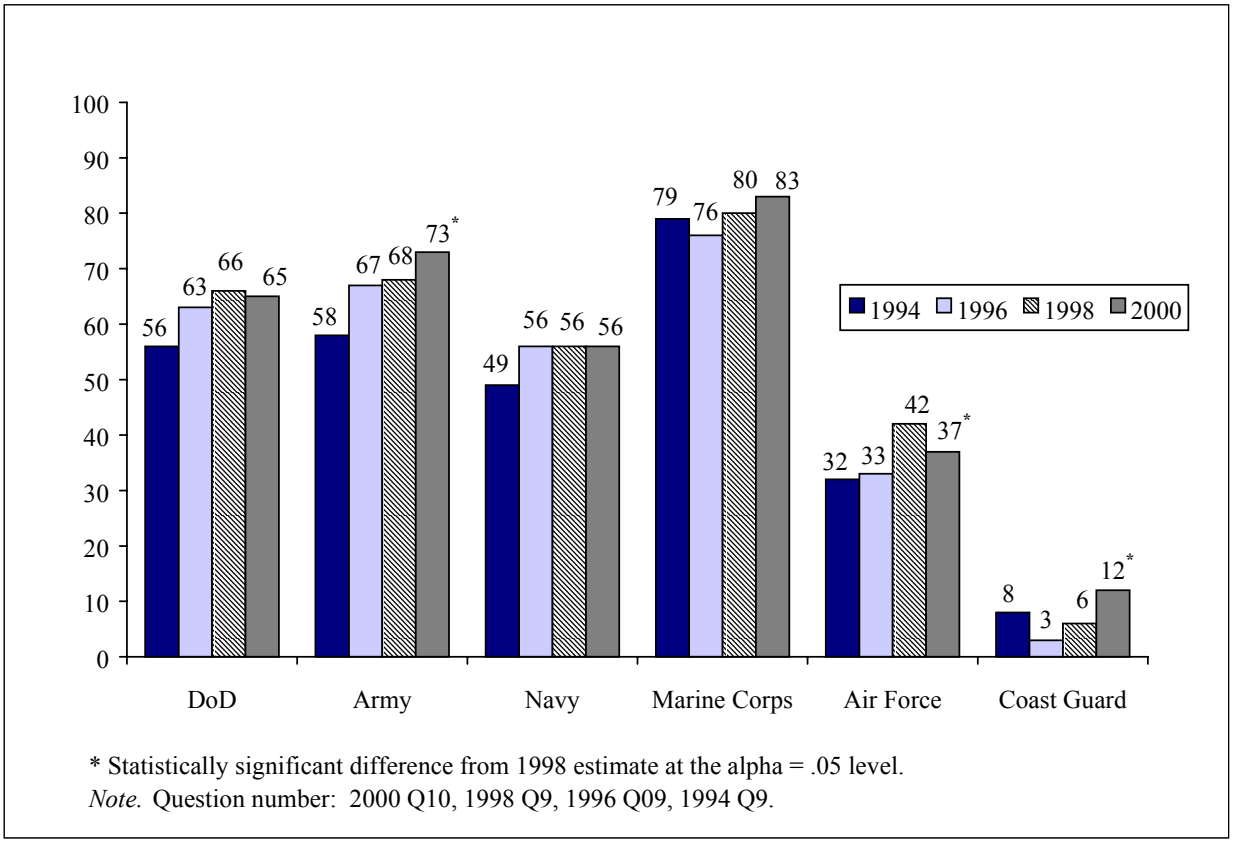
Recruiting clearly remained a difficult duty assignment in 2000 despite the allocation of additional resources to the recruiting effort. The percentage of total active DoD recruiters who reported working more than 60 hours a week (65 percent) did not change significantly from the 66 percent reported in 1998. But gains in achievement in 2000 had costs for some Services. The percentage of recruiters in the Army and the Coast Guard who reported working more than 60 hours a week rose by 5 and 6 percentage points, respectively, a significant increase for both Services. The Air Force was the only active Service in which the percentage reporting more than 60 hours declined significantly (by 5 percentage points), which helped to offset a 9 percentage point increase between 1996 and 1998. No change in percentage occurred among Navy recruiters, and the slight increase among Marine Corps recruiters was not significant. The Services varied greatly in the percentage of recruiters reporting long workweeks in 2000: 12 percent for the Coast Guard, 37 percent for the Air Force, 56 percent for the Navy, 73 percent for the Army, and 87 percent for the Marine Corps (see Figure C.3).

Reserve and Guard Recruiters

More Reserve and Guard recruiters worked long hours in 2000 than in 1998. In contrast to the overall stability in reported length of duty workweek between 1996 and 1998, the percentage of recruiters in the Reserve Component who reported very long workweeks rose significantly, from 34 percent in 1998 to 40 percent in 2000. Significant increases were reported by Army Reserve (up by 8 percentage points, to 68 percent), Army National Guard (up by 8 percentage points, to 35 percent), and Air Force Reserve (up by 10 percentage points, to 25 percent) recruiters. In contrast, the percentage of Naval Reserve recruiters working long hours

declined by 10 percentage points, to 22 percent. The Air National Guard continued to have only a small percentage of recruiters working long hours (13 percent).

Figure C.3.
Job Demands: Percentage Working More Than 60 Hours per Week on Recruiting Related Duties



* Statistically significant difference from 1998 estimate at the alpha = .05 level.
Note. Question number: 2000 Q10, 1998 Q9, 1996 Q09, 1994 Q9.

Effect of Job Demands on Leave

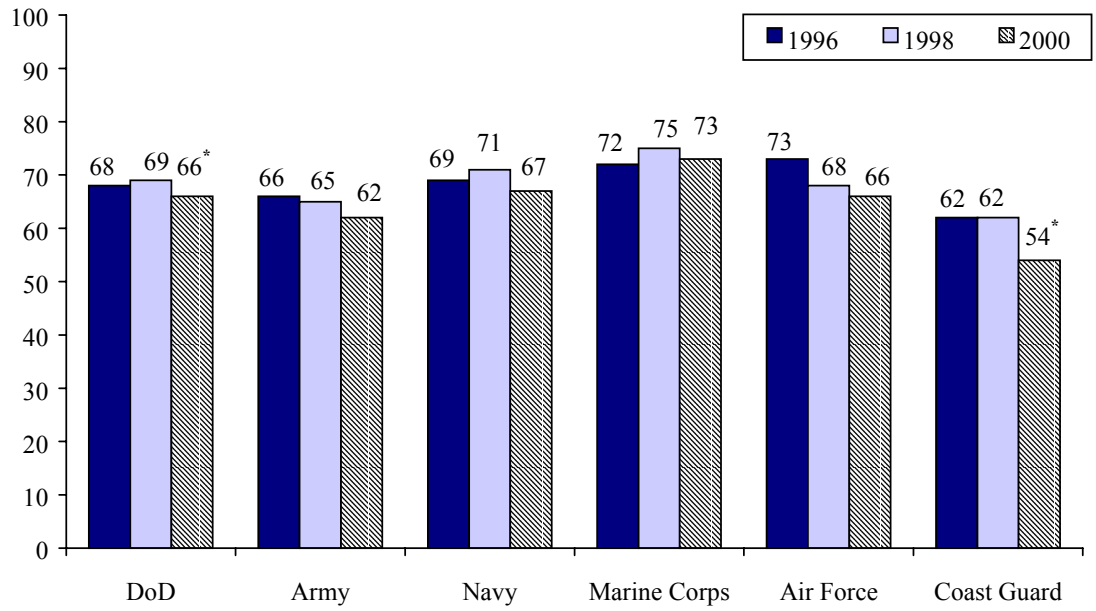
Q13. During the past year, have you voluntarily not taken leave due to the demands of your job? (percentage saying yes)

Active Duty Recruiters

Fewer active duty recruiters are voluntarily not taking leave because of the demands of their job. Between 1998 and 2000, the percentage of recruiters forgoing leave declined significantly for total active DoD recruiters (from 69 percent to 66 percent) and for Coast Guard recruiters (from 62 percent to 54 percent). The four DoD active Services also had slight declines, but the changes were not significant. Despite the good news, the fact remains that notable numbers of recruiters did voluntarily forgo leave in 2000 because of job demands:

73 percent of Marine Corps recruiters, 67 percent of Navy recruiters, 66 percent of Air Force recruiters, 62 percent of Army recruiters, and 54 percent of Coast Guard recruiters.

Figure C.4.
Job Demands: Percentage Reporting Voluntarily Not Taking Leave Due to Job Demands



* Statistically significant difference from 1998 estimate at the alpha = .05 level.
Notes. Question number: 2000 Q13, 1998 Q11, 1996 Q10. 1994 results not represented because of differences in question wording.

Reserve and Guard Recruiters

The good news does not apply to Reserve Component recruiters. There was no significant change from 1998 to 2000 in the percentage of total Reserve and Guard recruiters who reported that job demands caused them to voluntarily forego leave. In 2000, 77 percent of total Reserve Components reported voluntarily not taking leave. But overworked recruiters in two Components—the Army National Guard and the Air Force Reserve—increased significantly between 1998 and 2000 to new highs of 83 percent and 79 percent, respectively. Percentages of recruiters forgoing leave were also high in the Army Reserve (68 percent), the Naval Reserve (72 percent), and the Air National Guard (72 percent).

Improprieties

Congress and the Services remain concerned that recruiter improprieties are associated with trying to meet goals/missions in a highly competitive and stressful environment. The topline tracks responses to a key-indicator item that addresses recruiters' perceptions about how frequently improprieties occur in their recruiting command.

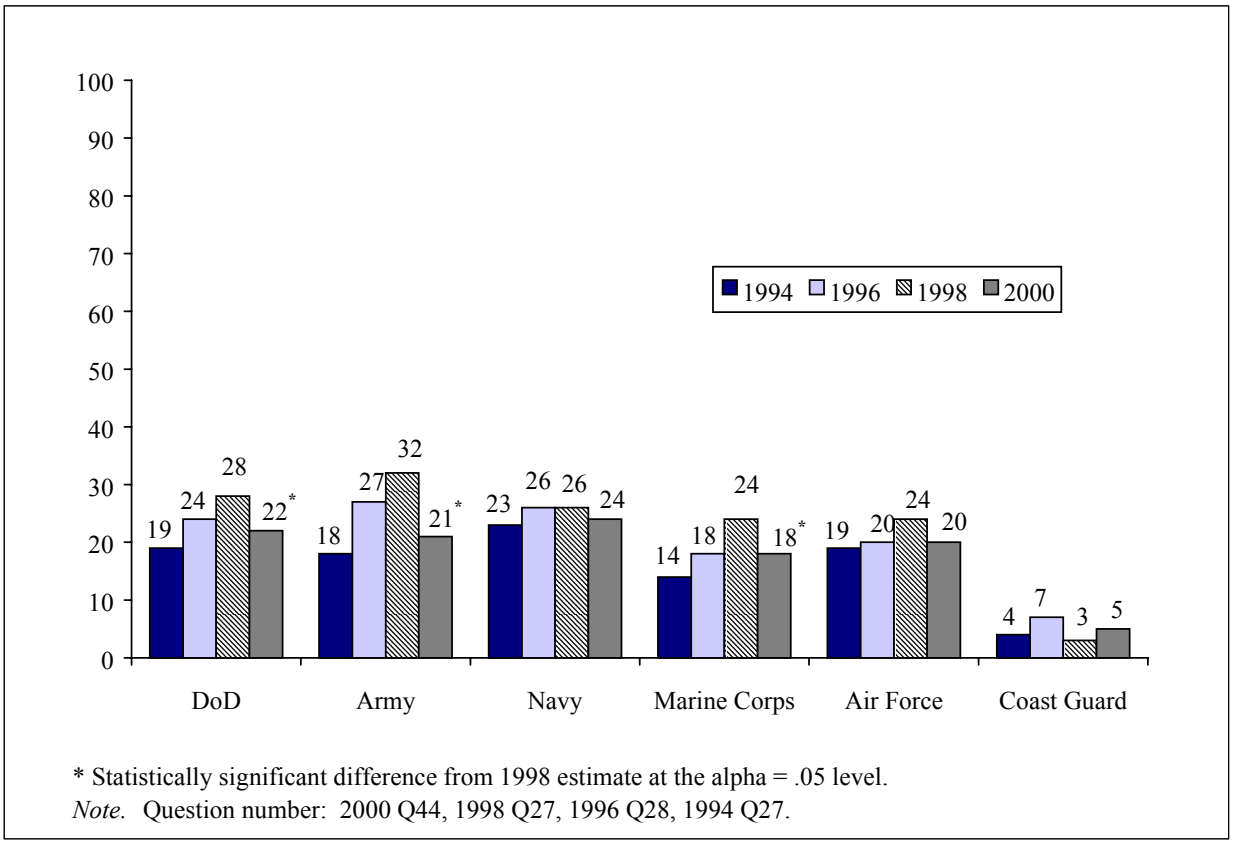
Frequency of Occurrence

Q44. How frequently do you think recruiter improprieties (i.e., bending rules to make goal/mission) occur in your recruiting command? (percentage indicating frequently)

Active Duty Recruiters

Perceptions that recruiting improprieties occur frequently declined significantly for total active duty DoD Services—from 28 percent in 1998 to 22 percent in 2000. Most of the decline stemmed from significant declines in perceptions reported by Army (11 percentage point drop, to 21 percent) and Marine Corps (6 percentage point drop, to 18 percent) recruiters. Changes for all the other active Services were not significant. The Coast Guard continued to have a low percentage of recruiters reporting frequently occurring improprieties (5 percent).

Figure C.5.
Improprieties: Percentage Reporting That Recruiter Improprieties Occur Frequently in Their Recruiting Command



* Statistically significant difference from 1998 estimate at the alpha = .05 level.
Note. Question number: 2000 Q44, 1998 Q27, 1996 Q28, 1994 Q27.

Reserve and Guard Recruiters

All Reserve and Guard Component recruiters except the Air Force Reserve also had lower percentages of recruiters perceiving that improprieties in their recruiting command occur frequently. The changes were significant, however, only for total Reserve Component recruiters (dropped from 24 percent in 1998 to 20 percent in 2000) and for Army Reserve recruiters (from 31 percent to 23 percent). Percentages for other Reserve Components in 2000 ranged from a low of 3 percent for the Air National Guard to a high of 23 percent for the Army National Guard.

Management/Supervisory Support

Recruiters rely on supervisors for information, training, and other support that helps them to succeed in their jobs. The topline findings include responses regarding recruiters who disagree that their supervisors provide good support and recruiters who disagree that they work with their superiors as a team.

Support From Supervisors

Q41C. I receive good support from my supervisors. (percentage who disagree or strongly disagree)

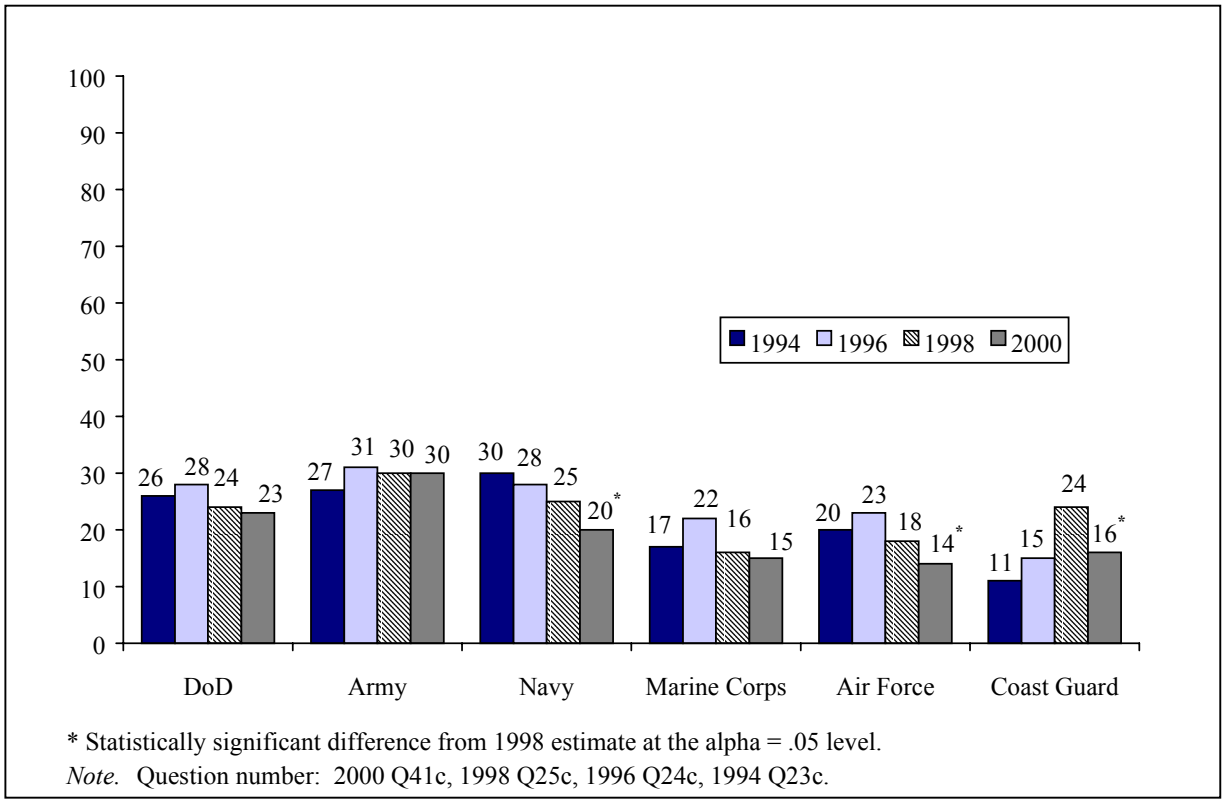
Active Duty Recruiters

Among all active duty DoD recruiters, no significant changes occurred between 1998 and 2000: Nearly a quarter remained dissatisfied with their supervisors' support (23 percent). However, significant declines in negative reports about supervisor support occurred in the Navy (down by 5 percentage points, to 20 percent) and in the Air Force (down by 4 percentage points, to 14 percent), as well as in the Coast Guard (down by 8 percentage points, to 16 percent). The percentage of Army recruiters who disagreed that their supervisors' support was good remained at 30 percent in 2000; 15 percent of Marine Corps recruiters expressed the same negative opinion (see Figure C.6).

Reserve and Guard Recruiters

Between 1998 and 2000 the percentage of total Reserve and Guard recruiters who disagreed that they had good support from their supervisors did not change significantly (28 percent in 2000). The only significant change was a 6 percentage point increase (to 32 percent) in the percentage of Army National Guard recruiters who felt that they were not receiving enough help from their supervisors. The 2000 percentages for other individual Reserve Components varied as follows: Army Reserve, 28 percent; Naval Reserve, 22 percent; Air National Guard, 19 percent; and Air Force Reserve, 12 percent.

Figure C.6.
Supervisory Support: Percentage Who "Disagree" or "Strongly Disagree" That They Receive Good Support From Their Supervisors



* Statistically significant difference from 1998 estimate at the alpha = .05 level.
Note. Question number: 2000 Q41c, 1998 Q25c, 1996 Q24c, 1994 Q23c.

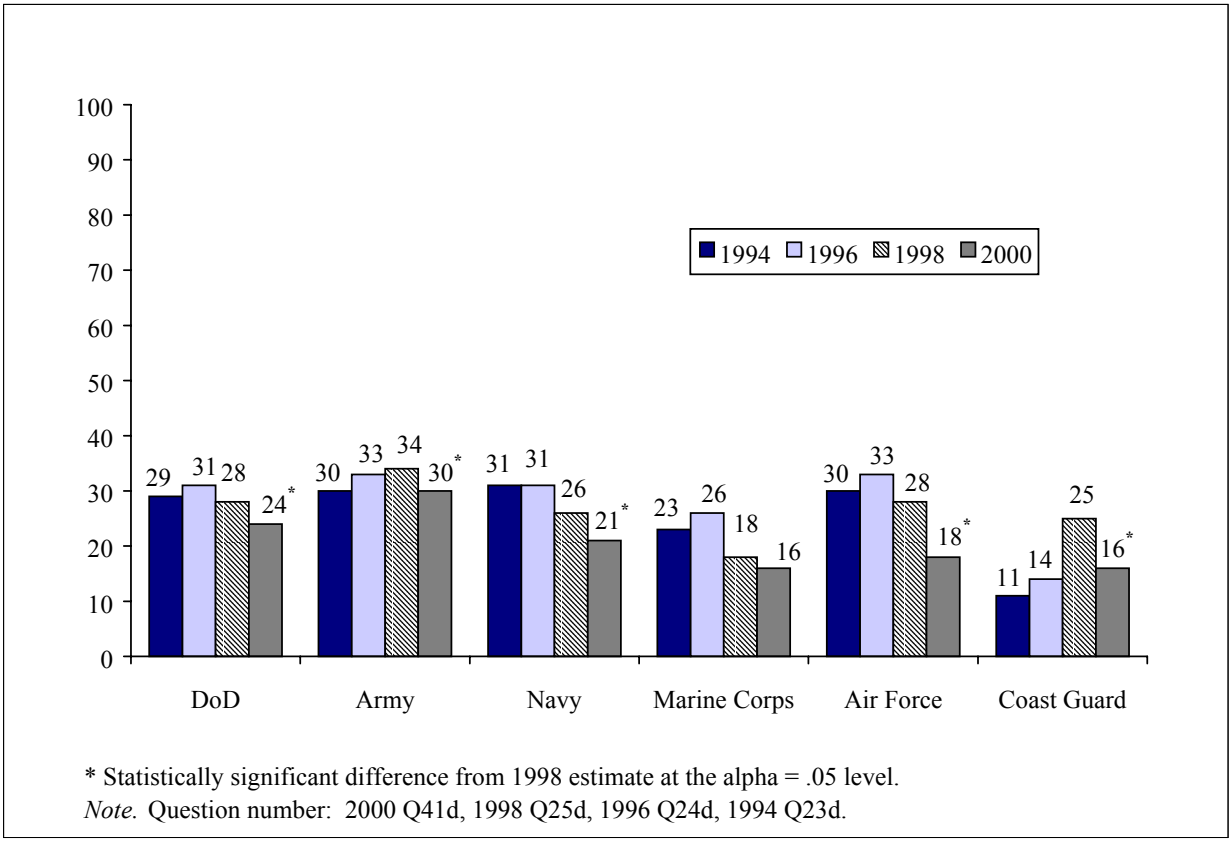
Teamwork

Q41D. My superiors and I work together as a team. (percentage who disagree or strongly disagree)

Active Duty Recruiters

Recruiters reported better teamwork with their superiors in 2000. The percentage of total active duty DoD recruiters disagreeing with the statement "My superiors and I work together as a team" declined significantly, from 28 percent in 1998 to 24 percent in 2000. Significant declines occurred for all Services except the Marine Corps. The Air Force declined 10 percentage points, to 18 percent; the Coast Guard 9 percentage points, to 16 percent (thereby offsetting a large increase between 1996 and 1998); the Navy 5 percentage points, to 21 percent; and the Army 4 percentage points, to 30 percent. Sixteen percent of Marine Corp recruiters reported they did not work as a team with their superiors.

Figure C.7.
Supervisory Support: Percentage Who "Disagree" or "Strongly Disagree" That They Work as a Team With Their Superiors



* Statistically significant difference from 1998 estimate at the alpha = .05 level.
Note. Question number: 2000 Q41d, 1998 Q25d, 1996 Q24d, 1994 Q23d.

Reserve and Guard Recruiters

There were no significant changes in reports about teamwork between 1998 and 2000 for Reserve and Guard recruiters overall or for any individual Reserve Components. Twenty-nine percent of all Reserve and Guard recruiters reported they did not work as a team with their superiors, compared with 24 percent for all active Services. The percentage of recruiters reporting a lack of teamwork varied across Reserve Components: Army National Guard, 33 percent; Army Reserve recruiters, 31 percent; Naval Reserve, 20 percent; Air National Guard, 18 percent; Air Force Reserve, 17 percent.

Job Satisfaction

Two survey items included in the topline findings measure recruiters' satisfaction with recruiting. The first simply asks how satisfied they are, and the second asks whether they would opt for another assignment if given the choice. Percentages who are dissatisfied with recruiting and percentages who would remain in recruiting by choice are reported in the topline findings.

Dissatisfaction With Recruiting

Q71A. In general, how satisfied are you with recruiting? (percentage dissatisfied or very dissatisfied)

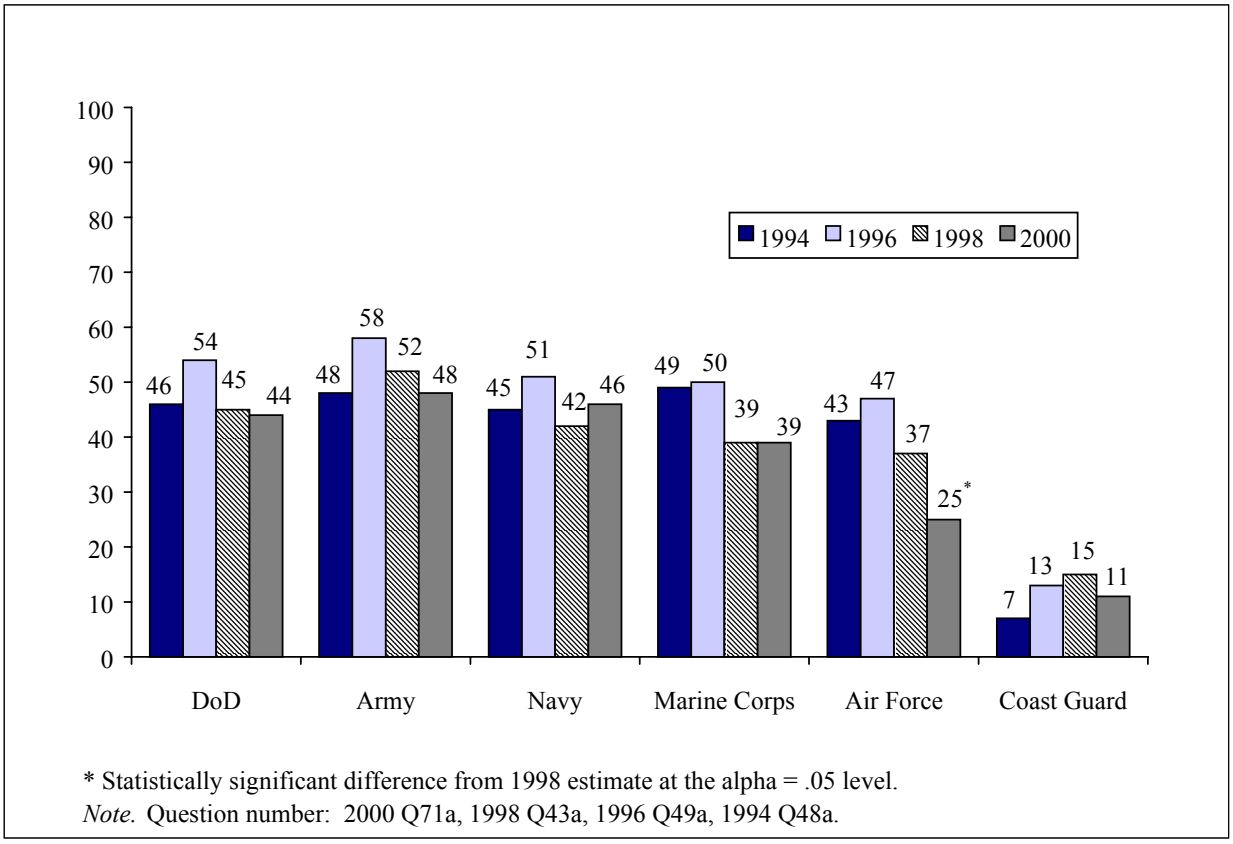
Active Duty Recruiters

Dissatisfaction with recruiting remained mostly unchanged since 1998. In 2000, 44 percent of all active duty DoD recruiters reported they were dissatisfied or very dissatisfied with their assignments. The Air Force was the only Service to have a significant decline in reports of dissatisfaction: a 12 percentage point drop, from 37 percent to 25 percent. Again, reports varied by Service: Coast Guard, 11 percent; Marine Corps, 39 percent; Navy, 46 percent; Army, 48 percent. Although some of these percentages are relatively high, they represent a decline from the all-time high percentages reported by the active DoD Services in 1996.

Reserve and Guard Recruiters

The 2000 results for overall Reserve Components mirror those for total active Services: no significant change in dissatisfaction with recruiting. The Reserve Components, however, continue to have a relatively low level of dissatisfaction (24 percent). The only significant change that occurred from 1998 to 2000 was an 8 percentage point increase in dissatisfaction among Air Force Reserve recruiters. That increase overturned the gains the Air Force Reserve made between 1996 and 1998. The percentage of recruiters expressing dissatisfaction with recruiting varied across the Reserve Components: Army Reserve, 39 percent; Naval Reserve, 22 percent; Army National Guard, 20 percent, Air Force Reserve, 17 percent, and Air National Guard, 8 percent.

Figure C.8.
Satisfaction With Recruiting: Percentage "Dissatisfied" or "Very Dissatisfied" With Recruiting



* Statistically significant difference from 1998 estimate at the alpha = .05 level.
Note. Question number: 2000 Q71a, 1998 Q43a, 1996 Q49a, 1994 Q48a.

Recruiting Versus Other Assignments

Q46. If you had the freedom to select an assignment next month, which of the following would you choose? (percentage who would remain in recruiting)

Active Duty Recruiters

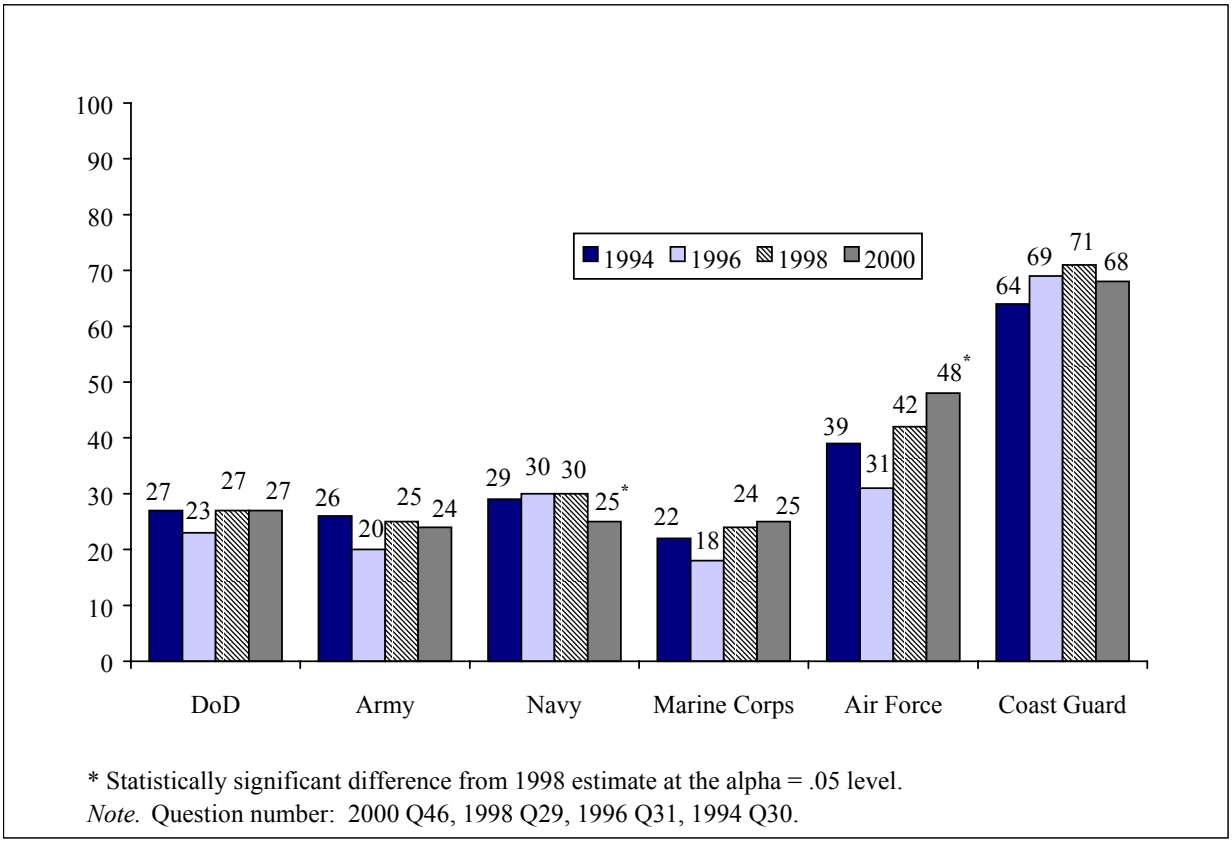
Given the choice to opt out of their current recruiting duty, most active duty DoD recruiters would do so. Only 27 percent of them would remain in recruiting if they had the choice to select another assignment in the next month. There was no significant change in the overall percentage from 1998 to 2000, but the percentage of Air Force recruiters who would choose recruiting duty increased significantly, from 42 percent in 1998 to 48 percent in 2000. On the downside, the percentage of Navy recruiters who said they would remain in recruiting decreased significantly, from 30 percent in 1998 to 25 percent in 2000. The Coast Guard once again had a relatively high percentage of recruiters who would continue in their current assignment (68 percent). Percentages for the other active Services did not change significantly:

25 percent of Marine Corps recruiters and 24 percent of Army recruiters would select recruiting duty (see Figure C.9).

Reserve and Guard Recruiters

The only significant change for total or individual Reserve Components between 1998 and 2000 was a 10 percentage point increase in the percentage of Army Reserve recruiters choosing to remain in recruiting. That gain helped to close the relatively large gap between Army Reserve recruiters and recruiters in other Components: Army Reserve, 32 percent; Naval Reserve, 53 percent; Army National Guard, 56 percent; Air National Guard, 67 percent; Air Force Reserve, 73 percent.

Figure C.9.
Satisfaction With Recruiting: Percentage Who Would Choose to Remain in Recruiting



* Statistically significant difference from 1998 estimate at the alpha = .05 level.
Note. Question number: 2000 Q46, 1998 Q29, 1996 Q31, 1994 Q30.

Appendix D

Reserve Component Model Results

RESERVE COMPONENT MODEL RESULTS

The structural model presented in this report was developed using survey data from active duty production recruiters only. Active and Reserve recruiter survey responses were not combined for the analysis because we believed they did not share common structural relationships among the constructs in the model. Specifically, we felt that the Active and Reserve Component recruiting environments were so dissimilar that constructs relevant for modeling active recruiters would not work for Reserve recruiters.

Even a broad characterization of active and Reserve recruiting duty reveals fundamental differences. Considering who is recruited, active duty recruiters concentrate on youth in high school or shortly beyond while most Reserve recruits have prior military experience and are older. The recruiting processes are very different as well. Oversimplified, it can be characterized as the difference between cold calling and receiving referrals. Where active duty recruiters must canvas potential recruits, Reserve Component recruiters receive significant numbers of recruits as a consequence of exit interviews conducted at the time members are leaving active duty. Because of such differences, data from active and Reserve Component recruiters were not combined for modeling.

In this appendix we present results from an examination we conducted to test our assumption that *Military Recruiter Survey* (*MRS*) data on Reserve Component recruiters should be excluded from our analysis. We applied the statistical model developed for active recruiters to Reserve and Guard recruiter *MRS* data and assessed how well the model fit Reserve Component data. Specifically, we used the same computer code that was used to estimate the active recruiter model, but we used Reserve Component survey data only.

Our evaluation focused exclusively on the statistical significance of paths specified by the model. Table D.1 presents estimated unstandardized coefficients and their associated *t* statistics. The threshold value of *t* for a statistically significant coefficient is 1.96 (with $p = .05$). Of the 15 coefficients estimated, only 5 were statistically significant. Of these, 4 were constructs influencing satisfaction with recruiting. The other significant path was that from recognition to strain. This path was consistent with our original assumption, at least with respect to the relationship between recognition and strain. Strain was reduced if recruiters were recognized for doing a good job and if promotion opportunities were considered better than average.

Satisfaction with recruiting for both Reserve and Active Component recruiters was influenced by the same factors. Although the specific values of the coefficients for the two models differ, their relative magnitudes and directions were the same. The most influential construct was family concerns, followed by the influence of strain on satisfaction with recruiting. As in the active model, the coefficients for both importance of recruiting and supervisor support were less than half the magnitude of the effect of strain on satisfaction with recruiting.

The only portion of the model adequately fitting both active and Reserve recruiters was that portion focusing on satisfaction with recruiting. Neither performance nor strain, with one exception, was influenced by factors such as ease of meeting goals, hours worked, and others

that proved influential in modeling active duty recruiter survey responses. It appears that the decision not to combine active and Reserve data was prudent.

Table D.1.
Reserve Component Recruiter Model: Structural Equation Modeling Results

	Unstandardized Coefficients With *t* Statistics		
Influencing Construct	**Perceived Strain**	**Satisfaction w/Recruiting**	**Self-Reported Performance**
Ease of Meeting Goals	0.199 (0.976)		0.112 (0.337)
Control Over Duty Assignment	3.680 (1.484)		6.578 (1.571)
Hours Worked	0.831 (0.898)		2.133 (1.590)
Perceived Goal Pressure	0.327 (1.941)		
Office Appearance	-0.029 (-0.960)		0.177 (0.587)
Recognition	***-0.378*** (-3.477)		
Importance of Recruiting		***0.241*** (2.562)	
Supervisor Support		***-0.175*** (-2.699)	
Family Concerns		***0.919*** (6.308)	
Perceived Strain		***-0.449*** (-9.058)	-0.008 (-0.038)

Notes. Boldfaced, italicized coefficients are statistically significant at alpha = .05.
T statistics are presented within parentheses.

Appendix E

Correlation Matrix

Table E.1.

Descriptive Statistics and Zero-Order Correlations for Indicator Variables (Active Duty Recruiters)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
1. Q6	1.00																																						
2. Q9	-0.32	1.00																																					
3. Q10	-0.20	0.16	1.00																																				
4. Q12	-0.17	0.13	0.30	1.00																																			
5. Q14	0.05	-0.06	-0.16	-0.10	1.00																																		
6. Q22a	0.00	0.06	0.04	0.03	-0.05	1.00																																	
7. Q22b	-0.04	0.07	0.08	0.03	-0.07	0.81	1.00																																
8. Q22c	-0.06	0.09	0.08	0.07	-0.09	0.56	0.58	1.00																															
9. Q26b	-0.27	0.20	0.20	0.20	-0.14	0.13	0.14	0.20	1.00																														
10. Q32a	-0.11	0.14	0.13	0.08	-0.10	0.19	0.20	0.22	0.22	1.00																													
11. Q32b	-0.14	0.16	0.18	0.14	-0.12	0.17	0.19	0.23	0.26	0.65	1.00																												
12. Q32c	0.08	-0.06	-0.24	-0.12	0.13	-0.05	-0.07	-0.08	-0.14	-0.10	-0.08	1.00																											
13. Q32d	0.11	-0.07	-0.22	-0.15	0.15	-0.11	-0.12	-0.14	-0.28	-0.11	-0.12	0.35	1.00																										
14. Q32e	0.14	-0.15	-0.28	-0.17	0.20	-0.10	-0.13	-0.15	-0.26	-0.20	-0.21	0.39	0.47	1.00																									
15. Q33	0.20	-0.15	-0.03	-0.04	0.03	-0.06	-0.08	-0.11	-0.12	-0.28	-0.26	0.01	-0.05	0.07	1.00																								
16. Q34	0.23	-0.17	-0.07	-0.10	0.04	-0.04	-0.05	-0.09	-0.15	-0.21	-0.22	0.01	-0.05	0.10	0.66	1.00																							
17. Q35	0.14	-0.17	-0.15	-0.14	0.11	-0.13	-0.14	-0.20	-0.20	-0.47	-0.52	0.10	0.10	0.21	0.37	0.34	1.00																						
18. Q36	-0.19	0.09	-0.01	0.11	-0.02	0.05	0.06	0.12	0.14	0.14	0.15	-0.01	0.00	-0.06	-0.37	-0.43	-0.21	1.00																					
19. Q40g	-0.14	0.17	0.14	0.14	-0.16	0.16	0.16	0.22	0.34	0.20	0.23	-0.05	-0.23	-0.24	-0.07	-0.07	-0.20	0.04	1.00																				
20. Q40i	-0.03	0.08	0.19	0.06	-0.08	0.09	0.11	0.11	0.21	0.15	0.15	-0.14	-0.18	-0.19	0.00	0.01	-0.12	-0.11	0.22	1.00																			
21. Q42b	-0.11	0.14	0.07	0.12	-0.14	0.19	0.18	0.23	0.26	0.25	0.26	0.00	-0.15	-0.19	-0.09	-0.07	-0.22	0.05	0.38	0.16	1.00																		
22. Q42c	-0.14	0.13	0.01	0.11	-0.04	0.14	0.15	0.19	0.22	0.21	0.22	0.02	-0.10	-0.13	-0.10	-0.09	-0.20	0.20	0.21	0.04	0.29	1.00																	
23. Q42d	-0.17	0.10	0.01	0.06	-0.05	0.12	0.14	0.12	0.16	0.19	0.16	0.03	-0.06	-0.10	-0.11	-0.12	-0.11	0.20	0.14	0.01	0.21	0.40	1.00																
24. Q42e	-0.03	0.04	-0.10	-0.06	0.00	0.08	0.07	0.04	0.00	0.05	0.02	0.12	0.06	0.03	-0.04	-0.05	0.00	0.10	0.05	-0.09	0.10	0.21	0.44	1.00															
25. Q42g	0.04	0.03	-0.11	-0.03	-0.02	0.10	0.08	0.13	0.10	0.14	0.13	0.06	-0.06	-0.05	-0.02	-0.01	-0.13	0.07	0.16	0.06	0.22	0.23	0.13	0.10	1.00														
26. Q42h	-0.31	0.18	0.20	0.20	-0.15	0.16	0.17	0.25	0.43	0.30	0.30	-0.17	-0.29	-0.33	-0.19	-0.22	-0.31	0.26	0.34	0.17	0.32	0.33	0.29	0.05	0.26	1.00													
27. Q46	-0.14	0.11	0.10	0.12	-0.09	0.12	0.12	0.15	0.25	0.17	0.16	-0.09	-0.19	-0.18	-0.09	-0.11	-0.17	0.13	0.19	0.11	0.17	0.14	0.17	0.01	0.07	0.38	1.00												
28. Q50e	-0.02	0.03	0.06	0.02	-0.02	0.03	0.04	0.05	0.07	0.07	0.08	-0.02	0.00	-0.02	-0.05	-0.04	-0.07	-0.01	0.05	0.02	0.06	0.05	0.04	0.02	0.00	0.07	0.03	1.00											
29. Q50f	-0.02	0.05	0.03	-0.01	0.00	0.01	0.02	0.04	0.03	0.05	0.04	0.00	0.01	-0.01	-0.05	-0.02	-0.05	-0.01	0.03	0.01	0.05	0.03	0.03	0.04	0.04	0.05	0.02	0.58	1.00										
30. Q56	-0.26	0.21	0.27	0.17	-0.14	0.17	0.17	0.22	0.41	0.25	0.25	-0.19	-0.29	-0.30	-0.15	-0.16	-0.27	0.21	0.27	0.19	0.25	0.25	0.20	0.01	0.10	0.51	0.33	0.06	0.03	1.00									
31. Q57	-0.05	0.10	0.03	0.08	-0.12	0.09	0.07	0.12	0.23	0.14	0.14	-0.03	-0.18	-0.13	-0.01	-0.01	-0.15	0.04	0.28	0.15	0.25	0.15	0.07	0.05	0.13	0.19	0.14	0.01	0.01	0.19	1.00								
32. Q71a	-0.35	0.23	0.22	0.24	-0.16	0.19	0.21	0.26	0.46	0.33	0.33	-0.17	-0.30	-0.35	-0.22	-0.25	-0.34	0.33	0.34	0.16	0.31	0.34	0.32	0.06	0.18	0.67	0.42	0.05	0.04	0.58	0.19	1.00							
33. Q42I42J*	0.24	-0.15	-0.32	-0.22	0.17	-0.14	-0.17	-0.21	-0.35	-0.27	-0.27	0.28	0.37	0.39	0.16	0.16	0.28	-0.16	-0.25	-0.21	-0.21	-0.18	-0.15	0.08	-0.03	-0.47	-0.32	-0.02	0.00	-0.50	-0.14	-0.54	1.00						
34. Q42K42L*	0.28	-0.17	-0.29	-0.23	0.15	-0.14	-0.17	-0.19	-0.33	-0.25	-0.27	0.22	0.31	0.34	0.17	0.17	0.26	-0.21	-0.24	-0.15	-0.20	-0.21	-0.22	0.02	-0.02	-0.46	-0.32	-0.03	-0.01	-0.46	-0.11	-0.57	0.74	1.00					
35. Q42M42N*	0.24	-0.16	-0.24	-0.20	0.16	-0.19	-0.21	-0.24	-0.35	-0.31	-0.32	0.23	0.32	0.38	0.21	0.19	0.32	-0.23	-0.29	-0.17	-0.27	-0.27	-0.26	-0.02	-0.10	-0.52	-0.35	-0.05	-0.02	-0.50	-0.15	-0.63	0.68	0.75	1.00				
36. Q29B66A*	0.01	0.04	-0.12	-0.01	0.04	0.09	0.07	0.11	0.10	0.00	0.02	0.13	0.06	0.10	-0.03	-0.06	0.01	0.05	0.14	-0.02	0.12	0.07	0.02	0.10	0.11	0.03	-0.03	-0.01	0.02	-0.02	0.13	0.03	0.08	0.09	0.05	1.00			
37. Q41C41D*	-0.14	0.17	0.14	0.15	-0.19	0.24	0.25	0.32	0.31	0.30	0.30	-0.10	-0.26	-0.34	-0.17	-0.18	-0.27	0.16	0.45	0.15	0.45	0.26	0.22	0.11	0.16	0.38	0.22	0.07	0.04	0.34	0.24	0.44	-0.32	-0.31	-0.42	0.17	1.00		
38. Q42A32I*	-0.13	0.15	0.14	0.12	-0.18	0.23	0.24	0.33	0.31	0.29	0.30	-0.09	-0.27	-0.31	-0.14	-0.14	-0.26	0.12	0.44	0.16	0.45	0.22	0.18	0.08	0.17	0.36	0.21	0.06	0.05	0.30	0.25	0.38	-0.30	-0.28	-0.38	0.20	0.76	1.00	
39. Q41B66F*	-0.03	0.04	-0.03	0.04	-0.04	0.06	0.05	0.05	0.09	0.11	0.09	0.06	0.02	0.01	-0.06	-0.08	-0.07	0.04	0.11	0.00	0.12	0.07	0.04	0.06	0.05	0.06	0.00	-0.01	-0.01	0.04	0.01	0.06	0.01	0.01	0.00	0.16	0.18	0.09	1.00
MEAN	2.677	1.310	3.822	2.375	1.845	2.060	2.039	2.712	3.639	2.466	2.708	2.191	2.004	2.483	3.140	2.114	2.709	2.106	3.147	3.869	2.391	2.198	1.646	1.285	3.124	3.590	2.061	3.722	3.847	3.306	2.388	3.109	2.090	2.783	2.924	2.903	2.557	2.706	2.734
STD	1.370	0.462	1.239	1.040	0.362	1.112	1.020	1.209	1.207	0.957	1.091	1.119	0.998	1.105	1.195	1.025	1.070	0.855	1.202	1.146	0.998	0.883	0.694	0.515	1.255	1.260	0.937	3.776	4.544	1.347	0.619	1.275	1.022	1.046	1.104	0.655	1.095	0.988	0.620
N	3621	3622	3632	3621	3627	3579	3575	3507	3196	3526	3563	3563	3512	3519	3293	3451	3610	3587	3583	3583	3618	3600	3610	3613	3583	3608	3571	3128	3118	3433	3364	3624	3602	3600	3576	3506	3577	3486	3551

* Parcels used as indicators

Appendix F

Measurement Model

Table F.1.
Standardized Estimates for Active Duty Recruiter Measurement Model by Factor

Question Item	Performance	Satisfaction W/Recruiting	Perceived Strain	Office Appearance	Ease of Meeting Goals	Hours Worked	Control Over Duty Assignment	Recognition	Perceived Goal Pressure	Supervisor Support	Importance of Recruiting	Family Concerns
Q33	0.94											
Q34	0.84											
Q36	-0.44											
Q71a		1.10										
Q42h		0.97										
Q56		0.91										
Q46		0.45										
Q40I		0.27										
Q42M42N*			0.94									
Q42K42L*			0.91									
Q42I42J*			0.85									
Q22a				0.99								
Q22b				0.93								
Q22c				0.77								
Q32b					0.89							
Q32a					0.74							
Q35					-0.70							
Q10						0.77						
Q12						0.46						
Q14						-0.11						
Q6							0.94					
Q9							0.22					
Q42b								0.64				
Q42g								0.42				
Q32e									0.80			
Q32d									0.66			
Q32c									0.57			
Q1C41D*										0.98		
Q42A32I*										0.84		
Q41B66F*										0.10		
Q42d											0.53	
Q42c											0.50	
Q42e											0.25	
Q40g												0.74
Q26b												0.71
Q57												0.23

*Parcels used as indicators.

Appendix G

Analytic Method

ANALYTIC METHOD

In this appendix we describe the analytic method we used to estimate and evaluate the model of active duty recruiter satisfaction and performance displayed in Figure 3.1. The first section includes an overview of the statistical technique used in the modeling process, including background, steps involved in model specification, model estimation, and model evaluation. In the second section we discuss the analysis strategy that yielded the findings presented in Chapter 3.

The statistical method adopted for our modeling of recruiter satisfaction and performance is generally referred to as structural equation modeling (SEM) with latent variables. SEM is used to systematically identify the possible relationships among a set of unobserved constructs (referred to in SEM as *latent variables*) and their indicators (*observed variables*). Each structural equation model describes a different "structure" of relationships. Researchers check to see how well their data fit the structural model.

SEM can be characterized as a sophisticated amalgam of systems regression and factor analysis techniques. The procedures for measuring latent variables are similar to those used in factor analysis. Also, the statistical relationships among latent variables in the structural model are similar to the statistical relationships among variables in systems regression analysis. SEM, however, differs from the regression and factor analysis analogy in two important respects. First, both the structural and measurement models are estimated simultaneously. Second, the error structures (i.e., correlated or not) for both the measurement and structural models must be specified prior to estimation.

The SEM technique thus requires a comprehensive interaction between theoretical expectation and statistical specification, estimation, and evaluation. Model specification must address the hypothesized relationships among major latent variables, measurement of the latent variables, and the expected error/covariance structure among both observed and unobserved measures. Because of these features, structural equation models are much more flexible and more practically demanding than traditional regression or factor analyses. They are also a more powerful alternative to multiple regression, path analysis, and factor analysis.

Several statistical software packages support SEM analyses. The prominent programs include the SAS®, LISREL®, EQS, and AMOS. In this study we used SAS system's PROC CALIS (Covariance Analysis of Linear Structural Equations) procedure in conjunction with the maximum likelihood method of parameter estimation.

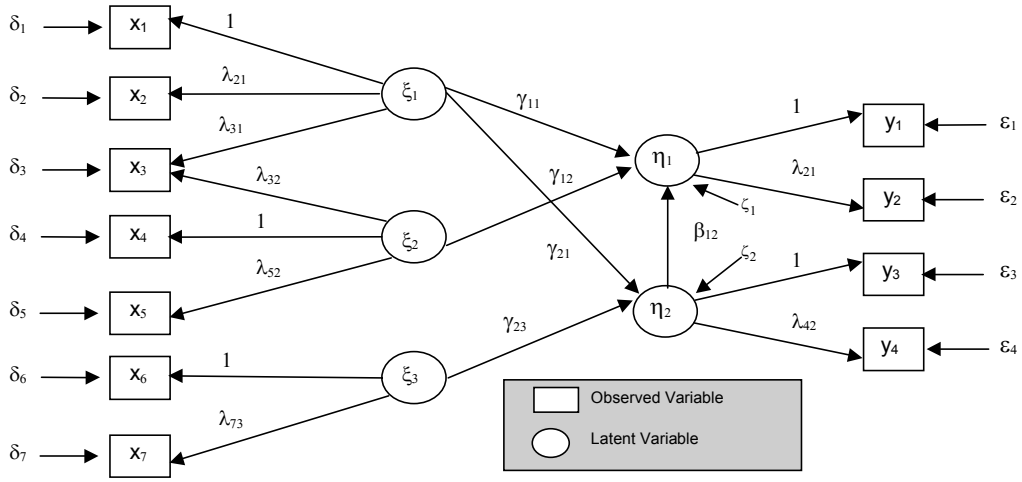
In the following section, we use a hypothetical model to describe the components of the SEM technique more fully. We then use that description as a platform for considering the model of military recruiter satisfaction and performance.

Overview of Statistical Method

Structural equation models require the specification (parameterization) of three categories of matrices: measurement matrices, structural matrices, and error/covariance matrices. Figure G.1 displays a hypothetical structural equation model in the form of a path diagram.

Latent variables are represented by oval shapes, observed measures by rectangles, and error terms by ε's, δ's, and ζ's. The structural coefficients and measurement coefficients are associated with path arrows. Next, we describe the components (measurement, structure, error) of this hypothetical model.

Figure G.1.
Hypothetical Structural Equation Model



Model Components

Measurement Model

A measurement model in its purest form is a confirmatory factor analysis. The measurement model operationalizes the relationship between observed variables (indicators) and latent variables; in other words, the analyst specifies how each observed variable is related to the underlying latent variable that it measures. This is usually a four-step process: The analyst (1) defines or gives meaning to the latent variable by naming it, (2) indicates the dimensions and variables that represent the latent variable, (3) forms the measures and the operational definition, and (4) specifies the relation between the measures and the latent variables (Bollen, 1989).

Although most researchers acknowledge the existence of errors in variable measurement, many statistical procedures do not allow modeling of this property. Even more advanced modeling procedures, such as systems regression analysis, generally assume variables are measured without error. That assumption often forces researchers to disregard useful measures that do not meet strict reliability requirements, yet hold utility for investigative purposes. Typically, observed variables, such as those in surveys, are measured with error. SEM explicitly acknowledges measurement error by incorporating error components for all observed variables. As with latent variables, the arrows pointing from error terms to observed variables denote that error represents a causal component of the observed variable. This feature of SEM allows the analyst to isolate the non-error component—that portion of the variable of most interest to

researchers. Furthermore, if the reliability of the variable is known (e.g., from past research), then the specific portion of variability representing error can be preset.

Another component of the measurement model is the parameter coefficients, which depict the strength of the relationship between latent variables and observed variables. In the measurement model, parameter coefficients are analogous to regression coefficients or factor scores. Goodness-of-fit measures are used to evaluate both the measurement model and the structural model, which is discussed next. Once the fit of the measurement model is found to be acceptable, the researcher tests the structural model.

Structural Model

The second component of SEM—the structural model—depicts the causal relationships among latent variables. Within the structural model, two types of latent variables are distinguished: Endogenous latent variables have hypothesized predictors within the model, whereas exogenous latent variables are not explained by the model but influence other variables in the model. Endogenous latent variables may interact causally, but exogenous latent variables function only as causal antecedents. Arrows indicate the hypothesized causal directions and relationships among the latent variables in the structural model.

Endogenous latent variables can be influenced by exogenous latent variables, other endogenous latent variables, or both. The paths between latent variables are represented by structural coefficients depicting the strength and nature of the relationship. Structural models, like regression models, contain a measurement error component. Thus, a structural model depicts each endogenous latent variable in terms of its hypothesized causal antecedents and a measurement error component.

As the preceding discussion indicates, analysts using SEM can simultaneously measure latent variables and estimate relationships among the latent variables. Thus, a primary advantage of SEM is that it allows for the simultaneous estimation of path coefficients that result in overall estimates of model appropriateness and structural coefficients that account for multicollinearity among predictors (Tabachnick & Fidell, 1996).

Error Variance/Covariance Model

The third component of SEM that must be specified is the error variance/covariance structure among observed and latent variables. For simple recursive (unidirectional) models, such as the one tested, covariances should not be estimated for residual terms (Hatcher, 1994). For the model, error covariances were set to zero since no relationships between the errors were expected.

Model Specification and Estimation of Parameters

SEM employs a variety of "full information" techniques to estimate parameters (Maruyama, 1997). When analysts apply these techniques to multiple equation systems, they can solve a single equation while accounting for restrictions specified in other equations. Thus, SEM

controls for the possibility that simultaneous causation effects may be misinterpreted if "between equation" restrictions are overlooked. This amounts to full, simultaneous assessment of models as opposed to piecemeal assessment of multivariate relationships.

Prior to estimating model parameters, analysts must fully specify the form of the model according to expectations set forth in a theoretical framework. This task is accomplished with a series of equations describing the hypothesized relationships among latent and observed variables. These equations pertain to all relationships in the measurement and structural components of a model. Using equation notation and terminology corresponding to PROC CALIS output for model specification and parameter estimates, we discuss parameter estimation in each of the three components of the SEM model displayed in Figure G.1.

Measurement Model

In the measurement model three parameters are estimated: the factor loadings (path coefficients), the variance for the exogenous and endogenous latent variables, and the covariance between latent variables. The equation to estimate the exogenous and endogenous latent variables are represented as:

$$\mathbf{x} = \Lambda_{\mathbf{x}} \xi + \delta$$
$$\mathbf{y} = \Lambda_{\mathbf{y}} \eta + \varepsilon$$

where $\mathbf{x}$ = observed indicators of the exogenous latent variables, $\mathbf{y}$ = observed indicators of the endogenous latent variables, $\Lambda_{\mathbf{x}}$ = the coefficients of the regression of x on ξ, $\Lambda_{\mathbf{y}}$ = the coefficients of the regression of y on η, ξ = the exogenous latent variables, η = endogenous latent variables, δ = measurement errors in x, and ε = measurement errors in y. Please note: Boldface symbols denote that the matrix contains all the model estimates represented by that particular symbol. Hence, ξ represents the matrix containing all exogenous latent variables ξ_i.

In the measurement model, latent variable variance is not estimated because latent variables are hypothetical concepts that have no established metric or scale (the scale indeterminacy problem; Hatcher, 1994). The model can be identified despite this problem by fixing variance to one.

Structural Model

The components of the structural model are represented by the following equation:

$$\eta = B\,\eta + \Gamma\,\xi + \zeta$$

In this equation a vector of endogenous latent variables (η) is depicted in terms of the effects from other endogenous and exogenous latent variables, plus a disturbance factor. The effects of endogenous latent variables are represented by the structural coefficient vector, B, which represents the effects from the corresponding vector of endogenous latent variables, η. Similarly, the effect of exogenous latent variables are represented by the structural coefficient vector, Γ, which represents the effects the corresponding vector of exogenous latent variables, ξ.

Finally, ζ represents a vector of disturbance terms accounting for error in the structural equations. That is, endogenous latent variables result from the influence of other endogenous latent variables, exogenous latent variables, and some error in equations. This component of SEM resembles path analytic models.

Variance/Covariance Model

Unlike path analytic or factor analyses, specification of variance and covariances (among constructs, observed indicators, and error terms) is a major activity in SEM. Another term for structural equation techniques is analysis of covariance structures. There are four matrices that must be specified for a structural equation model. These matrices, shown below, represent the following relationships:

ϕ	Covariance among the exogenous latent variables
φ	Error covariance among the endogenous latent variables
θ	Error covariance among the exogenous observed variables
θ_δ	Error covariance among the endogenous observed variables

The specific nature of these four matrices is also determined by theoretical considerations. For instance, error terms for observed variables are typically assumed to be uncorrelated. Thus, the off-diagonal elements of any matrix containing error components for observed variables would not be estimated.

Parameter Estimation

Estimation occurs when an implied, or hypothesized, covariance matrix is specified based on the model adopted. This computed matrix is compared with the covariance matrix among the observed variables. Structural equation modeling provides an assessment of the extent to which the observed variable covariance matrix reflects the hypothesized variable covariance matrix (Long, 1983).

Methods of parameter estimation available in the PROC CALIS program include maximum likelihood and a two-part estimation method in which PROC CALIS first computes unweighted least-square estimates, then uses them as initial values to compute either maximum likelihood or generalized least-square estimates.

Model restrictions and underlying variable characteristics determine the appropriateness of each estimation procedure. Regardless of the specific procedure, each operates from the same basic theoretical goal: to produce an implied covariance matrix that closely approximates the observed covariance matrix. In this study, the maximum likelihood method was used to obtain parameter estimates.

Model Evaluation

After parameter estimates are obtained, analysts can use various fit indexes to evaluate the CALIS solutions. To date, there is no single optimal test; therefore, several tests are used to evaluate the fit of a specified model. One class of fit indexes pertains to the overall fit of the model, where "fit" concerns the closeness between the implied and observed covariance matrixes. Chi-square represents one of several overall model fit indexes. Actually, chi-square is a "badness-of-fit" measure, and, if significant, the model is usually interpreted as being implausible for the sample data. A more definitive statement concerning this measure is not warranted because of the chi-square test's substantial dependence on sample size. For instance, if a sample is very large (e.g., $n = 3{,}000$), the power for the test is great and virtually any value will be significant, meaning almost no model will fit.

A second overall fit measure, the goodness of fit index (GFI), provides "a measure of the relative amount of variances and covariances jointly accounted for by the model" (Jöreskog & Sörbom, 1981, p. I.41). This index is easier to interpret because it typically ranges from zero to one, with one indicating perfect model fit. The normed fit index (NFI) has the advantage of being easily interpreted, and also has the disadvantage of sometimes underestimating goodness of fit in small samples. A variation on this measure is the non-normed fit index (NNFI), which has been shown to be a better measure of model fit for all sample sizes. The comparative fit index (CFI) is similar to the NNFI in that it provides an accurate assessment of fit regardless of sample size.

A final set of overall fit indexes involves residuals, or the difference between values in the implied and observed covariance matrices. The root mean square residual represents the average of the fitted residuals and may be used to compare models fitted to the same data. CALIS provides a point estimate of the root mean square error of approximation (RMSEA; Steiger, 1990), which Browne and Cudeck (1993) described as "a measure of the discrepancy per degree of freedom for the model" (p. 144). For these latter indexes, perfect model fit is indicated by the lower bound value of zero.

Beyond the overall fit indexes, model solutions should be evaluated according to criteria that are similar to those used in evaluating outcomes from other multivariate statistical procedures. For example, anomalies such as negative error variances, extremely large standard errors for parameter estimates, or correlations greater than one signal poor model fit or misspecification. Similarly, the internal structure of the model should be evaluated. For instance, individual item and composite reliabilities should be adequate.

Interpreting Coefficients/Direct and Indirect Effects

As stated earlier, the measurement model is essentially a confirmatory factor analysis. Thus, the resulting parameter coefficients are interpreted in the same way as regression or factor score coefficients. Hence, the coefficient represents how much a unit change in a particular latent variable affects the respective observed indicator.

While the same logic holds for the structural model, additional facets of SEM must be considered. Namely, the structural coefficients, beta (β_{ij}) and gamma (γ_{ij}), represent only the direct effects of endogenous and exogenous latent variables on a particular endogenous latent variable. Restricting consideration to direct effects only may be problematic for multiequation structural models. For this reason, structural effects are often spoken of in terms of direct, indirect, and total effects.

Figure G.1 can be used to define direct, indirect, and total effects. The direct effect of ξ_1 on η_1 is measured by the coefficient γ_{11}. It represents the direct effect of a one-unit change of ξ_1 on η_1. The indirect effect of ξ_1 on η_1 is the product $\gamma_{12}*\beta_{12}$. This is the mediated effect of ξ_1 on η_1 through η_2. Note that, depending on the signs of the structural coefficients, the indirect effect can be either positive or negative in value. The total effect of ξ_1 on η_1 is the sum of the direct (γ_{11}) and indirect ($\gamma_{12}*\beta_{12}$) effects. As part of its output, CALIS provides measures of direct, indirect, and total effects.

2000 MRS Analysis Strategy

Structural equation modeling ideally enforces a correspondence between theory and the empirical data being summarized. As indicated earlier, the model specification stage is usually guided by some theoretical considerations. Traditionally, structural equation modeling employs established scales with appropriate levels of reliability and validity for measuring specific latent variables. The shared variance among the set of items making up those scales is used to mathematically build latent variables. The latent variables, not the individual questions, are used to examine relationships. However, the design of the *2000 Military Recruiter Survey* did not include scales that were designed, a priori, to measure specific latent variables. Consequently, we used a post hoc procedure to develop the latent variables—questions were grouped together on the basis of (a) an initial examination of content and understanding of recruiting issues and (b) follow-up exploratory factor analytic work. Careful attention was given to both the concepts and the empirical indicators supplied by the *MRS* data. We then proceeded according to the following general strategy.

Specification of Initial Model

In Chapter 2 we describe the constructs (latent variables) and observed variables in detail and discuss the initial identification and specification of the constructs.

Estimation of the Measurement Model for Each Latent Variable

The properties of the latent variables were assessed prior to full-scale modeling efforts. This task basically involved preliminary analysis of distribution properties and measurement anomalies among various groups of variables. This phase provided an initial check on model viability. Following suggestions made by James, Mulaik, and Brett (1982) and Anderson and Gerbing (1988), we used a two-step modeling approach to examine the overall measurement and structural properties of the survey questions and the interrelationships among their corresponding latent variables. This approach emphasizes the analysis of two conceptually distinct latent variable models that, in combination, provide assessment of convergent, discriminant, and predictive validity. The first step, which involved testing the measurement model, was, in

essence, a confirmatory test of the work that was conducted in our initial exploratory factor analytic work. However, it would be meaningless to test the structural model without first establishing that the measurement model holds. If the chosen indicator variables from the questionnaire do not measure the specified latent variable, the specified theory must be modified before it can be tested. Therefore, we tested the measurement model before examining the structural relationships. During this first step, the covariance matrix of the latent variables was unconstrained, as recommended by Joreskog and Sorbom (1993), and maximum likelihood estimation was used. Support for the measurement model was found: $\chi^2(528, N = 3{,}640) = 3814.09$, $p < .0001$; GFI = .93; RMSEA = .044; and comparative fit index (CFI) = .92.

Estimation of the Structural Model

After testing the measurement model, we tested the structural model. In the structural model displayed in Figure 3.1, ovals represent latent variables (constructs) and rectangles represent measured variables. The absence of a line connecting variables implies no hypothesized direct effect. We used the maximum likelihood method to estimate the structural model. An independence model that tests the hypothesis that the variables are uncorrelated with one another was easily rejected, $\chi^2(630, N = 3{,}640) = 40854$, $p < .01$. Next, we tested the structural model. A chi-square difference test indicated a significant improvement in fit between the independence model and the structural model and provided strong support for the structural model in terms of GFI, CFI, and RMSEA: $\chi^2(543, N = 3{,}640) = 3933.54$, $p < .0001$; GFI = .93; RMSEA = .044; and CFI = .92.

In his review of the existing literature on structural equation modeling, Breckler (1990) observed several shortcomings—namely, that goodness of fit can be identical for a potentially large number of models and that sample size can have strong effects on results. Given these shortcomings, Breckler (1990) and others (Schumacker & Lomax, 1996) have emphasized the need for cross-validation procedures to ensure that parameter estimates obtained from a modeling effort are appropriate. The emphasis on cross-validation is particularly necessary in cases where post hoc modifications are made to the structural model, as was the case in our analysis of 2000 MRS data.

Cross-Validation

In traditional cross-validation procedures, estimates from one sample are obtained and then tested on a second sample to examine their stability. For example, a structural equation model is employed on the first sample, typically called the screening sample (Lord & Novick, 1968), and all estimates in the model are freely estimated. These estimates are then applied to a second sample, typically called the calibration sample (Lord & Novick, 1968). If, after constraining the estimates in the calibration sample to be equal to the estimates obtained from the screening sample, the overall reduction in fit is small, the obtained estimates may be applied in future predictions with greater confidence (Pedhazur, 1997).

Cross-validation, however, is a costly process. Moreover, long delays in assessing the findings may occur because of difficulties in obtaining a second sample. As an alternative, some researchers recommend splitting a large sample (typically defined as more than 500) into two

subsamples, with one subsample used as the screening sample and the other as the calibration sample (Green, 1978; Stevens, 1996). Mosier (1951) pointed out that if evidence is found for cross-validation, a regression equation based on the combined samples (the screening and calibration samples) is more stable because of the larger number of subjects on which it is based. Thus, if two samples are cross validated, researchers recommend re-combining the two samples and using the estimates from the combined sample in future predictions.

In the case of structural equation modeling, this process can be accomplished by using multisample (also referred to as multiple-group) analysis (Schumacker & Lomax, 1996). In the multisample approach, analysts use a series of tests to investigate the various segments of the overall structural and measurement model. In this process, cross-validation is accomplished through a seven-step procedure (these steps are detailed below). For the *2000 MRS* analysis, two data sets were created through a random 2/3 and 1/3 split of the original full dataset. The computations were completed by using estimates and fit indexes from these two datasets, which will be referred to as Set 2/3 and Set 1/3 for the rest of the discussion.

During each of the following steps, constraints were imposed on Set 1/3. The constraints varied depending on the invariance that was being tested in each of the seven steps. In each step, all elements that were being constrained to test invariance were fixed to corresponding estimates that were obtained when freely testing the model in Set 2/3.

Step 1. Before analysts begin to estimate invariance models, they need to establish that a model without any invariances is a reasonable model. In our analysis, we first tested the model on the full data set. We found acceptable fit for the model. Next, we tested the model on Set 2/3 and Set 1/3. Acceptable fit was found for both sets. Thus we were able to use this structural model as a baseline to test for invariance across samples.

Step 2. The first values to test for invariance are the factor loadings. If the factor loadings are not invariant, then it makes no sense to test the equality of the paths because the unit of measurement would differ across groups. To test for invariance, we obtained factor loading estimates from Set 2/3 and used them to constrain the factor loadings in Set 1/3. This resulted in acceptable fit for the constrained model, suggesting that the two models' factor loadings were invariant, $\chi^2(567, N = 1{,}557) = 1956.46$, $p < .0001$; GFI = .92; RMSEA = .042; and CFI = .92.

Step 3. The second set of invariances to test are the path coefficients in the structural model. This test is executed only if the loadings are invariant. This step also resulted in acceptable fit, suggesting that the paths did not vary for the two sample groups, $\chi^2(582, N = 1{,}557) = 1972.83$, $p < .0001$; GFI = .92; RMSEA = .041; and CFI = .92.

Step 4. Regardless of the results in Steps 2 and 3, it is meaningful to test whether the error variances are the same in both groups. If the paths vary or if both the loadings and the paths vary, such variation should be allowed at this step. In our case, however, neither was found to meaningfully vary, so they were allowed to remain fixed to estimates from Set 2/3. After constraining the error variances in Set 1/3 to equal those in Set 2/3, we found evidence indicating that the error variances did not significantly vary across the two samples, $\chi^2(618, N = 1{,}557) = 2019.54$, $p < .0001$; GFI = .91; RMSEA = .040; and CFI = .92.

Step 5. If the error variances are invariant, we can test whether the error covariances are equal. In essence, this tests the equality of the error correlations. We found evidence that the error variances were invariant, so it was appropriate to test the error correlations. In our model, all error correlations were set to zero. Therefore, all error covariances were already equal.

Step 6. The next step is to test whether the factor variances are equal. All prior parameter invariances are not necessary for examining this step; however, latent variable loadings must be invariant for this step to be meaningful. Because it is necessary to test factor variance equivalence with latent variable loadings, we tested Step 6 by fixing those parameters equal to Set 2/3 estimates. After constraining latent variable loadings and factor variances in Set 1/3 to be equal to those in Set 2/3, we found evidence indicating that the factor variances did not significantly vary across samples, $\chi^2(576, N = 1{,}557) = 1972.98$, $p < .0001$; GFI = .92; RMSEA = .042; and CFI = .92.

Step 7. The final step involves examining factor covariance equivalence. This test is meaningful only if the loadings and the factor variances are invariant. Given equality of the factor variances, this test evaluates the equality of the factor correlations. In Step 6 we found evidence for factor variance equality; therefore, it was meaningful to test this step. It is necessary to test factor covariance equivalence with latent variable loadings set equal to factor variance. After constraining factor loadings, factor variances, and factor covariances in Set 1/3 to be equal to those in Set 2/3, we found evidence indicating that the factor covariances did not significantly vary across samples, $\chi^2(612, N = 1{,}557) = 2034.85$, $p < .0001$; GFI = .92; RMSEA = .041; and CFI = .92.

All estimates were fully cross-validated with the multisample analysis.

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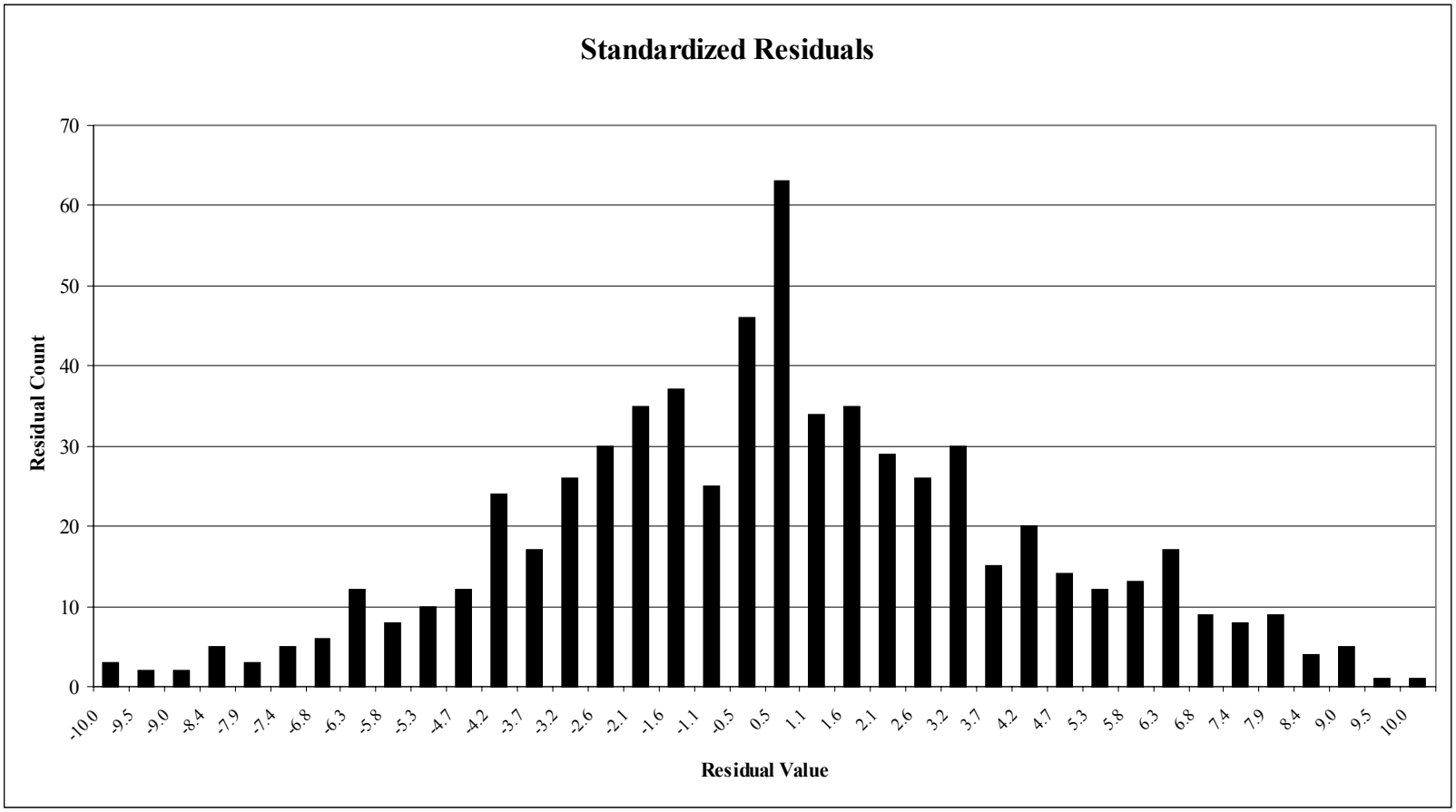
Appendix H

Standardized Model Residuals

Figure H.1.
Standardized Model Residuals



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