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Comprehensive Study of Nuclear First-Line Leader Effectiveness

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November 2011

Report Overview

- Describes the purpose of the study and the assessment tools used

- Summarizes findings from across all sites

- Provides actionable recommendations for improving supervisory effectiveness

- Includes Appendices with detailed findings

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Study Overview

- **Purpose**: Identify key characteristics differentiating effective and ineffective first-line supervisors (FLS) across the nuclear industry

- **Sample**: 281 FLS from 4 sites

- **Process**: Administered online questionnaires to FLS and their direct managers

  - FLS Leadership Inventory contained a broad spectrum of measures related to leadership including experience, personality, and work attitudes

  - Direct managers were asked to provide ratings of effectiveness and potential of the FLS

Description of Surveys

FLS Leadership Inventory

- Education
- Military Experience
- Industry & Leadership Experience
- Daily Time Allocation
- Motivation to Lead
- Leadership Self-Efficacy
- Person-Job Fit
- Role Ambiguity
- Organizational Alignment
- Job Satisfaction
- Organizational Commitment
- Transition to Management Team
- Personality Questionnaire

Manager Ratings

- Effectiveness Ratings on 19 Competencies considered important to the FLS role
- Effectiveness balancing administrative and in-field duties
- Overall Effectiveness
- Performance Relative to Others
- Transition to Management Team
- Long-Term Potential for Advancement
- Recognition as a High Potential by others
- Considered to be a Potential Successor

Demographics: Site & Department

Site	
Site A	81 (29%)
Site B	84 (30%)
Site C	62 (22%)
Site D	54 (19%)

Department	
Engineering	26 (9%)
Maintenance	81 (29%)
Operations	68 (24%)
Security	38 (14%)
RP/Chemistry	24 (9%)
Training	15 (5%)
PS&O	14 (5%)
Other	15 (5%)

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Demographics: Education

Highest Level of Education	
Some High School/Diploma/GED	14%
Some College/Technical School	30%
Technical or Associate's Degree	12%
Bachelor's Degree	26%
Graduate or Professional School/Degree	18%

- Overall, FLS education level was not related to manager ratings of FLS effectiveness or potential.

- However, higher manager ratings of FLS effectiveness were related to **higher class standing** in high school and **higher GPAs** in graduate school.

Demographics: Work Experience

	< 5 yrs	5 – 10	>10 yrs
Industry Overall	9%	10%	81%
Current Plant	21%	17%	62%
Supervisory	55%	20%	25%

- **Experience matters**. FLS with more supervisory experience were rated as:
    - More effective overall
    - Having made more progress transitioning to the management team

- FLS with more supervisory experience:
    - Perceived that the job is a **good fit** for their abilities
    - Were more **confident** in their leadership capability
    - Had a better understanding of the **requirements** of the role
    - Reported higher job **satisfaction**

- The **more outages** an FLS had worked in a supervisory capacity is related to making a **better transition to the management team.**

Demographics: Military Service

Military Service	
Served in the Military	42%
Served for 5 or more years	83%
Held a leadership position for 5 or more years	27%

- There were **no differences** in manager ratings of FLS effectiveness and potential for FLS with and without military experience.

- However, FLS with military experience are **less likely** to feel that they:
  - Are treated as a core member of the management team
  - Receive communications in a timely manner
  - Are told the reasons behind key decisions
  - Are involved in making organizational decisions

- FLS from the military also reported **lower commitment** to the organization.

How FLS Spend Their Day

Tasks	Percentage of Time Spent on Task
Scheduling and assigning work	22%
Managing emergent work and issues	20%
Direct report oversight	19%
Coaching and mentoring others	12%
Responsibilities related to the corrective action program	12%
Professional development and education	5%
Attending meetings not related to other areas above	10%

- Overall, 36% of FLS reported that they **effectively balance** in-field time with administrative duties. Similarly, 31% of managers rated FLS as very effective in this area.

- FLS who felt effective in this area were **more satisfied** with their jobs, **more committed** to the organization, and had a personality profile reflecting a stronger **need for social interaction.**

- FLS considered by their managers to be more effective at balancing in-field and administrative work were also considered more effective in the areas of:
    - **Workload Management** – able to multitask and manage his/her time
    - **Strategic Vision** – has a vision for excellence and sees the big picture
    - **Inspiration** – motivates and energizes people to contribute at a high level

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Training: Amount & Source

Number of days of managerial and/or leadership skills training

Pie chart:
- No Training: 7%
- 1 -10 days: 16%
- 11 - 20 days: 17%
- More than 20 days: 60%
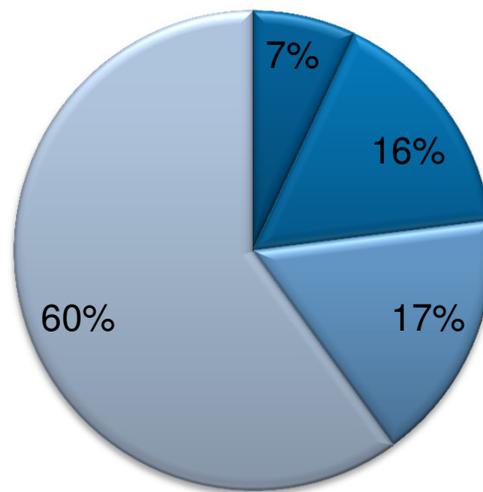
Sources of Training	
Current Organization	89%
Previous Organization	37%
INPO	31%
Other	24%

Training: Satisfaction

■ Percent Favorable

Given sufficient technical training to perform effectively.

Given sufficient managerial and/or leadership training to perform effectively.

Given sufficient coaching/training to help transition from individual contributor to the management team.

0%   20%   40%   60%   80%   100%
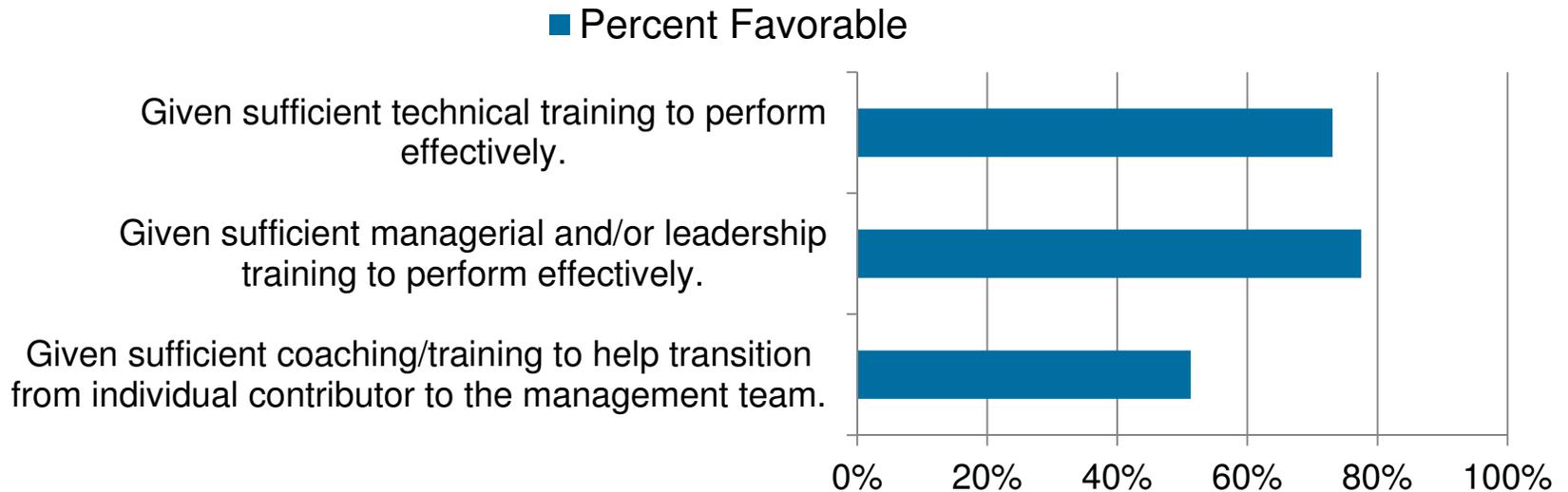
- FLS who were rated as **more effective** and having made **greater progress transitioning** to the management team:
  - Received more days of training
  - Were satisfied with the amount of managerial training
  - Were satisfied with the amount of coaching/training to transition to the management team

- FLS who attended INPO training:
  - Had made **greater progress transitioning** to the management team
  - Were **more satisfied** with the amount of training received

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Organizational Alignment

■ Percent Favorable

I have sufficient communication and personal contact time with my manager.

I am treated as a core member of the management team.

I receive important information from management before it is communicated to the broader organization.

I am told the reasons behind key decisions.

This organization rewards and reinforces my efforts to coach and develop my direct reports.

I am involved in determining changes and in developing change management plans for the organization.

0%   20%   40%   60%   80%   100%

- FLS who viewed themselves as having made greater progress transitioning to the management team reported:

  - Having **sufficient time** with their manager

  - **Being told the reasons** behind major decisions

  - Being **treated as a core member** of the management team

Job Satisfaction, Commitment, & Role Ambiguity Description

Job Satisfaction

- The level of enjoyment an individual gets from their experiences on the job.
- Example: All in all I am satisfied with my job as a supervisor.

Organizational Commitment

- An individual's identification with and attachment to an organization.
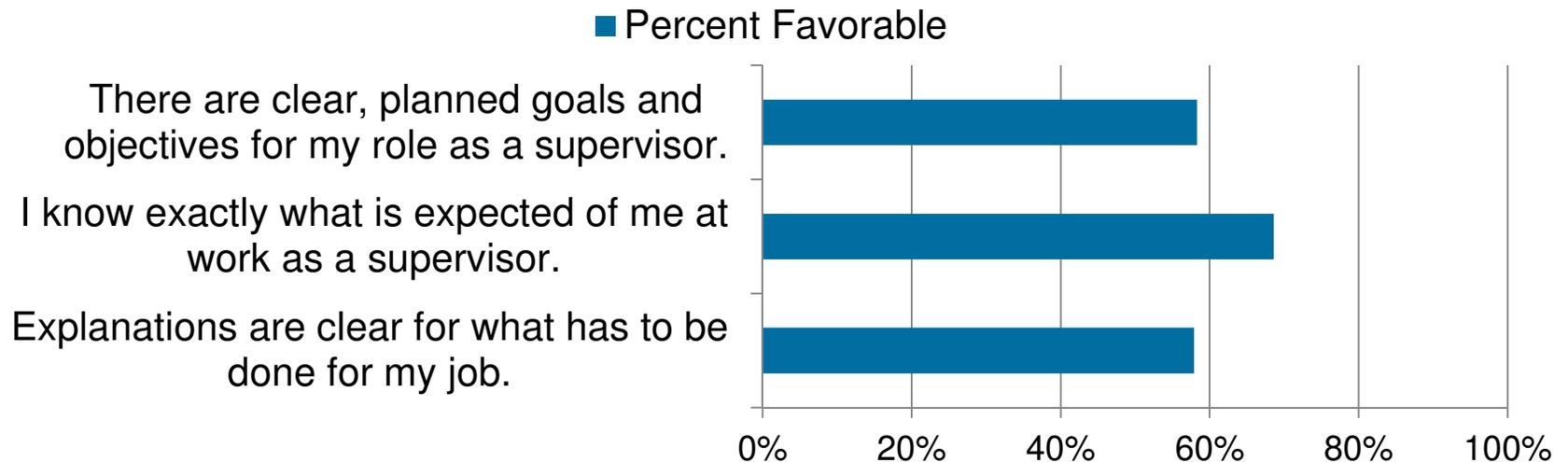- Example: I feel a strong sense of "belonging" to my organization.

Role Ambiguity

- The perceived lack of clarity regarding the objectives and expectations for a role.
- Example: I know exactly what is expected of me at work as a supervisor.

Job Satisfaction & Commitment Results

- Emotional attachment to the organization is the strongest aspect of organizational commitment for FLS rather than obligation or concern about the cost of leaving.

- FLS with greater organizational commitment were:
  - **More satisfied** with their job
  - Rated as **more effective** by their manager

- Research has consistently shown that higher levels of organizational commitment is related to **less turnover and absenteeism**.

- Our research shows that the key ways to improve both FLS job satisfaction and organizational commitment are to:
  - Treat supervisors as **core members** of the management team
  - **Reward and reinforce** supervisor's efforts to coach and develop their team
  - Provide sufficient managerial **training**

Role Ambiguity Results

■ Percent Favorable

There are clear, planned goals and objectives for my role as a supervisor.

I know exactly what is expected of me at work as a supervisor.

Explanations are clear for what has to be done for my job.

| | 0% | 20% | 40% | 60% | 80% | 100% |

- FLS who were more satisfied with the amount of training they received (managerial and technical) had **a better understanding of the expectations** of their role.

- FLS who had a better understanding of their role expectations had greater:
  - **Motivation** to take on leadership roles
  - Perception that their capabilities and needs **match the role** of a FLS
  - **Confidence** in their leadership ability
  - Job satisfaction
  - **Commitment** to the organization
  - Sense of feeling **aligned with the organization**

Person-Job Fit, Leadership Efficacy, & Motivation to Lead Description

Person-Job Fit

- An individual's perception of the match between the abilities of a person and the demands of the job and/or the desires of a person and the attributes of a job.
- Example: I am well suited for the role of a supervisor.

Leadership Efficacy

- The level of confidence in the knowledge, skills, and abilities associated with leading others.
- Example: I am confident in my ability to influence a group I lead.
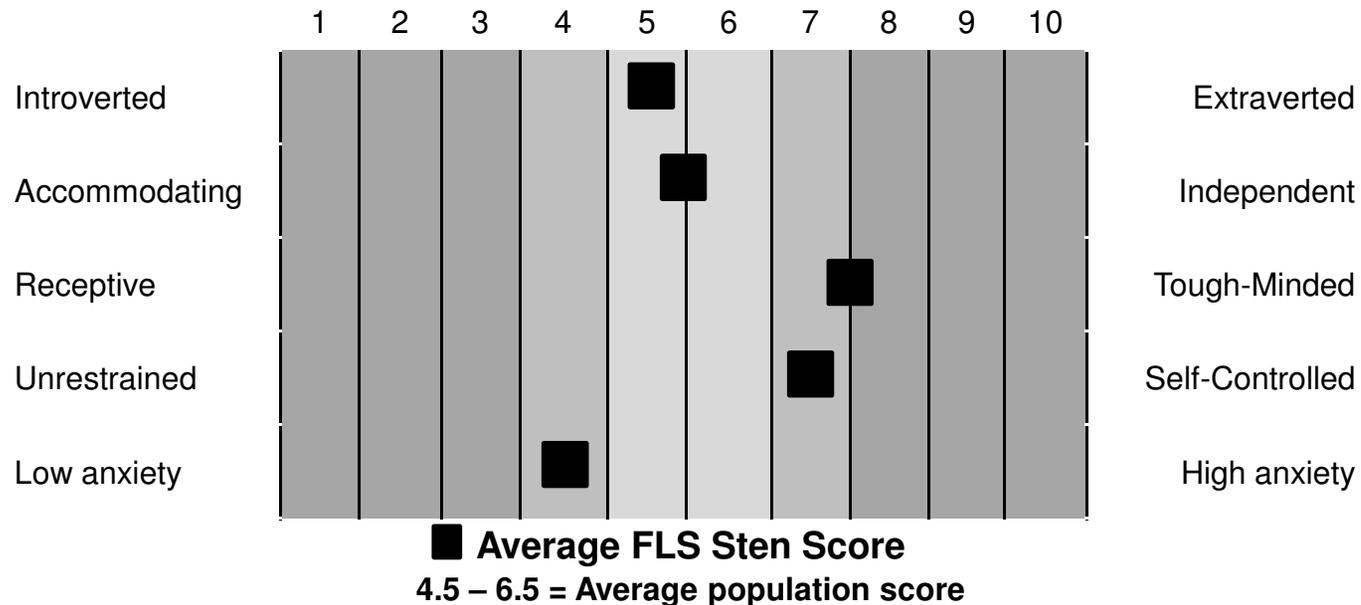
Motivation to Lead

- Motivational force influencing an individual's decisions to assume leadership roles that affects his or her intensity of effort and persistence as a leader.
- Example: I usually want to be the leader in groups that I work in.

Person-Job Fit, Leadership Efficacy, & Motivation to Lead Results

- Overall, the most effective FLS:

  - Are confident in their ability to lead others (Leadership Efficacy)

  - Feel the role of a supervisor **fits well** with their capabilities (Person-Job Fit)

  - Are highly motivated to assume leadership roles because they **like to lead** and feel a **social obligation** to lead (Motivation to Lead)

- Again, FLS with more experience had stronger perceptions of fit with the supervisory role and greater confidence in their ability to lead.

- FLS who perceived that they received **adequate training** had stronger perceptions of fit with the role and greater confidence in their leadership abilities.

  - This was true regardless of the amount of experience or the number of days of training the FLS received.

Personality Factors

	1	2	3	4	5	6	7	8	9	10	
Introverted					■						Extraverted
Accommodating						■					Independent
Receptive								■			Tough-Minded
Unrestrained							■				Self-Controlled
Low anxiety				■							High anxiety

■ **Average FLS Sten Score**

4.5 – 6.5 = Average population score

16PF Global Factors

Extraversion	Social orientation; the desire to be around others and be noticed by them; the energy invested in initiating and maintaining social relationships
Independence	The role a person assumes when interacting with others; the extent to which they are likely to influence or be influenced by the views of others
Tough-Mindedness	The way a person processes information; the extent to which they will solve problems at an objective, cognitive level or by using subjective or personal considerations
Self-Control	Response to environmental controls on behavior; internal self-discipline
Anxiety	Emotional adjustment; the types of emotions experienced and the intensity of these

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Personality Factors

- More effective FLS were characterized by **lower levels of anxiety**.

- Individuals with low levels of anxiety are characterized as:
    - Emotionally stable, adaptive, and mature
    - Trusting and accepting of others
    - Self-assured and unworried
    - Relaxed and patient

- The FLS rated as more effective had the following personality characteristics:
    - Forthright and transparent
    - Open-to change and seeking ways to improve the status quo
    - Group-oriented and affiliative
    - Easy-going and developing trusting relationships with others

Manager Ratings: FLS Effectiveness

- Managers rated their FLS's effectiveness on 19 competencies as well as their effectiveness overall.

- The average manager rating on each competency was effective or above—demonstrating that most FLS are at least effective in the core performance dimensions for the role.

- The competencies with the highest average effectiveness ratings were **safety** and **integrity**. Our research has shown that managers view these areas as the most important competencies related to supervisory effectiveness.

- The lowest effectiveness ratings for all FLS were in the areas of **inspiration**, **strategic vision**, **innovation**, and **developing others**.

Manager Ratings: FLS Effectiveness

- Of the 19 competencies, the competencies that best identify the most effective FLS were:

Inspiration	Motivates and energizes others to contribute at a high level
Drive for Results	Shows bias towards action and follow through on commitments
Problem Solving & Judgment	Identifies relevant information; makes timely and accurate decisions
Innovation	Challenges the status quo; looking to drive continuous improvement
Workload Management	Able to multitask; manages time effectively
Expertise	Demonstrates detailed knowledge and skill; keeps abreast of industry performance
Cultivating Relationships	Builds and maintains effective relationships
Strategic Vision	Has a vision for excellence; sees the big picture

Manager Ratings: Potential

Long Term Potential for Advancement	
Needs Improvement (not keeping pace)	3%
Low (good fit for current role)	41%
Moderate (likely to advance 1 level)	39%
High (likely to advance 2 or more levels)	18%

- Overall, Managers reported that 40% of FLS have been identified by the organization as high potentials.

- Managers also reported that they consider 50% of FLS to be potential successors to their role.

- If accurate, the high numbers of FLS recognized as high potentials and potential successors highlights a strong talent base for future leadership roles.

- Given our experience in the industry, however, these percentages seem unrealistic and may reflect an opportunity to educate mid-level leaders and refine the talent management process, particularly at the FLS level.

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Summary

- It can take years of experience for a FLS to acquire the leadership skills necessary to be effective in their role.

- The critical issue of **experience driving effectiveness** is highlighted as the nuclear industry prepares for more tenured FLS to retire in large numbers.

- The primary goal for the industry is to **accelerate the development** of less tenured FLS in key leadership characteristics and competencies related to effectiveness.

- The secondary goal is to promote job satisfaction, organizational commitment, and alignment

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Recommendations

Refine processes for recruiting and selecting the best FLS.

- Make the FLS position more desirable.
  - Address concerns that deter your high potentials from pursuing an FLS role.
  - Communicate a positive message about the FLS role and the opportunity to have a real impact on the station's culture and performance.

- Recruit potential FLS that have historically gravitated toward leadership positions—more effective leaders "like to lead."

- Assess for specific personality characteristics related to effectiveness (e.g., able to manage emotions/anxiety well, are sociable, transparent, open to change, innovative, etc.).

- Assess for specific competencies that best distinguish between more and less effective FLS (e.g., drive for results, problem solving, workload management, etc.).

- Provide targeted, developmental feedback to potential FLS that helps them understand how their capabilities align with the FLS role and what they can do to close key gaps.

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Recommendations

Develop programs for the FLS that promote understanding of their role and confidence in their leadership ability.

- **Start early** with programs and activities that ensure rapid development and stronger alignment of the FLS once in the role.

- Focus programs for the FLS on **practicing skills** for delegating, holding others accountable, motivating others, and developing teams.

- Use **experiential** or **on-the-job learning** as a critical tool for developing the FLS.

  - Enhance the IDP process by focusing on on-the-job learning opportunities.

  - Take advantage of the outage as a development opportunity.

  - Superintendents must support and coach the FLS when assigned stretch roles.

- Include and engage high potential FLS in higher level meetings to **enhance strategic leadership skills.**

- Take full advantage of **INPO training** as an impactful development tool for FLS.

Recommendations

Accelerate the transition of FLS to the management team.

- Leadership alignment meetings are not enough. Even more tenured FLS are not fully a part of the management team despite these opportunities.

- Superintendents must give the right kind and amount of **focused attention** to FLS and establish a **strong team mindset**. They play a critical role in assisting FLS in making this transition.

- Provide regular opportunities for FLS to collaborate and network with all levels of the leadership team, including their peers. Focus on informal settings and formal **peer groups** and **mentoring relationships**.

- Expect and reinforce **greater involvement** of FLS in key departmental decisions—this develops FLS skills and creates alignment.

- Find new ways to **explain the rationale** behind management decisions and provide sufficient opportunity for Q&A.

- Measure success by the level of understanding and alignment seen in the leadership team and not just by efforts to get out the message.
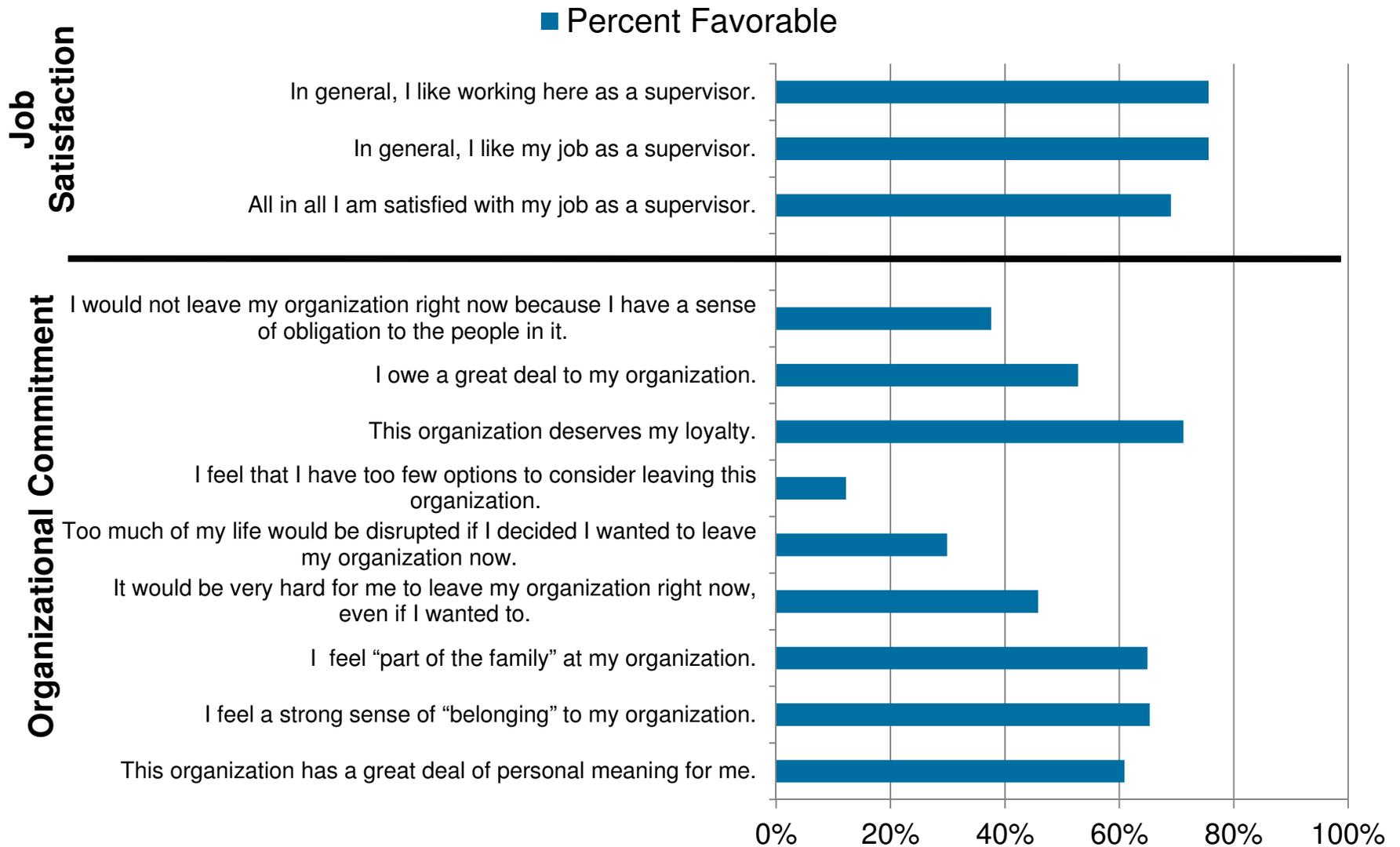
Recommendations

Provide extra support for FLS transitioning from the military to a corporate culture.

- Facilitate group discussions that teach new FLS the traits and behaviors needed to be an effective leader in a corporate culture.

  - Identify and explain the key differences between the military and corporate sector leadership cultures.

  - Explain the value of modifying leadership behaviors to fit with a corporate culture and the the pitfalls of sticking with a military model.

- Highlight frequent transition pain points such as communications, alignment, and teaming.

- Identify training opportunities that can facilitate skill development and a successful cultural transition.

- Implement a formal mentoring system by pairing new hires with FLS who have successfully made the cultural transition.

# Appendices

Job Satisfaction & Org Commitment

■ Percent Favorable

Job Satisfaction

- In general, I like working here as a supervisor.
- In general, I like my job as a supervisor.
- All in all I am satisfied with my job as a supervisor.

Organizational Commitment

- I would not leave my organization right now because I have a sense of obligation to the people in it.
- I owe a great deal to my organization.
- This organization deserves my loyalty.
- I feel that I have too few options to consider leaving this organization.
- Too much of my life would be disrupted if I decided I wanted to leave my organization now.
- It would be very hard for me to leave my organization right now, even if I wanted to.
- I feel "part of the family" at my organization.
- I feel a strong sense of "belonging" to my organization.
- This organization has a great deal of personal meaning for me.

0%   20%   40%   60%   80%   100%

Person-Job Fit & Leadership Efficacy

■ Percent Favorable

Person-Job Fit

- I value the rewards and benefits that the supervisor position provides.
- The role of a supervisor allows me to do the kind of work that I want to do.
- The personal rewards that I receive from being a supervisor are less than what I expected to receive.
- I am well suited for the role of a supervisor.
- I have no trouble meeting the performance standards of my job.
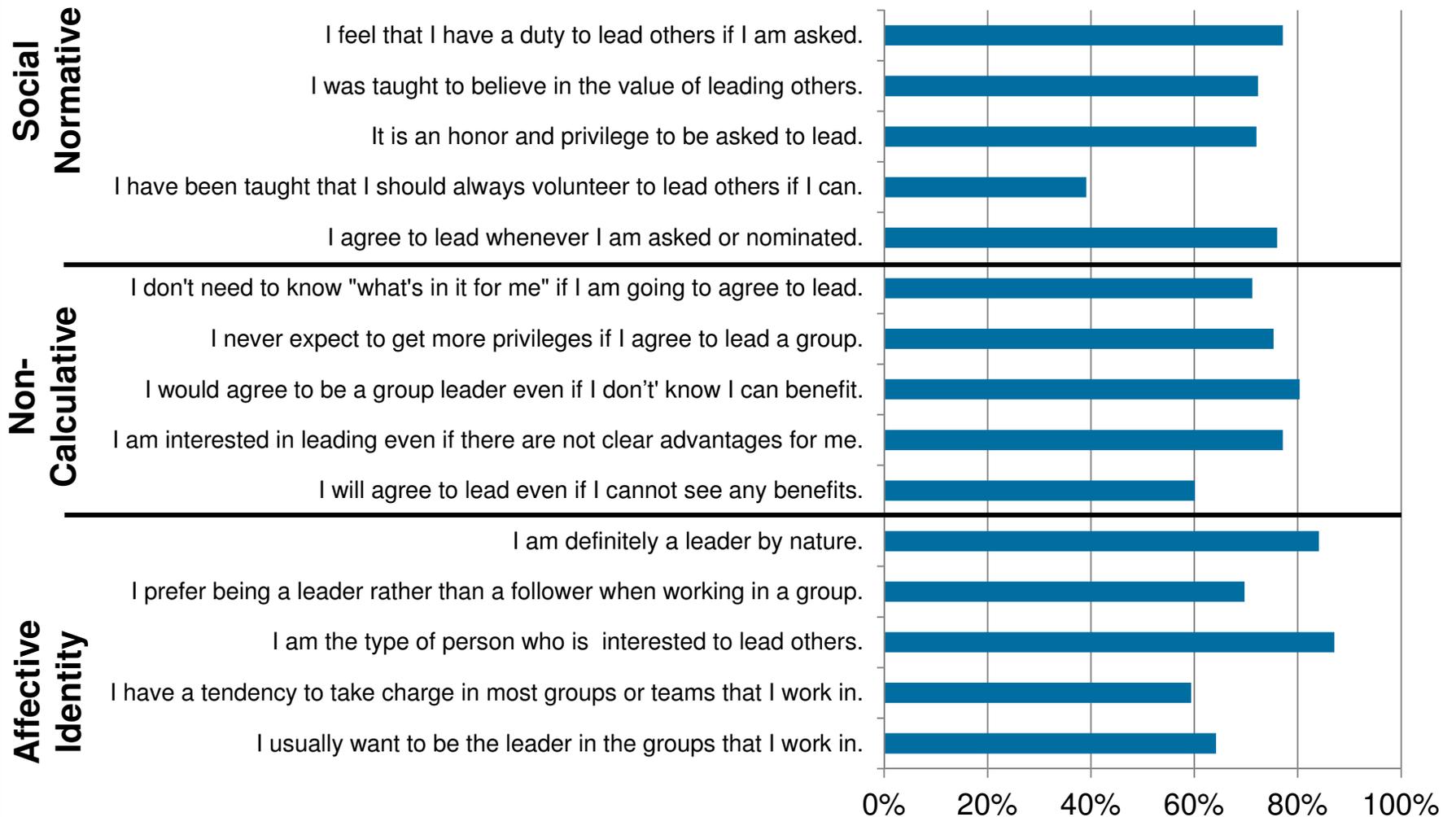- I have the skills and abilities to successfully perform the tasks required for a supervisor.
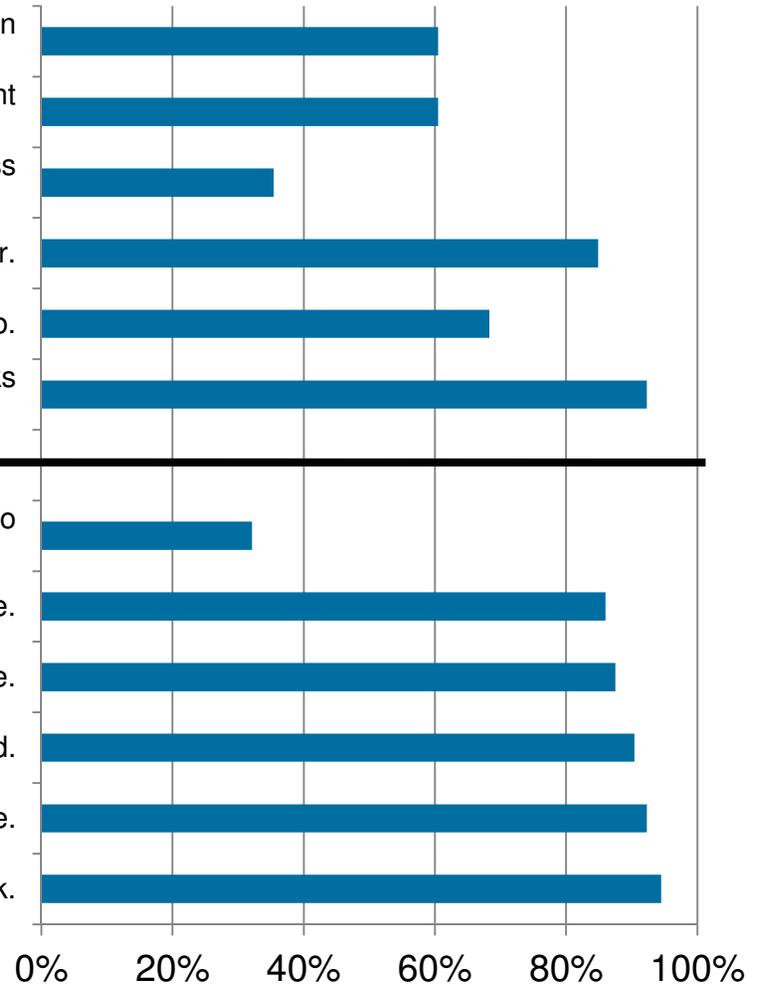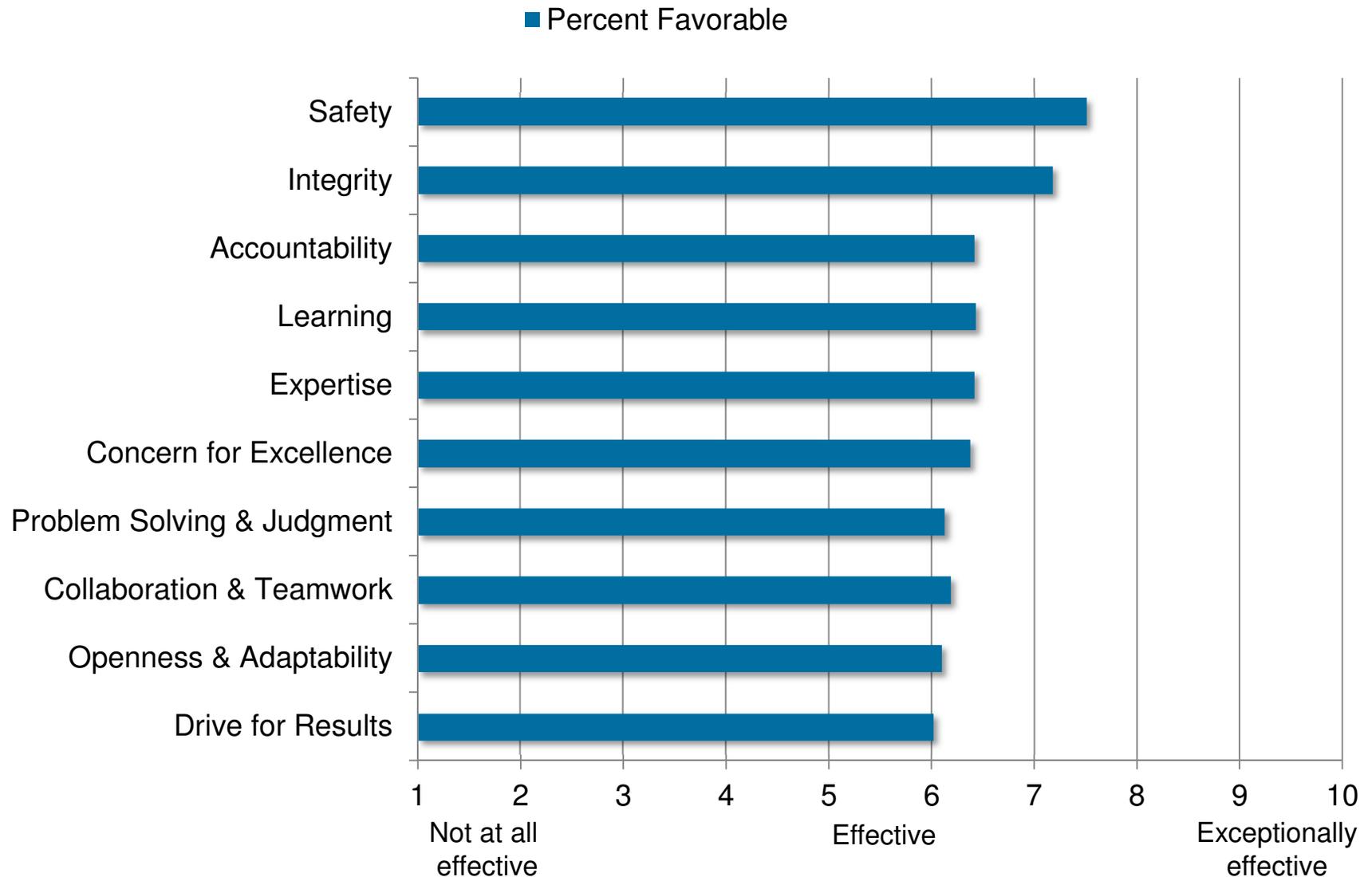
Leadership Efficacy

- Compared to most of my peers, I know more about what it takes to be a good leader.
- I am confident in my ability to hold my peers accountable.
- I am confident in my ability to hold my subordinates accountable.
- I am confident in my ability to influence a group I lead.
- I know how to encourage good group performance.
- I know what it takes to make a group accomplish a task.

0%   20%   40%   60%   80%   100%

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Motivation To Lead

Manager Ratings - Competencies

■ Percent Favorable

Competency	Scale
Communication	
Cultivating Relationships	
Workload Management	
Planning	
Influence	
Develops Others	
Innovation	
Strategic Vision	
Inspiration	

Scale: 1 2 3 4 5 6 7 8 9 10

Not at all effective — Effective — Exceptionally effective

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Manager Ratings: Transition to Mgmt

Horizontal bar chart — "Percent Favorable":
- Made limited progress: ~3%
- Made some progress: ~21%
- Made good progress: ~42%
- Completed transition: ~34%

(X-axis: 0%, 20%, 40%, 60%, 80%, 100%)
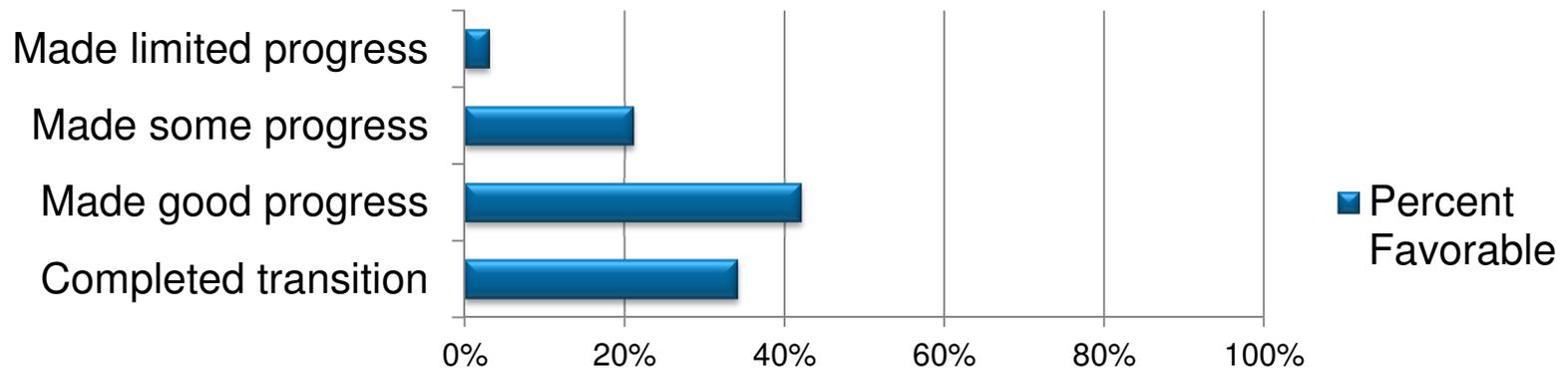
- **Made limited progress**: Does not see self as part of management team; has not stepped back from technical work; has not accepted administrative and supervisory responsibilities and requires prompting in these areas

- **Made some progress**: Starting to see self as part of management team but is much more closely aligned with direct reports; has accepted all responsibilities of the role but remains too involved in technical work and is struggling to balance administrative tasks and supervision of people

- **Made good progress**: Sees self as part of management team and is aligned with this group on many issues; generally balances administrative tasks, supervision of people, and involvement in technical work but there is still room for improvement

- **Completed transition**: Sees self as part of management team and is fully aligned with this group on all issues; effectively balances administrative tasks, supervision of people, and involvement in technical work; could mentor new supervisors

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