Learning Orientation, Working Smart, and Effective Selling

Learning and performance goal orientations, two motivational orientations that guide salespeople's behavior, are related to working smart and hard. Working smart is defined as "the engagement in activities that serve to develop knowledge of sales situations and utilize this knowledge in selling behavior. It is found that a learning goal orientation motivates working both smart and hard, whereas a performance goal orientation motivates only working hard. The goal orientations also are found to be alterable through supervisory feedback. Furthermore, self-efficacy, salespeople's confidence in their overall selling abilities, is found to moderate some of the relationships with the goal orientations.

Management consultants and theorists emphasize the need for firms to alter their traditional approaches; experiment with new organizational structures, production processes, and marketing programs; and learn from the successes and failures they encounter when implementing new and different approaches (e.g., Business Week 1992a; Fiol and Lyles 1985). Peter Senge, the director of MIT's Systems Thinking and Organizational Learning Program, advocates the development of "learning organizations." Drawing from research in education, psychology, history, and philosophy, he prescribes ways for encouraging organizational experimentation, adaptation, learning, and knowledge development (Business Week 1992b). Our research focuses on prescriptions for learning within the personal selling domain.

Because learning is seen as an investment with long-term rather than short-term payoffs, organizations rarely practice this developmental perspective (Garvin 1993). Sales managers typically concentrate on short-term performance goals and encouraging their salespeople to work hard; very seldom do they attempt to motivate or teach their salespeople skills that benefit long-term performance. We question the wisdom of de-emphasizing learning, even from a short-term performance perspective, by (1) identifying that learning and performance goals are two motivational orientations of salespeople, (2) specifying and testing how these goal orientations influence working smart and hard, and (3) specifying and testing how these goal orientations are influenced by supervisory feedback.

Psychologists have identified two different underlying goals of people in achievement situations. A learning goal orients people to improve their abilities and master the tasks they perform. A performance goal orients them to achieve a positive evaluation of their current abilities and performance from important others (Ames and Archer 1988; Dweck and Leggett 1988; Elliott and Dweck 1988; Nicholls and Dweck 1979). A learning goal orientation stems from an intrinsic interest in one's work—a preference for challenging work, a view of oneself as being curious, and a search for opportunities that permit independent attempts to master material. A performance goal orientation stems from an extrinsic interest in one's work—the desire to use one's work to achieve valued external ends (Meece, Blumenfeld, and Hoyle 1988).

Under a learning orientation, also referred to as a mastery orientation (Ames and Archer 1988), salespeople enjoy the process of discovering how to sell effectively. They are attracted by challenging sales situations and not unduly bothered by mistakes. They value the feelings of personal growth and mastery they derive from their job.

Under a performance orientation, also referred to as an ego orientation (Meece, Blumenfeld, and Hoyle 1988), salespeople seek favorable evaluations of their skills from their managers and colleagues. They are reluctant to experiment with new approaches, fearing these behaviors will result in poor outcomes and consequently negative evaluations of their abilities and performance. They avoid challenging sales situations.

Although there is considerable stability in individuals' learning and performance goals, environmental conditions can make a learning or performance goal more salient. Thus, these motivational orientations are considered to be both traits and states (Amabile 1983; Ames and Archer 1988; Brodging 1977).
Although laboratory studies have manipulated learning and performance orientations as opposites, they emerge as two distinct dimensions when independently measured: Ames and Archer (1988) find a correlation of -.03 and Meece, Blumenfeld, and Hoyle (1988) find a correlation of .13. Salespeople can pursue the goals of learning how to do their job better and demonstrating their ability to others at the same time. Alternatively, they may be focused at times on one or the other goal.

Working Smart and Working Hard

Working Smart

In the trade press, working smart is used inconsistently, whereas in the academic press, it is conceptualized principally as adaptive behavior (Spiro and Weitz 1990; Weitz 1978; Weitz, Sujaan, and Sujaan 1986). It has been suggested that behavior relating to knowledge development also should be considered an aspect of working smart (Sujaan 1986). Following this, we define working smart as behaviors directed toward developing knowledge about sales situations and utilizing this knowledge in sales situations. This definition draws on recent research on intelligence, in which it is argued that traditional views of intelligence, in terms of the ability to undertake analytical thinking that can be assessed through IQ tests, are too narrow. One of the alternatives proposed is to view intelligence contextually, how one’s behavior shapes and is shaped by one’s environment (Sternberg 1985). Contextual intelligence requires planning or mentally preparing, being confident in one’s ability to alter behavior, and making situationally appropriate adjustments in behavior. Therefore, we consider engaging in behavior to determine the suitability of sales behaviors and activities that will be undertaken, capacity to engage in a wide range of selling behaviors and activities, and altering of sales behaviors and activities in keeping with situational considerations to be key manifestations of developing and utilizing sales knowledge.

Working Hard

Whereas working smart is the direction chosen to channel effort, working hard is the overall amount of effort salespeople devote to their work (Sujaan 1986; Weiner 1980). We consider the key manifestation of salespeople’s overall level of effort to be their persistence—in terms of the length of time devoted to work and continuing to try in the face of failure (see also Steers and Porter 1991).

Influence of the Goal Orientations on Work Behavior

Research suggests that a learning orientation, because of the motivation to improve skills, causes salespeople to seek relatively challenging situations in the belief that this helps them develop their understanding of sales environments and improve their knowledge of appropriate sales strategies. Also, a learning orientation increases salespeople’s willingness to change their sales (social interaction) strategies (Ames and Archer 1988; Dweck and Leggett 1988).

On the basis of this research, we propose that a learning orientation motivates salespeople to engage in planning, develop the knowledge and skill bases needed to improve their capabilities, and experiment with new sales approaches.

H1a: A learning orientation motivates salespeople to work smart.

Research also suggests that a learning orientation motivates salespeople to work long hours because they enjoy the process of selling and continue striving in the face of failure because they do not feel overwhelmed by difficulties (Ames and Archer 1988; Dweck and Leggett 1988).

H1b: A learning orientation motivates salespeople to work hard.

Salespeople with a performance orientation, because they believe their skills and abilities are fixed, tend to rely on increasing overall effort to gain better outcomes and, by this, better evaluations of their ability. They are disinclined to experiment with “untried and untested” sales methods that could jeopardize successful outcomes and favorable evaluation of their ability (Dweck and Bempechat 1983; Dweck and Leggett 1988).

H2: A performance orientation motivates salespeople to work hard.

The Influence of Supervisory Feedback on the Goal Orientations

Although relatively stable, an individual salesperson’s learning and performance orientations can be influenced by conditions in the work environment (Amabile 1983; Ames and Archer 1988; Brodchil 1977). An aspect of the work environment that is likely to affect salespeople’s learning and performance orientations is supervisory feedback (Boggiano and Barrett 1985; Carver and Scheier 1981).

We examine evaluation feedback (Ilgen, Fisher, and Taylor 1979), that is, supervisors’ positive and negative evaluation of their salespeople’s outcomes and behaviors. Because a learning orientation motivates behaviors designed to improve skills, we expect that feedback will have a greater effect on this goal orientation of salespeople. Positive feedback should enhance salespeople’s learning orientation by signaling approval for the successful development of selling skills (Parsons, Herold, and Leatherwood 1985; Taylor, Fisher, and Ilgen 1984). Negative feedback also should increase salespeople’s learning orientation by signaling the need for improvement.

H3: Positive (a) and negative (b) feedback raises salespeople’s learning orientation.

Positive feedback indicates that ability has been demonstrated successfully. As a result of satiating the need to demonstrate ability, it could decrease the performance orientation of salespeople. But satiation would occur only in domains in which a single demonstration has long-lasting effects—for example, in certain types of artistic endeavors (Janz 1982). In sales, in which there is a continual need to
achieve to be considered able, positive feedback is not likely to reduce the need to demonstrate ability in the future. Moreover, because externally oriented needs such as a performance orientation tend to be sought after less the more they are satisfied (e.g., Walker, Churchill, and Ford 1977), positive feedback is unlikely to increase salespeople’s performance orientation. Thus, we expect positive feedback not to influence the performance orientation of salespeople. On the other hand, negative feedback should heighten salespeople’s performance orientation, because it indicates to them that they have failed to demonstrate ability (Podsakoff and Jang-Lih Farh 1989; Wofford and Goodwin 1990).

H₄: Negative feedback raises salespeople’s performance orientation.

The Moderating Effect of Self-Efficacy

Self-efficacious salespeople judge themselves to be capable of organizing and executing courses of action required to perform successfully at their jobs (Bandura 1986, p. 391). Self-efficacy is a broader construct than expectancy, which involves success at specific sales tasks. It is a narrower construct than self-esteem, which involves success in all areas of the salesperson’s life: work, family, and social activities.

Moderating Effects on Feedback Influence

H₃₄ proposes that positive feedback enhances salespeople’s learning orientation by encouraging skill improvement. Low self-efficacious salespeople are likely to need more encouragement. High self-efficacious salespeople have greater confidence and can motivate themselves to learn how to do their job better without positive feedback.

H₅: Positive feedback raises the learning orientation of low self-efficacious salespeople more than that of high self-efficacious salespeople.

H₆ suggests that negative feedback increases the performance orientation of salespeople because it makes them more aware of their failure to demonstrate ability. The greater confidence of high self-efficacious salespeople should cause them to increase their performance orientation more: Low self-efficacious salespeople’s lack of confidence may cause them to become discouraged by negative feedback and reduce their drive to obtain favorable evaluations of their ability.

H₆: Negative feedback raises the performance orientation of high self-efficacious salespeople more than that of low self-efficacious salespeople.

Moderating Effects on Performance Orientation Influence

With respect to H₅, salespeople with a performance orientation work hard to achieve successful outcomes and thus demonstrate their ability. The lack of confidence of low self-efficacious salespeople is likely to cause them to question their ability to effect successful outcomes through hard work.


The Effect of Working Smart and Hard on Sales Performance

In our framework, we suggest that working both smart and hard improves salespeople’s performance. One facet of working smart, the practice of adaptive selling, has a demonstrated relationship with sales performance (Spiro and Weitz 1990). Additional evidence suggests that flexibility and attention to the selection of appropriate sales strategies differentiates high- and low-performance salespeople (DeMarco and Maginn 1982; Goleman 1981).

H₈: Working smart increases salespeople’s performance.

Theories of job performance and empirical research regarding salesperson effort (Churchill et al. 1985) suggest the following:

H₉: Working hard increases salespeople’s performance.

Method

Sample

Eight firms from industries as diverse as health care and broadcasting participated in exchange of a customized report summarizing the results. The questionnaires were distributed by sales managers to their salespeople. A cover letter told the participants that the study was being conducted to develop a better understanding of salespeople’s attitudes and behaviors. This letter instructed the salesperson participants to return the questionnaire directly to the researchers, using an attached prepaid envelope. It also assured them that individual responses would not be divulged and only aggregated data would be reported. Of the 217 questionnaires distributed, 190, or 87.5%, were returned. The respondents were predominantly male (78%). On average, they were 35 years of age, had 9 years’ sales experience, and made 3.5 calls per day.

Measures

Appendix A contains the items used and a correlation matrix of the constructs.

Working smart. We defined working smart as a manifestation of (1) engaging in planning to determine the suitability of sales behaviors and activities, (2) possessing the confidence and capacity to engage in a wide range of selling behaviors and activities, and (3) altering sales behaviors and activities on the basis of situational considerations.

Engagement in planning was measured using an expanded version of the scale developed by Earley, Wojnarowski, and Prest (1987). Twelve items assess the importance given by the salesperson to planning, energy devoted to planning, and extent to which the salesperson develops plans. Confidence and capability to engage in a wide range of sales behaviors and activities was assessed using a modified version of the Battery of Interpersonal Capabilities In-
ventory developed by Paulhus and Martin (1987) to measure functional flexibility. Functional flexibility is defined as a person's perceived capacity to engage in a range of behaviors that might be required in different interpersonal situations. It has been shown to correlate with different measures of self-monitoring, peer rating of interpersonal flexibility, and psychological adjustment to life (Paulhus and Martin 1988). Our respondents were presented with 16 capabilities (e.g., "warm," "aloof") and asked to respond to the statement, "When the sales situation seems to need it, how easy is it for you to be ...." Responses were made using a 7-point scale anchored by "not easy for me" and "very easy for me." The original inventory was modified by changing 4 of the 16 capabilities to more common selling capabilities—"gregarious" to "outgoing," "lazy" to "laid-back," "arrogant" to "aggressive," and "quarrelsome" to "demanding." Salespeople's responses to the 16 capabilities were summed to form a measure of functional flexibility in sales. Because this is a checklist-type formative index, it is not appropriate to calculate reliability (Bollen and Lennox 1991). Finally, altering sales behaviors was measured using the adaptive selling scale developed by Spiro and Weitz (1990).

Working hard. Working hard was measured using three items assessing the salesperson's persistence in job-related activities plus a report of how many hours a week on average the salesperson worked. Salespeople reported working 53 hours, a little less than the 60-hour week reported in Marketing News (1988).

Goal orientation. Salespeople's motivational orientation to improve ability and skills was measured with a 9-item scale based on Ames and Archer's (1988) measures. Salespeople's motivational orientation to demonstrate ability and skills was measured with a 6-item scale also based on Ames and Archer's (1988) measures.

Positive and negative feedback. Feedback was measured using Jaworski and Kohli's (1991) scales, eight items each for positive and negative feedback. Jaworski and Kohli attempted to divide positive and negative feedback further into evaluations of output and behavior. Unfortunately, empirically they were not able to discriminate between output feedback, evaluations of the salesperson's accomplishments such as sales generated or sales to quota, and behavioral feedback, evaluations of the behaviors used by the salesperson to achieve outputs. We also explored this distinction and found no discrimination between behavior and output evaluations for either positive or negative feedback.

Self-efficacy. Self-efficacy as a salesperson was measured by modifying Chowdhury's (1993) measure of self-efficacy in negotiations.¹

Performance. To measure performance, we asked salespeople to evaluate themselves, relative to other salespeople working for their company, on achieving quantity and quality sales objectives. Seven items, five taken from Behrman and Perreault (1982), were used; we added the items on identifying attractive prospects and assisting the sales supervisor to meet his or her goals.

Little consensus exists in the salesperson literature on whether job performance should be measured through subjective evaluations by supervisors, customers, coworkers, or salespeople themselves, objective data-based measures, or a combination (Churchill et al. 1985). In the literature on performance appraisal of employees, it is believed a choice can be made on the basis of the aspect of performance in which the researcher is most interested (Landy and Farr 1980). Arguments have been made for the appropriateness of self-evaluations in assessing the performance of boundary-spanning employees such as salespeople (Behrman and Perreault 1982; Harris and Schaubroek 1988).

Measure Validation

The measures used for each of the constructs were evaluated using confirmatory factor analysis. The measures demonstrated acceptable levels of unidimensionality, reliability, and convergent and discriminant validity. (Details of the validation procedures are in Appendix B, "Measurement Model.")

Results

We tested our hypotheses using a structural equation methodology. The technical aspects of our estimation procedure and detailed statistical results are in Appendix B.

Main Effects

A structural equation model of the main effects in Figure 1 was tested, and all the main effect hypotheses (H₁ₐ–H₄) were supported. We then tested to see if the nonhypothesized paths between adjacent constructs were significant when added to this model. Neither the paths from positive feedback to performance orientation nor from performance orientation to working smart improved model fit. The estimation results are presented in column 3 of Table 1 and Figure B1.

As predicted, a learning orientation motivates both smart (H₁ₐ) and hard (H₁₉) work, whereas a performance orientation motivates only hard work (H₂). Both positive (H₃ₐ) and negative feedback (H₃₉) raise learning orientation, whereas performance orientation is raised only by negative feedback (H₄). Finally, both smart (H₄) and hard (H₅) work increase performance.

We also tested nonadjacent paths and found that positive feedback influences smart and hard work directly. Consistent with previous research (e.g., Jaworski and Kohli 1991), positive feedback improves work behavior by means other than a raised learning orientation.

Moderating Effects of Self-Efficacy

We hypothesized that the paths from (1) positive feedback to learning orientation, (2) negative feedback to performance orientation, and (3) performance orientation to working hard are moderated by self-efficacy. Using the median

---

¹Self-efficacy and functional flexibility were found to have a +.26 correlation. Both assess confidence in ability. Because functional flexibility is restricted to the capability to alter selling behavior, there is limited ecological overlap with self-efficacy, overall capability as a salesperson.
of the self-efficacy scale, our sample was split into relatively high and low self-efficacious salespeople. Tests to assess the moderating effects were conducted using two-group LISREL analysis (see Appendix B, “Self-Efficacy Moderator Analysis”). An examination of the results from the hypothesized model indicated that further improvements were possible. Improvements were made by allowing paths from performance orientation to working smart and learning orientation to working hard to have differential effects across the high and low self-efficacy groups.

Table 1, columns 4 and 5, has the parameter values. In column 6, significance of the difference across high and low self-efficacy groups is reported. H₃ proposes that positive feedback raises a learning orientation more for low self-efficacious salespeople. Though in the right direction, the difference is not significant. H₅ is not supported. However, we do find that positive feedback raises a learning orientation only for low self-efficacious salespeople; the greater confidence high self-efficacious salespeople have appears to free them from needing external encouragement.

H₆ proposes that negative feedback raises a performance orientation more for high self-efficacious salespeople. Again the difference, though in the right direction, is not significant. Thus, H₆ is not supported. Negative feedback is found to raise a performance orientation for both low and high self-efficacious salespeople. It seems that, even with a reduced confidence, salespeople feel compelled to react to negative feedback by attempting to demonstrate their ability.

H₇ proposes that a performance orientation motivates hard work more for high self-efficacious salespeople than for low self-efficacious salespeople. The difference is significant, supporting H₇. A performance orientation motivates hard work only for high self-efficacious salespeople. Low self-efficacious salespeople appear to feel “helpless” about their goal to demonstrate their ability.

Although not hypothesized, we find a performance orientation motivates working smart more for high self-efficacious salespeople than for low self-efficacious salespeople. It appears that the aversion performance-oriented salespeople have to experimenting while converting ability into outcome is mitigated by self-efficacy (cf. Elliott and Dweck 1988). Self-efficacy also is found to moderate the motivational effect of learning orientation on working hard. Only low self-efficacious salespeople are motivated by a learning orientation to work hard. Perhaps high self-efficacious salespeople feel confident that they can develop ability through smart or intelligent work, whereas low self-efficacious salespeople believe that they also need hard work to develop their ability.

**Discussion**

We have identified that salespeople are concerned about not only performance goals but also learning goals and that these two goals differentially motivate their work behavior. Most sales motivation and evaluation programs attempt to instill a performance orientation. They focus on setting sales targets, offering salespeople incentives for achieving or surpassing these targets. Similarly, most research on salesperson productivity has suggested that performance improvements occur through instilling a performance orientation that causes salespeople to work hard. Our findings suggest that salesperson productivity depends considerably on develop-
TABLE 1
Parameter Values for Final Models

<table>
<thead>
<tr>
<th>(1) Path</th>
<th>(2) Expected Relationships</th>
<th>(3) Overall Model&lt;sup&gt;a&lt;/sup&gt;</th>
<th>(4) High Self-Efficacy&lt;sup&gt;a&lt;/sup&gt;</th>
<th>(5) Low Self-Efficacy&lt;sup&gt;a&lt;/sup&gt;</th>
<th>(6) Chi-square difference&lt;sup&gt;c&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning orientation to</td>
<td>H&lt;sub&gt;1a&lt;/sub&gt;: Positive</td>
<td>.58</td>
<td>.48</td>
<td>.48</td>
<td>N.A.&lt;sup&gt;d&lt;/sup&gt;</td>
</tr>
<tr>
<td>working smart&lt;sup&gt;b&lt;/sup&gt;</td>
<td>(6.86)</td>
<td>(4.36)</td>
<td>(4.36)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning orientation to</td>
<td>H&lt;sub&gt;1b&lt;/sub&gt;: Positive</td>
<td>.38</td>
<td>.20</td>
<td>.68</td>
<td>16.90</td>
</tr>
<tr>
<td>working hard</td>
<td>(3.61)</td>
<td>(1.28)</td>
<td>(4.80)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance orientation to</td>
<td>H&lt;sub&gt;2&lt;/sub&gt;: Positive</td>
<td>.33</td>
<td>.80</td>
<td>-.22</td>
<td>19.22</td>
</tr>
<tr>
<td>working hard</td>
<td>Moderating Effect of</td>
<td>(3.04)</td>
<td>(5.49)</td>
<td>(1.30)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Self-efficacy: H&lt;sub&gt;7&lt;/sub&gt;—High &gt; Low</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance orientation to</td>
<td>None</td>
<td>N.A.</td>
<td>.16</td>
<td>-.23</td>
<td>4.41</td>
</tr>
<tr>
<td>working smart</td>
<td></td>
<td></td>
<td>(1.19)</td>
<td>(1.42)</td>
<td></td>
</tr>
<tr>
<td>Positive feedback to learning</td>
<td>H&lt;sub&gt;3a&lt;/sub&gt;: Positive</td>
<td>.20</td>
<td>.09</td>
<td>.30</td>
<td>1.89</td>
</tr>
<tr>
<td>orientation</td>
<td>Moderating Effect of</td>
<td>(2.12)</td>
<td>(7.77)</td>
<td>(2.53)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Self-efficacy: H&lt;sub&gt;9&lt;/sub&gt;—Low &gt; High</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative feedback to learning</td>
<td>H&lt;sub&gt;3b&lt;/sub&gt;: Positive</td>
<td>.28</td>
<td>.22</td>
<td>.22</td>
<td>N.A.</td>
</tr>
<tr>
<td>orientation&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
<td>(2.81)</td>
<td>(2.26)</td>
<td>(2.26)</td>
<td></td>
</tr>
<tr>
<td>Positive feedback to</td>
<td>None</td>
<td>N.A.</td>
<td>N.A.</td>
<td>N.A.</td>
<td>N.A.</td>
</tr>
<tr>
<td>performance orientation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative feedback to</td>
<td>H&lt;sub&gt;4&lt;/sub&gt;: Positive</td>
<td>.55</td>
<td>.64</td>
<td>.38</td>
<td>2.83</td>
</tr>
<tr>
<td>performance orientation</td>
<td>Moderating Effect of</td>
<td>(6.73)</td>
<td>(5.66)</td>
<td>(3.29)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Self-efficacy: H&lt;sub&gt;6&lt;/sub&gt;—High &gt; Low</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working smart to performance</td>
<td>H&lt;sub&gt;5&lt;/sub&gt;: Positive</td>
<td>.23</td>
<td>.26</td>
<td>.26</td>
<td>N.A.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2.07)</td>
<td>(2.68)</td>
<td>(2.68)</td>
<td></td>
</tr>
<tr>
<td>Working hard to performance</td>
<td>H&lt;sub&gt;5&lt;/sub&gt;: Positive</td>
<td>.38</td>
<td>.32</td>
<td>.32</td>
<td>N.A.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3.24)</td>
<td>(3.31)</td>
<td>(3.31)</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
<sup>a</sup>Standardized coefficient and T-value in brackets. T-values greater than 2.00 are significant.
<sup>b</sup>These paths were set equal across high and low self-efficacy groups.
<sup>c</sup>Test to see if the coefficients in the high and low self-efficacy groups are significantly different from each other. Values greater than 3.84 are significant at the .05 level.
<sup>d</sup>N.A. means that the particular path was not hypothesized to exist and it was not significant.

...ing a learning orientation. This orientation, like a performance orientation, motivates salespeople to work hard while also motivating them to work smart—that is, engage in planning, alter sales approaches in keeping with situational considerations, and have the confidence to enact a wide variety of sales approaches. In keeping with previous claims of the importance of adaptive selling (Spro and Weitz 1990; Sujan 1986; Weitz, Sujan, and Sujan 1986), we find sales performance depends on working smart, not just working hard.

In much laboratory research, it has been assumed that performance and learning orientations are opposites; that is, deemphasizing one fosters the other. Our field research suggests that, at least in a selling context, they are not opposites (we found a correlation of .28, not -.10). This implies that managerial interventions designed to increase the learning orientation of salespeople are unlikely to hurt their performance orientation.

We examined the influence of supervisory feedback on the goal orientations. In keeping with psychologists’ contentions that learning and performance orientations are states, not just traits (e.g., Ames and Archer 1988), we find that a learning orientation is raised by positive and negative feedback and a performance orientation is raised by negative feedback. A performance orientation is not affected by positive feedback. Thus, in sales, it appears that a performance orientation depends on a negative but not a positive environment for its development—a kick-in-the-pants style of workplace. A positive environment serves to increase salespeople’s interest in learning or improving their ability. Had we specified a model without a learning orientation, we may have concluded erroneously that positive feedback raises a performance orientation (see the raw correlations in Table A1).

Finally, we find that self-efficacy moderates the effect of a performance orientation on working hard and smart in ways similar to the findings in educational research (Elliott and Dweck 1988). A performance orientation motivates working smart and hard more for high self-efficacious salespeople. Although not suggested in educational research, we find that self-efficacy moderates the effect of a learning orientation on working hard; only low self-efficacious salespeo-
ple are motivated by their learning orientation to work hard. This finding indicates a need to explore the perceived substitutability of smart and hard work.

**Limitations**

All our measures, for both exogenous and endogenous constructs, are based on pencil-and-paper self-reports. Thus, the strength of reported relationships may be inflated by common method variance. However, for many of the paths we suggest, illustratively between learning orientation and functional flexibility and between negative feedback and learning orientation, it is unlikely that the salesperson respondents guessed the hypotheses. Furthermore, we followed a procedure for data collection—respondent anonymity, which involves filled questionnaires mailed directly to the researchers—that is unlikely to have motivated salesperson respondents to manage a favorable impression.

A second potential limitation concerns the use of a self-report measure of performance. Because information about the process aspects of selling are more available and salient to salespeople than to their supervisors (Behrman and Perreault 1982; Steel and Ovalle 1984), self-evaluations may have inflated the relationship between working smart and performance. Our research design incorporated some procedures that reduce this potential bias. Anonymity of responses reduces the leniency bias in performance evaluations (Reneman 1974), and evaluation criteria that are output rather than input related bring self-reports more in line with “objective” indicators of performance (Mabe and West 1982).

**Directions for Further Research**

*Developing a learning orientation.* Our research provides evidence that a learning goal orientation improves salespeople’s performance and managerial actions can influence this motivational orientation. Further research should investigate managerially controllable factors, other than positive and negative feedback, that raise salespeople’s learning orientation. Alternative aspects of feedback are promising candidates. With the help of scales that better distinguish between behavioral and output feedback than Jaworski and Kohli's (1991) scales, we expect that behavioral feedback will contribute more to raising learning orientations, whereas output feedback will contribute more to raising performance orientations (see Kohn 1987). An aspect of feedback distinct from positive and negative evaluation feedback is content feedback (Ilgen, Fisher, and Taylor 1979). Content feedback provides information on behavior and output without an evaluation. We expect it will raise salespeople’s learning orientations more than evaluation feedback.

Altering the reasons salespeople attribute for their successes and failures is another way their learning orientations might be influenced. Illustratively, encouraging salespeople to change their attribution for a lost sale from task difficulty to poor but correctable strategy could increase their learning orientation (see Anderson and Jennings 1980; Sujan 1986).

A leadership style that resembles this attributional therapy is “meaning attribution” leadership (Richardsen and Piper 1986). Through this style, the leader stimulates subordinates to find new, alternative ways of interpreting events that concern them. This style, Richardsen and Piper find, facilitates learning; it also should facilitate a learning orientation. Another leadership style that is likely to enhance salespeople’s learning orientations is termed transformational leadership (Hater and Bass 1988). A transformational leader transmits a sense of mission, arouses new ways of thinking, and consequently stimulates learning experiences; this style is congruous with a work force eager to develop its abilities.

A learning orientation also can be lowered by managerial interventions. Amabile (1983) and Csikszentmihalyi (1990) observe that educators and employers, by their actions, often destroy a naturally existent human orientation toward learning. From this viewpoint, if sales managers do not have strategies that facilitate their subordinates’ desire to learn, it is better for them to be unobtrusive—a doing nothing style often may be the best style of leadership.

*Working smart and hard and sales performance.* We have shown that working both smart and hard affect sales performance. It is important in the future to determine if the relative impact of working smart and hard depends on the nature of activities performed. For example, working hard might be more important for salespeople who typically encounter repetitive and routine tasks, such as taking inventory and writing up orders for replacement stock. On the other hand, working smart might be more important for salespeople who typically encounter highly creative and complex tasks—for example, for capital equipment salespeople. Through understanding the contingencies affecting the relative importance of working smart and hard, more appropriate choices of motivational programs can be made.

**Managerial Implications**

In keeping with Senge’s (1990) observation that learning organizations will outperform those that are only performance oriented, we find that a learning goal orientation adds significantly to a performance goal orientation in causing salespeople to be effective. Also in agreement with Senge’s thinking, we find that the discipline of attempting to expand one’s ability is critical, not only to future intelligence, but also to current intelligence—to understand one’s external reality and generate solutions appropriate to this context (working smart). Finally, consistent with Senge’s recommendation that managers should not consider their subordinates winners or losers but potential discoverers, we find that even those salespeople who are relatively low in self-efficacy are motivated by a learning orientation to work hard and smart; a performance orientation demotivates salespeople low in self-efficacy and causes them to be losers. Thus, our prescriptions for “a learning salesperson” parallel Senge’s prescriptions for “a learning organization.”

Although it may be intuitive to recognize that enjoying work, welcoming challenges, and considering mistakes a part of the learning process (the learning salesperson) are important for effective selling, this is not what is emphasized in either sales management practice or theory. Nor is it what is emphasized in other domains of management practice or theory. Similarly, though it is intuitive to recognize...
that emphasizing the demonstration of ability (performance goal orientation) among salespeople who lack confidence in their selling ability is likely to freeze their achievement behaviors, sales managers continue to do so. And researchers continue to advocate motivating salespeople through a performance orientation, irrespective of their self-efficacy. Motivational deficits are then falsely labeled “ability deficits.” Our findings suggest that shifting the focus to learning goals is a better choice than making ability deficit judgments. Rather than evaluate salespeople on ability and performance alone, it is important to evaluate them on a motivation to learn as well.

In addition to the suggestions we make to raise the motivation to learn, suggestions made in the sales management literature for fostering adaptive selling practices also may be appropriate for nurturing a learning orientation. Sujan, Weitz, and Sujan (1990) suggest that adaptive selling can be improved by providing salespeople with market research information, and actively involving expert salespeople in training: Access to information and exposure to experts is likely to prompt an interest in learning. They also suggest that making the process of selling enjoyable enhances adaptive behavior. Not only is task enjoyment likely to prompt an interest in learning, but also an interest in learning is likely to increase task enjoyment. Thus, any initiative sales managers might take to make the process of selling more enjoyable could have far-reaching benefits for salespeople’s learning orientation and working smart as well as their task enjoyment and job satisfaction. Unfortunately, sales managers appear not to recognize the importance of fostering task enjoyment (Csikszentmihalyi 1990, p. 154):

Whether work is enjoyable or not ranks quite low among the concerns of those who have the power to influence the nature of a given job. This is regrettable, because if workers really enjoyed their jobs they would not only benefit personally, but sooner or later they would almost certainly produce more efficiently and reach all the other goals that now take precedence.

Appendix A

Working Smart

A. Planning for the Sale (reliability = .82)

1. I get to my work without spending too much time on planning. (R)
2. I list the steps necessary for getting an order.
3. I think about strategies I will fall back on if problems in a sales interaction arise.
4. Because too many aspects of my job are unpredictable, planning is not useful. (R)
5. I keep good records about my accounts.
6. I set personal goals for each sales call.
7. I set personal goals for each sales call.
8. Each week I make a plan for what I need to do.
9. I do not waste time thinking about what I should do. (R)
10. I am careful to work on the highest priority tasks first.
11. Planning is a waste of time. (R)
12. Planning is an excuse for not working. (R)
13. I don’t need to develop a strategy for a customer to get the order. (R)

B. Functional Flexibility in Sales

1. Dominant
2. Warm
3. Aloof
4. Ambitious
5. Cold
6. Extroverted
7. Introverted
8. Outgoing
9. Laid back
10. Agreeable
11. Aggressive
12. Trusting
13. Unassuming
14. Demanding
15. Submissive
16. Calculating

C. The Practice of Adaptive Selling (reliability = .88)

1. Basically, I use the same approach with most customers. (R)
2. I vary my sales style from situation to situation.
3. I like to experiment with different sales approaches.
4. I use a set sales approach. (R)
5. I can easily use a wide variety of selling approaches.
6. I find it difficult to adapt my presentation style to certain buyers. (R)
7. Each customer requires a unique approach.
8. I am very sensitive to the needs of my customers.
9. When I find that my sales approach is not working, I can easily change to another approach.
10. It is easy for me to modify my sales presentation if the situation calls for it.
11. I feel that most buyers can be dealt with in pretty much the same manner. (R)
12. I am very flexible in the selling approach I use.
13. I try to consider how one customer differs from another.
14. I feel confident that I can change my planned presentation when necessary.
15. I do not change my approach from one customer to another. (R)
16. I treat all of the buyers pretty much the same. (R)

Working Hard (reliability = .68)

1. I work long hours to meet my sales objectives.
2. I do not give up easily when I encounter a customer who is difficult to sell.
3. I work unthinkingly at selling a customer until I get an order.
4. On average, how many hours a week do you currently work?

Learning Orientation (reliability = .81)

1. Making a tough sale is very satisfying.
2. An important part of being a good salesperson is continually improving your sales skills.
3. Making mistakes when selling is just part of the learning process.
4. It is important for me to learn from each selling experience I have.
5. There really are not a lot of new things to learn about selling. (R)
6. I am always learning something new about my customers.
7. It is worth spending a great deal of time learning new approaches for dealing with customers.

46 / Journal of Marketing, July 1994
8. Learning how to be a better salesperson is of fundamental importance to me.
9. I put in a great deal of effort sometimes in order to learn something new.

**Performance Orientation (reliability = .71)**
1. It is very important to me that my supervisor sees me as a good salesperson.
2. I very much want my coworkers to consider me to be good at selling.
3. I feel very good when I know I have outperformed other salespeople in my company.
4. I always try to communicate my accomplishments to my manager.
5. I spend a lot of time thinking about how my performance compares with other salespeople’s.
6. I evaluate myself using my supervisor’s criteria.

**Positive Feedback (reliability = .94)**
1. When my supervisor thinks my performance is good, he or she provides me with positive feedback.
2. My supervisor makes it a point of telling me when he or she thinks I manage my time well.
3. My supervisor commends me when he or she thinks I am using the “right” selling techniques.
4. My supervisor lets me know when he or she thinks I am producing good results.
5. When I make an important sale, my supervisor makes it a point of mentioning it to me.
6. My supervisor tells me when I deal with customers appropriately.
7. My supervisor expresses his or her approval when he sees me doing my job as he or she expects.
8. When my supervisor is satisfied with my sales output, he or she comments about it.

**Negative Feedback (reliability = .89)**
1. My supervisor lets me know when he or she is upset with my performance results.
2. When my supervisor thinks I have done something wrong, he or she lets me know about it.
3. My supervisor makes it a point to tell me when he or she thinks I am not using the right selling techniques.
4. My supervisor is prompt in letting me know when my output is below his or her expectations.
5. When I deal with customers in a way which my supervisor disapproves, he or she lets me know.
6. My supervisor would let me know if I did not demonstrate a new product/service properly.
7. When I fail to meet his or her sales expectations, my supervisor indicates his or her dissatisfaction.
8. When my supervisor doesn’t find me working the way he or she expects, he or she lets me know.

**Self-Efficacy (reliability = .77)**
1. I am good at selling.
2. It is difficult for me to put pressure on a customer. (R)
3. I know the right thing to do in selling situations.
4. I find it difficult to convince a customer that has a different viewpoint than mine. (R)
5. My temperament is not well-suited for selling. (R)
6. I am good at finding out what customers want.
7. It is easy for me to get customers to see my point of view.

**Performance (reliability = .81)**
1. Contributing to your company’s acquiring a good market share.
2. Selling high profit-margin products.
3. Generating a high level of dollar sales.
4. Quickly generating sales of new company products.
5. Identifying major accounts in your territory and selling to them.
6. Exceeding sales targets.
7. Assisting your sales supervisor meet his or her goals.

**Notes**
1. (R) implies a reflexed item.
2. The scale for Performance went from “Much Worse”(-5) to “Average”(0) to “Much Better”(+5).
3. The scale for the Practice of Adaptive Selling, Planning for the Sale, and first three items of Working Hard went from “Describes My Style Not At All”(1) to “Describes My Style Perfectly”(7).
4. The scale for Functional Flexibility in Sales went from “Not Easy for Me”(1) to “Very Easy for Me”(7).
5. The scale for Learning and Performance orientations, Positive and Negative Feedback, and Self-efficacy went from “Strongly Disagree”(1) to “Strongly Agree”(7).
6. All reliabilities are LISREL computed composite reliabilities.

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Performance</td>
<td>7.93</td>
<td>1.36</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Working smart</td>
<td>5.40</td>
<td>.50</td>
<td>.41*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Working hard</td>
<td>0</td>
<td>.71</td>
<td>.39*</td>
<td>.39*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Learning orientation</td>
<td>6.08</td>
<td>.61</td>
<td>.24*</td>
<td>.44*</td>
<td>.40*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Performance orientation</td>
<td>5.01</td>
<td>.86</td>
<td>.28*</td>
<td>.16*</td>
<td>.32*</td>
<td>.39*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Positive feedback</td>
<td>5.06</td>
<td>1.27</td>
<td>.27*</td>
<td>.33*</td>
<td>.38*</td>
<td>.30*</td>
<td>.30*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Negative feedback</td>
<td>5.37</td>
<td>1.07</td>
<td>.23*</td>
<td>.28*</td>
<td>.33*</td>
<td>.31*</td>
<td>.42*</td>
<td>.52*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Self-efficacy</td>
<td>5.45</td>
<td>.70</td>
<td>.30*</td>
<td>.51*</td>
<td>.49*</td>
<td>.41*</td>
<td>.41*</td>
<td>.12</td>
<td>.22*</td>
<td>.24*</td>
</tr>
</tbody>
</table>

Notes:
n = 190 except for Performance = 186, Positive feedback = 187, and Negative feedback = 189.

*p <.05.

TABLE A1
Means, Standard Deviations, and Intercorrelations of Constructs

Learning Orientation, Working Smart, and Effective Selling / 47

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
Appendix B

The model in Figure 1 was tested using LISREL 8 (Jöreskog and Sörbom 1993). An adaptation of Anderson and Gerbing’s (1988) two-step approach to structural equation modeling was utilized.

Measurement Model

On the basis of Anderson and Gerbing’s recommendation, we developed a measurement model before estimating the structural paths to test the hypothesized relationships between constructs. Because including all the constructs would result in too complex a model to be estimated easily using LISREL (cf. Anderson and Narus 1990; Bentler and Chou 1987), we ran three separate measurement models as indicated in Table B1. The first measurement model included the two goal orientations and self-efficacy. The second included positive and negative feedback, working hard, and performance. Finally, the third evaluated working smart as a second-order factor of planning, adaptive selling, and functional flexibility. Because functional flexibility was conceptualized as a composite measure, a summed indicator was used to reflect it. The error (or theta-epsilon) was set at .10 following Anderson and Gerbing’s (1988) recommendation.

Consistent with Anderson and Gerbing (1988), all three measurement models were evaluated on the following criteria: unidimensionality, reliability, and convergent and discriminant validity. As Table B1 indicates, all items had a significant loading on their corresponding construct because the lowest t-value was 2.75, demonstrating adequate convergent validity. As Appendix A reports, the lowest LISREL-based composite reliability was .68, close to the generally acceptable cut-off level of .70, indicating the measures are reliable. A pairwise comparison of the constructs in Table B1 indicates that all the latent-traits correlations between constructs are significantly different than one, establishing discriminant validity. To evaluate unidimensionality, we examined the modification indices and residuals. When considered in light of the large number of items, no substantial departures from unidimensionality were observed. Although the overall fit of Models 1 and 2 is acceptable, the comparative fit index (CFI) for Model 3, which includes a 12-item planning scale and a 16-item adaptation scale, is not as high as one would like it to be. Unfortunately, establishing unidimensionality with a large number of items is problematic within the stringent LISREL environment. Overall, our conceptualization of the constructs were supported empirically; however, the second-order factor loadings of working smart are substantial.

The information from the measurement models was used to help estimate the overall structural model. Because retaining each item as a reflective indicator of its constructs would result in identification problems, we combined the items measuring each construct into a single indicator measure. Separate indicators were computed for each of the three facets of working smart. The error for each construct was set at one minus the composite reliability (Kenny 1979; Williams and Podsakoff 1989). The error for the three indicators measuring working smart were set at one minus their respective second-order factor loading.
Structural Model

To examine the structural relationships, the hypothesized main effects model in Figure 1 was estimated, and the model in Figure B1 resulted. The results are reported in Table 2 (column 3). The overall fit of the model in Figure B1 is acceptable. Although the $\chi^2$ statistic (47.64 with 27 degrees of freedom) is significant ($p = .008$), the CFI of .94 is satisfactory with the $\chi^2$/df ratio being below 2.0.

Within the context of a significant positive correlation between learning and performance orientations ($\gamma_{21} = .27$), learning orientation has a significant positive influence on working both smart ($\beta_{31} = .58$; $t = 6.86$, $p < .001$) and hard ($\beta_{41} = .38$; $t = 3.61$, $p < .001$), supporting $H_{1a}$ and $H_{1b}$, respectively. Performance orientation is significantly positively related to working hard ($\beta_{42} = .33$; $t = 3.04$, $p < .01$), supporting $H_2$.

Both positive ($\gamma_{11} = .20$; $t = 2.12$, $p < .05$) and negative feedback ($\gamma_{12} = .28$; $t = 2.81$, $p < .01$) are significantly related to learning orientation, supporting $H_{3a}$ and $H_{3b}$; and negative feedback significantly affects performance orientation ($\gamma_{22} = .55$; $t = 6.73$, $p < .001$), supporting $H_4$. Positive and negative feedback are positively correlated ($\phi_{23} = .52$).

Working smart and hard has significant positive paths to performance ($\beta_{32} = .23$; $t = 2.07$, $p < .05$ and $\beta_{44} = .38$; $t = 3.24$, $p < .01$) supporting $H_4$ and $H_5$. These relationships are in the context of a significant positive correlation between the two work behaviors ($\phi_{43} = .29$).

The path between performance orientation and working smart, when added to the model, is not significant ($\beta_{32} = -.06$; $t = .54$). The path between positive feedback and performance orientation, when added to the model, is also not significant ($\gamma_{21} = .12$; $t = 1.18$). All eight nonadjacent paths between the constructs also were inspected. Results from introducing these paths, one at a time, to the model in Figure B1 indicate that only two of them are significant. Positive feedback directly and positively influences both working smart ($\gamma_{11} = .17$; $t = 2.16$, $p < .05$) and working hard ($\gamma_{44} = .22$; $t = 2.62$, $p < .05$). Adding both these paths to the model in Figure B1 improved the CFI marginally, from .94 to .98.

Self-Efficacy Moderator Analysis

To examine the moderating effects of self-efficacy on the structural paths (Figure 1), we split the sample into two groups based on the self-efficacy score of the salesperson respondent. The median of our self-efficacy scale was 5.5 (7 was the maximum score), and 93 salespeople were below the median whereas 97 were above the median. Using the same measurement model developed for the overall structural model, we examined whether there were any significant differences in structural parameters between salespersons who are high and low on self-efficacy using two-group LISREL.

The "equal" model (M$_{\text{equal}}$), in which all structural paths were set to be equal across the high and low self-efficacy groups, was compared with the "free" model (M$_{\text{free}}$), which allowed all structural paths to differ between the two groups. There is a significant difference between the free and equal models. As Table B2 indicates, the free model has a significantly better overall fit ($\chi^2_{\text{difference}} = $)

<table>
<thead>
<tr>
<th>TABLE B1 Measure Validation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of Items (Reliability)</strong></td>
</tr>
<tr>
<td><strong>MODEL 1</strong>a</td>
</tr>
<tr>
<td>Performance orientation</td>
</tr>
<tr>
<td>Learning orientation</td>
</tr>
<tr>
<td>Self-efficacy</td>
</tr>
<tr>
<td><strong>MODEL 2</strong>a</td>
</tr>
<tr>
<td>Positive feedback</td>
</tr>
<tr>
<td>Negative feedback</td>
</tr>
<tr>
<td>Working hard</td>
</tr>
<tr>
<td>Performance</td>
</tr>
<tr>
<td><strong>MODEL 3</strong>b</td>
</tr>
<tr>
<td>Planning</td>
</tr>
<tr>
<td>Adaptation</td>
</tr>
<tr>
<td>Functional flexibility</td>
</tr>
<tr>
<td>Notes:</td>
</tr>
<tr>
<td>aMeasurement model of the constructs.</td>
</tr>
<tr>
<td>bSecond-order factor model of &quot;Working Smart.&quot;</td>
</tr>
<tr>
<td>cFormative scale and therefore no reliability computed. Was included in second-order factor model as a composite index with an error of .10.</td>
</tr>
<tr>
<td>dCFI = comparative fit index.</td>
</tr>
<tr>
<td>*Phi estimates with standard error of the estimate within the parentheses. All phi-values greater than twice the standard error are significant. Discriminant validity is achieved in all cases because each phi-value plus or minus twice the standard error does not include 1.</td>
</tr>
</tbody>
</table>

Learning Orientation, Working Smart, and Effective Selling / 49
### TABLE B2
Evaluating Nested Models to Assess the Impact of Self-Efficacy

<table>
<thead>
<tr>
<th>Model</th>
<th>Overall Fit</th>
<th>Paths Constrained or Relaxed</th>
<th>Model Comparisons</th>
</tr>
</thead>
<tbody>
<tr>
<td>(M_{equal}: ) Equal Model</td>
<td>( \chi^2 = 112.63 ) (70 df)</td>
<td>All structural paths set to be equal across the two groups.</td>
<td>(M_{equal}: ) (M_{free} ): ( \chi^2 = 29.74 ) (10 df) significant</td>
</tr>
<tr>
<td></td>
<td>( p &lt; .001      )</td>
<td></td>
<td>Because (M_{free} ) has a substantially better overall fit than (M_{equal} ), all the paths are not equal across the two groups.</td>
</tr>
<tr>
<td></td>
<td>CFI = .85</td>
<td></td>
<td>(M_{equal} ) versus (M_{free} ): ( \chi^2 = 29.74 ) (10 df) significant</td>
</tr>
<tr>
<td>(M_{free}: ) Free Model</td>
<td>( \chi^2 = 82.89 ) (60 df)</td>
<td>All structural paths set free across the two groups.</td>
<td>Because (M_{free} ) has a substantially better overall fit than (M_{equal} ), all the paths are not equal across the two groups.</td>
</tr>
<tr>
<td></td>
<td>( p &lt; .03       )</td>
<td></td>
<td>(M_{equal} ) versus (M_{free} ): ( \chi^2 = 24.23 ) (8 df) significant</td>
</tr>
<tr>
<td></td>
<td>CFI = .92</td>
<td></td>
<td>Because (M_{free} ) has a substantially better overall fit than (M_{theory} ) there are other models that will provide an improvement in overall fit.</td>
</tr>
<tr>
<td>(M_{theory}: ) Hypothesized Model</td>
<td>( \chi^2 = 107.12 ) (68 df)</td>
<td>The following paths set to be equal across the two groups:</td>
<td>(M_{theory} ) versus (M_{free} ): ( \chi^2 = 24.23 ) (8 df) significant</td>
</tr>
<tr>
<td></td>
<td>( p &lt; .01       )</td>
<td>Negative feedback to learning orientation</td>
<td>Because (M_{free} ) has a substantially better overall fit than (M_{theory} ) there are other models that will provide an improvement in overall fit.</td>
</tr>
<tr>
<td></td>
<td>CFI = .93</td>
<td>Learning orientation to working smart</td>
<td>(M_{theory} ) versus (M_{equal} ): ( \chi^2 = 20.97 ) (2 df) significant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Performance orientation to working hard</td>
<td>A significant improvement in overall fit and thus the paths are not equal across the two groups.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Working smart to performance</td>
<td>Comparisons with null (equal) and saturated (free) models:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Working hard to performance</td>
<td>(M_{final} ) versus (M_{equal} ): ( \chi^2 = 26.48 ) (4 df) Significant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The following paths set to be free across the two groups:</td>
<td>(M_{final} ) versus (M_{free} ): ( \chi^2 = 3.26 ) (6 df) Not significant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Positive feedback to learning orientation (H6)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Negative feedback to performance orientation (H6)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Performance orientation to working hard (H7)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>No paths specified between the following:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Positive feedback to performance orientation</td>
<td></td>
</tr>
<tr>
<td>(M_{final}: ) Final Model</td>
<td>( \chi^2 = 86.15 ) (66 df)</td>
<td>The only change from (M_{theory} ) was that</td>
<td></td>
</tr>
<tr>
<td></td>
<td>( p &lt; .05       )</td>
<td>the following paths were set free across the two groups:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CFI = .93</td>
<td>Learning orientation to working hard</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Performance orientation to working smart</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

29.74 with 10 degrees of freedom), thereby implying that all paths are not equal across the high and low self-efficacy groups.

To assess whether a model more parsimonious (i.e., with greater degrees of freedom but not a significantly worse overall fit) than the free model exists, we constructed the theoretical model \((M_{theory})\). On the basis of \(H_1 - H_3\), the theoretical model hypothesizes which paths should be equal across the two groups and which paths should be different. This model \((M_{theory})\), when estimated, has a \( \chi^2 \) of 107.12 with 68 degrees of freedom. There is a significant difference \( (\chi^2_{\text{difference}} = 24.23 \) with 8 degrees of freedom) between the theoretical and the free models (see Table 3), indicating that an improved model could be found.

In an attempt to improve the model further, we allowed the path between a learning orientation and working hard as well as between performance orientation and working smart to be unequal across the two groups. The modification indices suggested these changes. The resulting model \((M_{final})\) has an impressive fit, with a \( \chi^2 \) of 86.15 with 66 degrees of freedom \((p < .05)\). In addition, this model \((M_{final})\) is substantially superior \((\chi^2_{\text{difference}} = 20.97 \) with 2 degrees of freedom) to \(M_{theory}\), the theoretical model. Furthermore, as Table B2 indicates, this model \((M_{final})\) is a substantial improvement over the equal model \((\chi^2_{\text{difference}} = 26.48 \) with 4 degrees of freedom) and not significantly different from the free model \((\chi^2_{\text{difference}} = 3.26 \) with 6 degrees of freedom). The latter comparison implies that freeing any of the remaining four paths restricted to equality will not result in parameter values that are significantly different across the two groups.
REFERENCES


Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.