RICHARD L. OLIVER*

As a result of a lack of empirical investigation, the variance in salesmen's performance attributable to motivational constructs has not been estimated. Vroomian expectancy theory was used to show that the motivational perceptions attributed to a set of sales "incentives" by a sample of life insurance salesmen were related to two performance criteria.

Expectancy Theory Predictions of Salesmen's Performance

INTRODUCTION

The determinants of salesmen's performance have long intrigued researchers and practitioners alike. Unfortunately, little information has been amassed in this area. Rather, the bulk of current knowledge has been accumulated in the domain of sales aptitude where the evidence is substantial. Based on results reported in numerous studies, Ghiselli found that the average validity coefficient between sales proficiency criteria and tests of intellectual abilities was .33 while that for personality (including interest) tests was .30 [15, p. 470]. Although these average coefficients are high relative to those obtained on other occupational groups, the two aptitude measures taken together as independent predictors would not explain more than 20% of the variance in performance. Thus, over 80% of the variance remains to be explained by other constructs.

The subject of motivation has also received extensive discussion in the sales management literature but little substantive knowledge has emerged. This may, in part, reflect the fact that authors usually subsume motivation under the broad category of compensation or under other financial remuneration schemes sometimes classified as "stimulators" (see, for example, [10, 35, 43, 44]). Writings on the subject frequently contain an implicit assumption that the basic compensation package is the primary regulator of motivation. It is further assumed that other incentives or stimulators (e.g., contests, bonuses, conventions) operate only to induce performance over and above that which can be engendered from the basic plan.

While many of the managerial tools used by the sales administrator provide strong motivating forces, in instances they are insufficient and additional incentives are required. Most sales executives agree that a sound compensation plan can be the strongest force to motivate salesmen [43, p. 430].

Conclusions such as the one just cited are often supported by reference to an early study by Haring and Myers [21]. Questionnaires, designed to probe the use of special incentives for salesmen, were mailed to members of the National Sales Executives representing approximately 8,000 companies. Of 542 respondents, 396 answered a question pertaining to the effectiveness of various incentives in stimulating the average salesman to better his usual performance. The researchers found that the basic compensation plan was cited as the first ranked incentive by 243 respondents and concluded that "basic compensation is the primary motivator of salesmen" [21, p. 158].

This conclusion is unwarranted for three reasons. First, the authors have made inferences about the relative effectiveness of various "motivators" solely on the basis of superiors' reports. However, it has been noted elsewhere [28, 34] that, when asked to rank the importance subordinates attach to various job factors, managers typically overemphasize the importance of pay. The results of the Haring and Myers [21] study may have been similarly biased. Second, the study provided no evidence of validity. While a number of possible incentives were identified in the study, Haring and Myers fell short of providing...
empirical support for their assertion. A predictive study testing the validity of the various "motivators" would be required to substantiate their conclusion.

Third, the results of one mail survey do not provide sufficient evidence for the authors' sweeping conclusion, especially in view of the paucity of empirical research on financial compensation. Opsahl and Dunnette observed that:

(We know amazingly little about how money either interacts with other factors or how it acts individually to affect job behavior. Although the relative literature is voluminous, much more has been written about the subject than is actually known. Speculation, accompanied by compensation fads and fashions, abounds . . . [34, p. 94].)

Opsahl and Dunnette further noted that compensation as a primary motivator of organizational behavior is only one of many possible theoretical roles posited in the literature. In short, no evidence exists to suggest that money is either a primary motivator or is primary on a hierarchy of motivators.

To a lesser extent, the motivating qualities of nonmonetary or psychological incentives have also been prominently argued in the literature, although they are usually suggested as adjuncts to the basic compensation package. Lists of psychological needs requiring satisfaction have been proffered by many writers in the sales management field (see, for example, [4, 14, 31]) but have not been subjected to empirical investigation. As a result of the lack of evidence in both the monetary and nonmonetary areas of motivation, little is known about how compensation and other possible rewards motivate salesmen to produce.

Preoccupation with the content of motivational schemes (e.g., pay, psychological needs) has led writers to ignore the cognitive processes by which behavior is initiated, directed, and continued. That is, theorists have been content merely to suggest specific things that motivate behavior rather than to delineate the processes by which major classes of variables interact to produce behavior. Campbell, Dunnette, Lawler, and Weick summarized this point succinctly:

A motivational theory is useful for making predictions only to the extent that it specifies both content and process, that is, to the extent that it specifies the identity of the important variables and the processes by which they influence behavior [5, pp. 341-2].

As a result of the lack of a comprehensive motivational model, the determinants of salesmen's motivation remain essentially unknown. Without this knowledge, one is unable to assess empirically the proportion of variance in performance attributable to motivation. The implications for the sales manager are substantial. In order to increase production through an optimal allocation of resources, the relative impact of motivation as opposed to ability and other factors on performance must be known.

In contrast to the paucity of theory and evidence regarding the performance of sales personnel, considerable research has been undertaken in the area of industrial psychology and significant progress has been made in increasing the state of current knowledge on employee productivity as a function of motivation at both the theoretical and empirical levels. Much of industrial motivation theory has direct applicability to the motivation of sales personnel.

**VROOMIAN EXPECTANCY THEORY**

Expectancy theory as applied to employee motivation is generally attributed to Vroom [46], although its historical roots are in the works of Lewin [29] and Tolman [45] who postulated that organisms develop cognitive expectancies regarding the outcomes of behavior and consequently behave in a manner which is likely to result in preferred outcome states.

Generally, expectancy theory posits that the motivational force experienced by an individual to select one behavior from a larger set is some function of the perceived likelihood that that behavior will result in the attainment of various outcomes weighted by the desirability (valence) of these outcomes to the person [25]. Thus, it is essentially a process theory in that its focus is on the major classes of motivational constructs and the manner in which they interact as opposed to detailing the specific outcomes or needs that presumably motivate behavior [5]. As such it may help to integrate previous writings on the content of sales motivation.

Vroom's [46] theory hypothesizes that employee job performance \( P \) is a function of the multiplicative interaction between motivation \( M \) and ability \( A \).

Thus:

\[
\begin{align*}
(1) \quad P &= f(M \times A).
\end{align*}
\]

The rationale for the multiplicative relationship is that if an individual is low on either performance component, then his performance must be necessarily low as well.

Motivation, in turn, is hypothesized to be a function of the multiplicative interaction of the valence of one's performance goal \( f(V_j) \) and the subjective probability or expectancy that one's efforts will result in the attainment of that performance goal \( E_j \). Thus:

\[
\begin{align*}
(2) \quad M &= f(V_j \times E_j).
\end{align*}
\]

A performance level is seen as acquiring valence only if it is perceived as leading to the attainment of desired job-related outcomes such as pay or recog-

\[1\] In the strict theoretical sense, Vroom, [46] posits a discrete level of motivation for each effort and performance level. However, when effort is construed generically and one performance level is singled out as the criterion of interest, Vroom's conceptualization reduces to (1) [33].
EXPECTANCY THEORY PREDICTIONS OF SALESMEN'S PERFORMANCE

nition, or to the blocking of undesirable outcomes such as being terminated. The desirability of a job-related outcome, \( k \), is specific to the individual and constitutes his valence for that outcome \( (V_k) \). Valence is positive if the outcome is desirable, negative if the outcome is undesirable, and zero if one is indifferent toward the outcome. One's perception of the degree to which performance at level \( j \) will result in or block the attainment of outcome \( k \) is termed the instrumentality\(^2\) of performance level \( j \) for outcome \( k \) \( (I_{jk}) \). Instrumentality is positive if performance results in attainment of outcome \( k \), negative if it blocks attainment of outcome \( k \), and zero if it has no effect on attainment of outcome \( k \).

The theory posits that the valence of a performance level \( (V_j) \) is a function of the multiplicative interaction of the valence of the \( k \)th outcome and the instrumentality that performance level \( j \) will result in outcome \( k \), summed over all \( (n) \) outcomes. Thus:

\[
V_j = f \left( \sum_{k=1}^{n} (V_k \times I_{jk}) \right).
\]

Evidence as to the predictive validity of the theory in industrial settings is mounting \([23, 32]\), although the performance variance explained, while significant, is low. Generally, performance measures are regressed on the valences and instrumentalities of a priori determined outcomes, expectancy, and ability in additive and/or interactive form. The motivation and performance valence constructs are usually not measured directly because of operational difficulties. While self-reported effort is sometimes used as a proxy for motivation, this variable can be seen as completely determined by the antecedent constructs.

It should be noted here that the theory does not specify the content of the motivationally relevant outcome set. It has been shown elsewhere, particularly with regard to the formation of attitudes and also in simulated choice behavior, that only a small subset of all possible affective and belief cognitions about an object are "salient" \([6, 19, 37]\). This issue takes on added significance given the large number of "motivators" suggested in the sales management literature. The motivating qualities of various compensation plans, incentive type "stimulators" \( (e.g., \) sales contests, conventions, production clubs) \([20]\), and higher order psychological needs \([47]\) have, at one time or another, been afforded prominent status in the motivational literature. While at least one writer has argued that little evidence exists to support the alleged potency of any one set \([8]\), investigations of this nature have not been forthcoming. Thus, a test of the separate effects of each set should, in part, resolve some long-standing issues regarding the efficacy of monetary, organizational, and psychological outcomes.

Of special import to the present investigation is the fact that no previous study has attempted to validate expectancy theory on a sample of salesmen despite the great emphasis placed on motivation as a determinant of performance in the sales management literature. The purpose of the study reported here is to provide such evidence.

METHOD

Subjects

Subjects were all full-time life insurance agents of a medium-sized Midwestern life insurance company. A questionnaire tapping motivational perceptions was sent to 99 full-time agents in late March, 1972. In all, 95 \((96\%)\) of the full-time field responded to the request. Of the 95 respondents, three were eliminated because of incomplete and unusable questionnaires and three were terminated before the performance period expired.

In addition, nine "agency building" agent-managers were eliminated from the study because they were not sufficiently involved in production activities to have meaningful performance goals. This resulted in a final sample size of 80. The average subject was 38 years old, had been with the company 8 years, and had 2 years of education at the college level.

Design

A cross-sectional nonexperimental design was employed. Because of time and resource constraints, performance data were collected over the six-month period of January through June, 1972. The questionnaire was administered midway through this time span. While an annual performance period may have been more meaningful in terms of reliability, analysis of the previous years production figures showed that production for the first six months correlated .936 with the annual data.

Measures

Dependent variables. Two criteria were investigated. The first, six-month production volume, was used because of the pervasive nature of absolute volume as the criterion in the insurance industry. The productivity of agents, agencies, companies, and the industry itself is measured in terms of this factor. Production data were supplied by the company.

In an effort to overcome the problems introduced when comparing the performance of salesmen in different territorial environments \( (\text{for discussion, see } [18]) \), a second relative criterion was used. As a matter of company policy, agents were encouraged to estab-
job dimensions identified by Herzberg et al. [24] as peculiar to the research setting, and a number of other as to include compensation, incentive-type awards to the company's annual convention. Club membership the research setting were investigated. These included 

<table>
<thead>
<tr>
<th>Table 1</th>
<th>JOB OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Making the (Lives) club</td>
<td></td>
</tr>
<tr>
<td>Receiving more responsibility in my position</td>
<td></td>
</tr>
<tr>
<td>Getting improvements in home office practices and procedures</td>
<td></td>
</tr>
<tr>
<td>Having better working relations with my supervisor</td>
<td></td>
</tr>
<tr>
<td>Furthering my professional growth and development</td>
<td></td>
</tr>
<tr>
<td>Receiving more recognition and appreciation for my production efforts</td>
<td></td>
</tr>
<tr>
<td>Making the (Premium) club</td>
<td></td>
</tr>
<tr>
<td>Getting better agency office facilities</td>
<td></td>
</tr>
<tr>
<td>Feeling more secure in my job</td>
<td></td>
</tr>
<tr>
<td>Feeling a greater sense of accomplishment from the work I'm doing</td>
<td></td>
</tr>
<tr>
<td>Advancing within the company to a (higher) field management position</td>
<td></td>
</tr>
<tr>
<td>Making greater use of my skills and abilities on my job</td>
<td></td>
</tr>
<tr>
<td>Having my family and friends view my job as having greater prestige</td>
<td></td>
</tr>
<tr>
<td>Getting better supervision</td>
<td></td>
</tr>
<tr>
<td>Feeling greater self-esteem from my job</td>
<td></td>
</tr>
<tr>
<td>Going to the company convention</td>
<td></td>
</tr>
<tr>
<td>Having better working relations with the agents in my agency</td>
<td></td>
</tr>
<tr>
<td>Receiving more income from my job</td>
<td></td>
</tr>
<tr>
<td>Making the ($1 Million) club</td>
<td></td>
</tr>
<tr>
<td>Feeling a greater sense of self-fulfillment from my job</td>
<td></td>
</tr>
</tbody>
</table>

lish a production objective or goal for the calendar year. As agent goals presumably incorporated a number of situational factors (e.g., market potential, intensity of competition) and individual factors (e.g., tenure), they were used to provide a common basis for making interagent production comparisons. Thus, a goal attainment criterion was established in this study by dividing an agent's six-month volume by his production objective. Goals were obtained from the questionnaire.

Outcomes. Twenty job outcomes were selected so as to include compensation, incentive-type awards peculiar to the research setting, and a number of other job dimensions identified by Herzberg et al. [24] as having implications for motivation. These outcomes were aggregated into sets so that competing interpretations of a "motivationally salient" set could be tested. The various outcome sets are listed in Table 1.

Compensation. In addition to the strong nonempirical emphasis on pay in the sales management literature, some evidence exists to suggest that pay is a significant predictor of productivity when tested alone in an expectancy theory format [26, 36, 39, 40]. The potency of pay as a predictor may arise because it can be seen as instrumental in the attainment of many other needs, job related or otherwise [28]. The outcome, receiving more income from my job, was used for this variable.

Incentives. Four production incentives specific to the research setting were investigated. These included membership in three production clubs and invitation to the company's annual convention. Club membership was based on three annual performance criteria. Agents selling one million dollars in paid annual volume were admitted to the "$1 Million" club, while those placing life insurance on 100 people in a calendar year were awarded with membership in the "Lives" club. The top 16 agents yielding the greatest paid annualized premium (a profitability measure) were admitted to the "Premium" club. Finally, the convention qualifications were based on a combination of volume and commission. As has been noted, a test of the separate effects of this set should, in part, resolve some long-standing issues concerning the behavioral implications of sales incentives over and above the effect of the basic compensation plan.

Intrinsic outcomes. Lawler [27] has drawn a distinction between intrinsic and extrinsic outcomes. Intrinsic outcomes are self-bestowed and are thus more available to the individual while extrinsic outcomes must be mediated through another entity. In addition, intrinsic outcomes are of higher order in terms of Maslow's [30] paradigm and conform to what sales management writers refer to as "psychological" needs. The five intrinsic outcomes used in this study included furthering one's professional growth, receiving a sense of accomplishment from one's job, the satisfaction of using one's skills and abilities on the job, furthering one's self-esteem, and gaining a sense of self-fulfillment.

Most desirable outcomes. Researchers in organizational behavior [17], social psychology [37], and marketing [6, 19] have suggested that only a small set of the most salient or important outcomes are used by individuals in behavioral decisions and attitude formation. This position assumes that a motivationally salient outcome set is peculiar to the individual. The outcomes used here included the three most desirable outcomes as selected by the subject in a special section of the questionnaire.

All job outcomes. In early writings on expectancy theory, no distinction was made between the salience of various sets of outcomes. Rather it was assumed that all outcomes had some behavioral implications because if any did not, they would receive an assigned valence or instrumentality weight of zero. A separate test of all 20 outcomes chosen for the study was included to provide evidence for this notion.

Valence. Outcome valences were measured on a scale from extremely undesirable (-3) through neither desirable nor undesirable (0) to extremely desirable (+3). This scoring method was used for all analyses except those in which the three most desirable outcomes were used. Because considerable restriction of range was expected, a procedure used by Goodman, Rose, and Furcon [17] was applied. The most desirable outcome was assigned a valence weight of 3, the second ranked outcome was given a weight of 2, and the third outcome was given a valence score of unity.

Instrumentality. Instrumentality items were phrased
in terms of subjective probabilities. Subjects were asked to scale their beliefs of the effect of attaining their production goal on the occurrence of each of the outcomes. The scale ranged from no effect (0) to certain to occur (1). Intermediate values included low probability (.25), 50-50 chance (.5), and high probability (.75).^3

Expectancy. For the expectancy measure, each subject was asked to indicate the chances in ten that his efforts would lead to the attainment of his production goal.

Ability. While the literature on the ability of salesmen [15, 18] strongly suggests that both intelligence and personality inventories are predictive of sales success, the company unfortunately did not administer standard versions of these tests to its agents. Only a recently introduced "in-house" intelligence test was available. To confound matters, test scores were obtained under both employee and applicant conditions and were not available for roughly 10% of the sample. As the company was not willing to have additional tests administered to its field, the scores on the "in-house" test were used as a sole measure of ability. The mean score was substituted for missing scores.

ANALYSIS

While Vroom's [46] model is stated in terms of multiplicative interactions between variables, researchers [13, 23] have raised the issue of whether the multiplicative model contributes any variance beyond that explained by the main effects in additive combination. In order to provide evidence relating to this issue, the contribution of a multiplicative interaction above that of the main effects was assessed in terms of the incremental variance explained in the criteria [7].

The criteria were first regressed on the components of the additive model under investigation and the variance explained in each criterion was observed. Next, the multiplicative interaction of components was introduced in the model as a third variable. The coefficient of determination yielded by this second model was then compared to that obtained in the first model and the incremental variance explained was tested for significance. If the increment was significant, the interaction was concluded to have made a contribution to the explained variance above that of the main effects.

Hypotheses

The research hypotheses investigated were as follows:

Hypothesis 1: Aggregate valence and instrumentality

\[ P = \alpha + \beta_1 \sum V_k + \beta_2 \sum I_j \]

Hypothesis 2: Performance valence and expectancy

\[ P = \alpha + \beta_1 \sum V_k I_j + \beta_2 E_j \]

Hypothesis 3: Motivation and ability

\[ P = \alpha + \beta_1 E_j \sum V_k I_j + \beta_2 A \]

RESULTS

Hypothesis 1

Simple correlations between aggregate valence, instrumentality, their interaction, and the performance criteria are presented in Table 2. Aggregate valence figures for the most desirable outcome set are not presented because of the artificial weighting scheme used. Two-tailed tests were used for the aggregate valence and instrumentality figures while one-tailed tests were used for the interaction term. Directionally testing the interaction term but not its components derives from the theory. While both positive and negative valence scores may be related to a motivated state if the corresponding instrumentality term is of the same sign, the interaction term should be related to high motivation only if the valence-instrumentality product is positive. A negative product would be associated with reduced motivation.

It is apparent from inspection of Table 2 that only the incentive outcomes predicted the performance criteria. Aggregate valence, instrumentality, and the interaction for this outcome set were highly correlated with the volume criterion although only aggregate valence and the interaction were correlated with the goal attainment criterion. While the instrumentality term for the compensation outcome predicted the volume criterion, the correlations between the interaction term and both criteria were effectively zero. Thus, it appears that only perceptions regarding the incentive outcomes were effectively related to agent motivation in this study.

Results obtained from regressing the criteria on an
additive combination of (a) aggregate valence and instrumentality and (b) aggregate valence, instrumentality, and their multiplicative interaction are shown in Table 3. The results show that, when using the incentive set to predict the volume criterion, a significant multiple correlation coefficient was obtained although it was not significantly higher than the simple correlation obtained between the criteria and the components taken separately. However, no other outcome set predicted this criterion nor was any outcome set related to the goal attainment criterion. In addition, the contribution of the interaction term over and above that of its components was nonsignificant in every test for both criteria.

The pattern of results above can best be explained by the correlations between the aggregate terms presented in Table 4. Valence and instrumentality were highly correlated as were the component terms with their interactions. It appears that the high multicollinearity of the predictor variables obscured any possible unique contribution of the individual terms, a phenomenon also observed in a study of attitude formation [42].

This result could be explained by cognitive consistency principles. As predicted by balance theory [22], the agents may have oriented their instrumentality

Table 4
CORRELATIONS BETWEEN AGGREGATE VALENCE, INSTRUMENTALITY, AND THEIR INTERACTION

<table>
<thead>
<tr>
<th>Outcome set</th>
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perceptions so as to coincide with valence perceptions or vice versa. On the one hand, behavior may be seen as instrumental only for valent outcomes. That is, no thought may be given to unimportant outcomes whether performance is instrumental for their attainment or not. As an alternative hypothesis, outcomes may be desirable only to the extent that they are attainable. That is, only a dreamer would desire something wholly outside of his grasp. This argument is consistent with recent thinking in attitude theory where it is believed that people change their beliefs and attitudes to bring them in accord with their behavior [3].

As a corollary to the relationships suggested above, a third hypothesis may be tenable. Perhaps the valence \rightarrow\text{ instrumentality} relation reflects the state of nature for some outcomes, while the instrumentality \rightarrow\text{ valence} relation best models reality for other outcomes. Based on the results presented here, these hypotheses are worthy of investigation.

**Hypothesis 2**

Simple correlations between the expectancy variable and the performance criteria are presented in Table 5. Significant correlations were obtained for both criteria although the magnitude of the goal attainment relationship was higher. Clearly performance was a function of expectancy perceptions.

The correlations between the motivation term and the performance criteria are presented in Table 6. One-tailed tests were assumed. Both the incentive and most desirable outcome sets predicted the criteria significantly. However, with the exception of the relation between the volume criterion and the motivation term attributable to the incentive set, it appears that the significant results derived largely from the expectancy measure. Note further that the multiplicative combination of expectancy and performance valence for the incentive set did not appreciably increase the correlation obtained with the performance valence term alone.

The potency of the expectancy measure is reflected in the pattern of results obtained when the criteria were regressed on an additive function of performance level valence, expectancy, and their interaction reported in Table 7. Contrary to the earlier findings, the goal attainment criterion was significantly predicted for all outcome sets. However, the multiple cor-

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<tr>
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\(a p \leq .01,\) one-tailed test.

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</table>

\(a p \leq .05.\)

\(b p \leq .01.\)

### Table 7

<table>
<thead>
<tr>
<th>Outcome set</th>
<th>Model</th>
<th>R</th>
<th>R²</th>
<th>p:R²</th>
<th>p:ΔR²</th>
<th>R</th>
<th>R²</th>
<th>p:R²</th>
<th>p:ΔR²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compensation</td>
<td>a</td>
<td>.262</td>
<td>.069</td>
<td>n.s.</td>
<td>n.s.</td>
<td>.311</td>
<td>.096</td>
<td>.05</td>
<td>n.s.</td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>.313</td>
<td>.098</td>
<td>.05</td>
<td>n.s.</td>
<td>.344</td>
<td>.119</td>
<td>.05</td>
<td>n.s.</td>
</tr>
<tr>
<td>Incentive</td>
<td>a</td>
<td>.498</td>
<td>.248</td>
<td>.01</td>
<td>n.s.</td>
<td>.331</td>
<td>.109</td>
<td>.05</td>
<td>n.s.</td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>.503</td>
<td>.253</td>
<td>.01</td>
<td>n.s.</td>
<td>.341</td>
<td>.117</td>
<td>.05</td>
<td>n.s.</td>
</tr>
<tr>
<td>Intrinsic</td>
<td>a</td>
<td>.290</td>
<td>.084</td>
<td>.05</td>
<td>n.s.</td>
<td>.314</td>
<td>.099</td>
<td>.05</td>
<td>n.s.</td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>.294</td>
<td>.086</td>
<td>.05</td>
<td>n.s.</td>
<td>.322</td>
<td>.104</td>
<td>.05</td>
<td>n.s.</td>
</tr>
<tr>
<td>Most desirable</td>
<td>a</td>
<td>.290</td>
<td>.084</td>
<td>.05</td>
<td>n.s.</td>
<td>.312</td>
<td>.097</td>
<td>.05</td>
<td>n.s.</td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>.291</td>
<td>.085</td>
<td>n.s.</td>
<td>n.s.</td>
<td>.314</td>
<td>.099</td>
<td>.05</td>
<td>n.s.</td>
</tr>
<tr>
<td>All outcomes</td>
<td>a</td>
<td>.269</td>
<td>.072</td>
<td>n.s.</td>
<td>n.s.</td>
<td>.309</td>
<td>.096</td>
<td>.05</td>
<td>n.s.</td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>.276</td>
<td>.076</td>
<td>n.s.</td>
<td>n.s.</td>
<td>.330</td>
<td>.109</td>
<td>.05</td>
<td>n.s.</td>
</tr>
</tbody>
</table>
relation coefficients were not significantly larger than the simple correlation between expectancy and the goal criterion. Because the correlation between the volume criterion and expectancy was of a lower magnitude, the results using the volume criterion were attenuated for all outcome sets except the incentive group where the coefficient of determination was highly significant. Almost 25% of the volume criterion variance was explained when expectancy and the \( \Sigma V_k I_k \) term were regressed in additive combination.

When the interaction between expectancy and performance valence was introduced in the regression, its contribution to the explained variance was nonsignificant for all outcome sets using both criteria. In fact, addition of this term dropped the multiple correlation coefficient below the .05 significance level for two of the outcome sets when regressed on the volume criterion. On the other hand, it increased the predictive power of the compensation constructs although this increase was not significant.

The reason for the nonsignificant increase in predictability when the interaction term was introduced can again be attributed to the inherent multicollinearity between interaction terms and their components. Both the expectancy measure and the performance valence term were significantly correlated with their interaction. Thus the additive (a) models appear to be at least as predictive as higher order models incorporating interaction terms.

**Hypothesis 3**

Simple correlations between the ability measure and the performance criteria are shown in Table 5. The statistics show that ability as measured in this study was not correlated with the criteria. In fact, the ability measure made no further predictive contribution when combined either additively or multiplicatively with the other variables. For this reason, further discussion of the findings is not presented here.

The lack of correlation between ability and performance should be viewed only in the context of this study, however. As the reader may recall, three problems were evident with the available scores for the “in-house” intelligence test used for the ability measure. First, the test was of uncertain origin; hence its reliability and validity were essentially unknown. Second, the technique of substituting mean predictor scores for missing scores was used. Generally, this will attenuate the magnitude of a correlation unless the corresponding criterion values are also at the mean.

The third problem concerns using scores from tests administered under both employee and applicant conditions. Rothe [38] has shown that the mean of a test distribution of applicant scores tended to be higher than the mean of scores for employees who were asked to take the test for validation purposes and attributed this to a higher level of “test-taking incentivation” on the part of the applicants. Thus, pooling test scores obtained under both conditions as was done in this study may also have contributed to the low correlation between ability and performance. In view of these problems, the reader is cautioned not to interpret the findings reported here as disconfirming evidence for the role played by ability as a determinant of performance. Rather, these results should further underscore the necessity of using reliable and valid instruments in a conscientious selection program.

In summary, a “motivationally salient” outcome set was identified using expectancy theory constructs. Valence and instrumentality perceptions of the four incentive-type outcomes used by the company under study were strongly related to productivity and, to a lesser extent, goal attainment. No other outcome set was consistently related to the criteria. While the general expectancy measure was also correlated with both performance criteria, the ability measure was not. When the volume performance criterion was regressed on an additive combination of expectancy and the \( \Sigma V_k I_k \) term for the incentive set, almost 25% of the variance in performance was explained. Given the paucity of empirical evidence on the role of motivation in salesmen’s performance, these results will hopefully encourage further research in this area.

**DISCUSSION**

The general predictive superiority of motivational perceptions attributed to the incentive outcome set over those of other sets has significant implications for sales management. First, this result shows that expectancy theory may be useful in identifying which of many possible outcomes in a sales situation are effective motivators and which are unrelated to performance. This information will permit the sales manager to shift the resources at his disposal to the most productive incentive programs and to improve or phase out those with little effect.

Second, the finding that various sales “stimulators” were, in fact, related to productivity supports in part what had been heretofore accepted as “lore” in the sales management literature. While this result might be attributed to spurious association in that a number of outcome sets were tested against the criteria, incentive outcomes are generally recognized as having motivational implications. The great frequency with which these devices are used [20] attests to the popularity of this belief.

The poor results obtained using the other outcome sets are noteworthy. In particular, the valence times instrumentality product for the compensation outcome did not yield significant results, although instrumentality alone was significantly correlated with the volume criterion. While this finding would appear to dispute the central postulate of many theories of sales motivation, it could be attributed solely to a restriction of range in the valence of pay measure. However, the
standard deviation of this variable (1.10) was not significantly smaller than the mean standard deviation of all 20 outcomes (1.32) or of the 4 incentive outcomes (1.25). Thus it appears that the desirability of furthering one's income was, in fact, randomly related to both performance criteria in this study.

The low validities attributed to the most desirable outcome set may have arisen from the possibility that outcome desirability does not necessarily connote outcome instrumentality although, as Table 4 shows, there is a marked tendency for these constructs to be correlated. Conceivably, some outcomes could be highly desired but be relatively unattainable. Expectancy theory would predict that outcomes of this nature would have little motivational impact.

The poor results obtained with the intrinsic outcome set suggest that outcomes of this nature may be motivationally dysfunctional. In particular, agents more desirous of intrinsic rewards showed a slight tendency to be poorer performers. Thus, until further evidence is collected, it is suggested here that the motivational implications of higher order psychological needs have been overemphasized in the literature.

Finally, the notion that all job-related outcomes are motivationally salient was not supported. Rather, as a number of writers [3, 12, 37] have suggested in other contexts, only a small subset of salient cognitions were related to the sales behavior investigated in this study. That is, while an individual may harbor many beliefs about the effect of his performance on various outcomes and be able to elicit them when asked, he may only act on a limited number.

Conceptual Refinements

A number of conceptual modifications may help to improve upon the performance variance explained in this study. Campbell et al. [5] and Jacoby [25] have suggested promising theoretical refinements to the basic expectancy model. Campbell et al. posit a hierarchy of outcome levels and suggest that performance is only instrumental for some (lower level) outcomes (e.g., pay). Higher level outcomes are seen as contingent not on performance, but on the attainment of lower level outcomes. Thus the motivational force attributed to a higher level outcome is a function of its desirability, the probability that lower level outcomes will result in attainment of the higher need, and the desirabilities and instrumentality of the lower level outcomes. While this approach may be a more accurate representation of the relationship between outcomes resided at various levels and performance, problems may be encountered in specifying the particular need hierarchy for each individual.

Jacoby [25] has distinguished between the motivational force attributed to outcomes of behavioral acts and that attributed to antecedent (input) values. Input values are those which "push" an individual to perform at a certain level apart from the outcomes of performance and can be loosely classified as those factors which influence behavioral norms (i.e., what one should do in a situation). Jacoby hypothesizes that individuals can respond to questions concerning the "significance" of a particular input and also the "likelihood that that input will influence selection" of a behavioral alternative. Jacoby's revised model can be stated as:

\[ M = f \left( \sum_{i=1}^{n} S_i L_{ij}, \sum_{k=1}^{n} V_k I_{jk} \right) \]

where:

- \( M \) = motivation to perform (at level \( j \)),
- \( S_i \) = significance of the \( i \)th input,
- \( L_{ij} \) = likelihood that input \( i \) will lead to selecting performance level \( j \),
- \( V_k \) = valence of outcome \( k \), and
- \( I_{jk} \) = instrumentality of performance level \( j \) for attaining outcome \( k \).

Hopefully future tests of expectancy theory predictions will profit from incorporation of the two theoretical refinements suggested here.

Apart from basic extensions of the theoretical model, the relationships reported in this study may have been attenuated by improper specification of the combinatorial mode between variables. Expectancy theory assumes that an individual mentally multiplies valence and instrumentality to arrive at a motivational force deriving from his desire for or aversion to each outcome. Yet no evidence exists on how individuals actually process valence and instrumentality perceptions. Conceivably this process may be linear as opposed to multiplicative or may be of some other interactive form. A growing body of research is emerging in the area of clinical judgment [16] that may provide insights to this issue.

Methodological Refinement

Bass and Wilkie [2] and Wilkie and Pessemier [48] have recently drawn attention to a potential problem that may arise when cross-sectional regression is performed on multi-attribute attitude models. Unless the very strong assumption of homogeneity across respondents is met, the results obtained in tests of such models may be attenuated because various segments of the sample perceive different rankings of attribute importance [41] or display divergent response sets [2]. These problems can be solved by performing an intra-individual analysis if independent variable data are collected on more than one criterion (e.g., preferences for competing brands). Criterion rankings can then be compared to rankings predicted by the attitude model for each individual taken separately. Bass and Wilkie have shown that the use of intra-individual analysis improved upon the number
of correct preference predictions from a cross-sectional analysis of the same data by 15% [2, p. 267]. Although the data collected in this study did not permit intra-individual analysis in that the motivational perceptions of various performance levels were not investigated, small samples of sales personnel from the same company selling to a regional market such as that used in this study may be "homogeneous enough" for cross-sectional analysis [48] when compared to national consumer samples used in many studies of brand preference. However, the possibility remains that the results obtained here may have been attenuated by regressing across heterogeneous respondents. To overcome this problem in future studies, researchers are advised to investigate the motivational perceptions attributable to various performance levels rather than focusing on one (e.g., goal attainment) as was done here. For example, subjects could be asked to scale the instrumentalities of falling short of, making, and exceeding their goal for each outcome. The predicted performance level having the highest \( \sum V_k \cdot i_k \) score could then be compared to the actual performance level for each salesman taken separately.

**Sources of Unexplained Variance**

While the multiple correlation obtained when the volume criterion was regressed on expectancy theory constructs was highly significant, the theory as tested here explained only 25% of the performance variance. Three sources of unexplained variance were not tested in this study that may have increased the coefficient of determination measurably. The first encompasses a number of situational variables including market potential, territory workload, and the company's effort and experience [10, 11, 35] that may appreciably affect a salesman's productivity. While an attempt has been made to include these variables in a multivariate model [9], the initial results have not been productive. Second, the potential contribution to the performance variance explained by pure measures of ability was not adequately tested. Had scores from a valid selection battery been available, intelligence and personality constructs may well have been predictive. As suggested in the introduction to this article, standard tests of this nature have demonstrated validity on sales occupations.

Third, much of a salesman's decision to produce may be stochastic. Bass [1] has demonstrated that brand switching may be a stochastic process. It is also conceivable that a salesman's performance may not be entirely deterministic because of a "stochastic element in the brain" which influences his production decisions. This may be especially true for sales occupations where a high degree of autonomy is present. Future researchers may wish to provide an estimate of the performance variance remaining after stochastic processes have been accounted for so that potentially promising theories can be evaluated against the remaining variance attributed to deterministic processes.

**REFERENCES**


