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Salesforce Compensation: An Empirical Investigation of Factors Related to Use of Salary versus Incentive Compensation

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The transaction cost analysis framework is integrated with prescriptions from the sales management literature to develop a model that indicates the role of salary in a sales compensation plan for industrial firms. The descriptive power of the model is examined by surveying compensation practices in 161 firms. The results indicate that the transaction cost framework is somewhat useful in describing the use of salary, but the framework does not consider some important aspects guiding salary versus incentive compensation decisions.

## Salesforce Compensation: An Empirical Investigation of Factors Related to Use of Salary Versus Incentive Compensation

Compensation is the most important reward used to motivate salespeople (Churchill, Ford, and Walker 1979); however, until recently, guidelines for designing sales compensation programs have been limited to observations in the sales management literature and industry-level descriptive studies. Descriptive studies (e.g. Peck 1982; Steinbrink and Friedeman 1982) indicate what compensation practices are used in different industries but do not explain the substantial variations in these practices across and within industries. The tool and hardware industry illustrates the wide variations in compensation practices: in 1982, 30% of the firms in that industry used a straight salary plan, 30% used straight commission, and 40% used a mixed salary and commission plan (Steinbrink and Friedeman 1982, p. 24).

The objectives of our research are (1) to develop a conceptual framework for investigating the role of salary in a sales compensation plan by integrating the normative prescriptions in the sales management literature with prescriptions derived from transaction cost analysis (TCA), (2) to test the descriptive power of the proposed frame-

work, and (3) to suggest future research directions for determining the appropriate role of salary in different sales environments.

### SALES MANAGEMENT LITERATURE

The sales management literature suggests several factors that should be considered in determining the appropriate percentage (the role) of salary versus incentives in the sales compensation plan. Table 1 synthesizes the prescriptions found in sales management textbooks (Churchill, Ford, and Walker 1981; Dalrymple 1985; Shapiro 1977; Stanton and Buskirk 1983; Still, Cundiff, and Govoni 1981; Wotruba 1981) and articles on salesforce compensation (Smyth 1968; Steinbrink 1978). We have organized this set of operational prescriptions into the following underlying considerations for determining the role of salary: (1) the degree to which the performance of individual salespeople can be assessed accurately, (2) the impact of selling effort on sales (the partial derivative of the sales response curve with respect to selling effort), (3) the size of the salesforce, (4) the uncertainty confronting the salespeople, and (5) the interest in instilling a long-term orientation in the salespeople.

As the sales management prescriptions have not been defined precisely and integrated in a conceptual framework, the classification of these prescriptions into exclusive categories is somewhat arbitrary. For example, the importance of nonselling activities (specifically after-sale service) clearly contributes to the importance of in-

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**Table 1**  
**REVIEW OF SALES MANAGEMENT LITERATURE ON ROLE**  
**OF SALARY IN COMPENSATION PLAN**

<i>Factors affecting role of salary</i>	<i>Suggested role (percentage) of salary in sales management literature</i>
<i>Difficulty in assessing performance</i>	+
Usefulness of sales records as performance measures	—
Need for salespeople to coordinate efforts (use of team selling)	+
Complexity of selling task	+
Importance of nonselling activities	+
Amount of missionary selling	+
<i>Impact of selling effort on sales</i>	—
Information needs of customer (importance of personal selling versus advertising)	—
Company reputation	+
Degree of product superiority, differentiation	+
Level of territory development	+
<i>Size of salesforce</i>	+
<i>Uncertainty and risk confronting salespeople</i>	+
Experience of salesperson	—
Maturity of products	—
Amount of prospecting	+
Volatility of sales	+
<i>Interest in instilling a long-term orientation in salespeople</i>	+

stilling a long-term orientation as well as the difficulty of assessing performance. In the following discussion of the prescriptions in the sales management literature, we do not include specific references because the prescriptions are made in almost all of the textbooks and articles previously cited as sources.

In Table 1, the role of salary is operationalized as a continuous variable ranging from 0% for straight commission (salary has no role in the compensation plan) to 100% (salary has an exclusive role in the compensation plan). The recommended relationship between each factor and the use of salary versus incentive compensation is indicated in the right column. Thus, the first entry in Table 1 indicates that, on the basis of the sales management literature, the role of salary should be related inversely to the usefulness of sales records as performance measures.

Note that the sales management literature (as well as TCA) focuses on two methods of controlling salesforce activities: (1) incentives to align the goals of salespeople with the goals of the firm and thus motivate salespeople to act in the firm's interest and (2) supervision to monitor salespeople and ensure that they perform the activities required by the firm. To some extent, these control mechanisms are substitutes for each other, suggesting that the level of supervision can be reduced as more incentive compensation is used (see Kerr and Germeier 1978). Thus, the span of control of first-line managers may be related inversely to the role of salary in the compensation plan.

### *Difficulty of Assessing Performance*

A strong role for salary is recommended when assessing the contribution and performance of an individual salesperson is difficult. Because the use of incentive as a control mechanism requires that an "objective" measure of performance be tied to compensation, the use of incentive compensation is less feasible when such measures are difficult to obtain or when measures include a high degree of bias and/or random error. Hence, salary is deemed appropriate when team selling is used, when salespeople encounter complex selling situations, when salespeople engage predominantly in missionary selling, and when nonselling activities (stocking shelves, building displays, etc.) are more important than selling activities. Clearly, the use of team selling makes it difficult to assess the contribution of individual team members. The lack of objective measures such as sales revenues makes it difficult to assess the performance of nonselling activities and missionary selling. Finally, because complex selling situations often involve long time horizons and require significant company effort to support the salesperson, assessing the contribution of the individual salesperson at one point in time is difficult.

### *Impact of Selling Effort on Sales*

The sales management literature suggests that the role of salary should be related inversely to the relative impact of selling effort on sales (the slope of sales response function). When selling effort has a major role in generating sales, incentive-based compensation programs are advocated because the incentives motivate salespeople to expend additional effort—effort that has a high marginal return. When sales are primarily due to advertising, company reputation, and product superiority, selling effort has a diminished impact on sales and the literature suggests that salary should have a larger role. Greater use of incentive compensation is advocated when the selling task is difficult but the expenditure of effort can significantly affect sales, as when a salesperson is working in an underdeveloped territory.

### *Size of Salesforce*

The sales management literature suggests that more fixed cost is involved in effectively administering compensation plans that emphasize salary. Plans emphasizing salary require more managers (lower span of control and more levels of sales management) to monitor and assess performance. Supervision replaces the use of incentives as a control mechanism. Because of the fixed costs arising from the additional management levels associated with plans emphasizing salary, such plans are more sensitive to scale economies than plans emphasizing incentives. Hence the role of salary should be related directly to the salesforce size.

### *Uncertainty and Risk Confronting Salespeople*

A greater role for salary is suggested for salespeople operating in an uncertain environment. Salary is needed

to maintain income continuity (reduce risks) when salespeople are confronted with volatility due to seasonality or uncertain economic environments, when they have little experience with the job, or when they are engaged in selling new products or new customers.

#### *Interest in Instilling Long-Term Orientation*

Plans emphasizing salary are recommended when firms want their salespeople to adopt a long-term orientation and invest time servicing accounts to realize future sales. Deemphasis of incentives based on present sales encourages salespeople to forgo sales that will not be in their customers' long-term best interest. In contrast, plans emphasizing incentives are advocated when firms are entering a new market and seeking to build up short-term sales.

#### *Summary of Sales Management Literature*

Because the sales management literature consists of a collection of prescriptions based on practical wisdom, some of the suggestions in Table 1 are contradictory. For example, the recommended use of *more* salary in complex selling situations may be based on both an interest in instilling long-term orientation and the difficulty of assessing the performance of salespeople in such sales situations. However, complex selling situations are also situations in which personal selling effort is thought to have a major impact on the sales outcome, suggesting a *reduced* emphasis on salary. Such contradictions highlight the need for a theoretical framework that integrates these prescriptions.

In the next section we examine a promising approach for developing such a framework. The transaction cost analysis (TCA) approach is shown to incorporate theoretical constructs that are useful for resolving some of the contradictory prescriptions in the sales management literature.

#### **TRANSACTION COST ANALYSIS AND THE ROLE OF SALARY IN COMPENSATION PLANS**

Transaction cost analysis (Williamson 1975, 1981, 1985) provides an appealing framework for examining the role of salary versus incentive compensation because it identifies a set of theoretical constructs for determining the appropriate mechanism for controlling (governing) economic activities. In the salesforce control context, the transaction cost is the cost of performing, monitoring, and controlling activities performed by salespeople. TCA considers two control mechanisms: (1) bureaucratic control, which in this context corresponds to the use of supervision to implement compensation plans emphasizing salary, and (2) an arm's-length, market control mechanism that corresponds to plans emphasizing incentives. TCA suggests that the efficiency of bureaucratic control is a function of four variables: (1) transaction-specific assets (TSA), as they affect the degree to which salespeople can be replaced at low cost, (2) the ability to assess accurately the performance of salespeople, (3) the

environmental uncertainty facing sales managers, and (4) the size of the salesforce. Each of these variables is discussed in detail in this section.

Though Williamson (1981, 1985; Williamson, Wachter, and Harris 1975) suggests that TCA can be applied to labor market and intrafirm control issues, most prior research has focused on interfirm control issues such as the use of independent agents to perform the selling function instead of company employees (Anderson 1985; Anderson and Weitz 1986) or "make-or-buy" production decisions (Monteverde and Teece 1982; Walker and Weber 1984).

#### *Difficulty of Replacing Salespeople*

TCA, as applied to employment contracting, suggests that a supervision-based control mode emphasizing salary is cost efficient when the market mechanism fails—when there is limited competition in the labor market for salespeople. In this situation, the cost of salespeople will not be driven down to a low level through competition among potential employees in the labor market. If the salespeople do not produce the expected output, they cannot be replaced easily by others in the labor market.

In contrast, an incentive-based control mode is cost efficient when labor markets are highly competitive. In this situation, the firm "contracts" with salespeople to make sales. The salespeople are paid only on the basis of sales delivered. If a salesperson does not generate sales, incentives are not earned and sales costs are not incurred. If firms face opportunity losses from an underdeveloped territory, the salesperson is replaced at a low cost by selecting a readily available substitute in the labor market.

*Transaction-specific assets.* Two factors affecting the competitiveness of labor markets and the subsequent replaceability of salespeople are (1) the degree to which transaction-specific assets (TSA) are required to perform the selling task and (2) the level of company investments in salespeople. When idiosyncratic (transaction-specific) human assets are required to perform the selling function for a firm, competition within the labor market decreases. Incumbent salespeople cannot be replaced easily because the firm will incur significant training costs in developing the idiosyncratic skills in the newly hired salespeople. Under these circumstances, salespeople working for firms have an opportunity to engage in less efficient performance (opportunistic behavior) without fear of reprisals. The firm will tolerate some inefficiencies in the performance of the present salespeople rather than incur the cost of training new salespeople.

Transaction-specific human assets arise when firms have unique policies and procedures for placing orders, submitting quotations, and providing service. The need for salespeople to coordinate their activities with those of other employees also results in the creation of transaction-specific assets because the knowledge to coordinate effectively is not readily acquired or transferred.

It is important to note that high levels of skills do not

necessarily imply high levels of transaction-specific skills. Transaction-specific skills are distinguished by their lack of transferability across exchange relationships. Engineering expertise may be required to sell a technically complex product, but such expertise is only a TSA if it cannot be transferred to another job.

*Investment in salespeople.* Though not addressed in the TCA literature, the degree to which firms are willing to replace ineffective salespeople may be related to the level of investment made in the salespeople, independent of whether the investment is idiosyncratic or not. The exit barrier phenomenon (Porter 1981) suggests that, after making substantial investments in an asset, firms are reluctant to abandon that asset even though it is no longer productive. Thus, past investments indicate the *willingness* of firms to replace salespeople whereas TSA indicates the *ability* of firms to do so (or the ease of doing so).

#### *Ability to Assess Performance Accurately*

The difficulty of assessing individual salesperson performance affects the degree to which arm's-length incentive compensation plans can be used to control the salesforce. Sales performance can be assessed through the use of input or effort measures such as hours worked or sales calls made or through the use of output measures such as sales generated (see Anderson and Oliver 1987; Ouchi 1979).

Typically, plans emphasizing incentive compensation are based on output measures, whereas plans emphasizing salary use a combination of input and output measures to evaluate and control sales activities. The effectiveness of plans emphasizing incentives is related directly to the usefulness of output measures for assessing salesperson performance. When performance cannot be assessed by using output measures, firms must rely on input measures to evaluate performance. Plans emphasizing salary give firms more latitude to measure input through direct supervision and call reports.

However, monitoring inputs through direct supervision of boundary spanners such as salespeople may be very difficult in some situations. In these situations the high cost of obtaining input or effort measures tends to *reduce* the reliance on salary compensation.

#### *Uncertainty Facing Sales Managers*

In uncertain environments, it is difficult to specify *a priori* the tasks that must be performed and to develop accurate output standards against which performance can be assessed. Uncertainty often results in frequent reassessments and redefinitions of selling activities, which have a negative effect on efficiency independent of the role of salary. When salespeople receive a high level of incentive compensation, uncertainty can lead to costs in developing and implementing a new commission plan plus potential ill will among salespeople when their plan is changed unexpectedly. However, incentive compensation plans offer the benefit that the level of compen-

sation varies with the fortunes of the firm. It may be easy to alter the duties of salespeople with low levels of incentive compensation, but their level of compensation is fixed and would be difficult to decrease during a period of declining sales. Thus a significant role of salary affords more flexibility in altering the activities undertaken by salespeople, less flexibility in compensation level, and less potential ill will and administrative costs associated with altering sales activities.

The flexibility in compensation for salespeople with high levels of incentive compensation is meaningful to the firm only if salespeople can be replaced easily. If salespeople cannot be easily replaced, the firm cannot afford to lose good salespeople when their low commissions during poor company performance periods motivate them to look for another job. Thus uncertainty alone does not favor a role for salary, but uncertainty interacting with difficulty of replacing salespeople suggests a greater role for salary in the compensation plan.

#### *Size of Salesforce*

An administrative structure and supervision typically are necessary to direct and monitor salesforce activities when a compensation plan emphasizes salary. The firm cannot rely on the "invisible hand" of incentives to direct the salesforce. Because the fixed administrative costs associated with salary-based compensation plans decrease as the salesforce size increases, salary-based plans are more efficient for larger salesforces.<sup>1</sup>

Though emphasizing that size makes possible the use of bureaucratic control, Shapiro (1977) and Ouchi (1979) have suggested that the relationship between size and efficiency may be nonmonotonic. At one level, size may enable the firm to use an efficient bureaucratic control mechanism under appropriate conditions. However, at very high levels, the inefficiencies of bureaucratic control are significantly exaggerated and motivate the firm to adopt a more marketlike control mechanism.

#### *Summary of Transaction Cost Analysis*

TCA provides a logically consistent theoretical framework for identifying the conditions under which compensation plans emphasizing salary with supporting supervision versus incentives are more efficient in controlling the activities of salespeople. Specifically, TCA suggests that plans emphasizing salary are most appropriate when salespeople are difficult to replace, when it is difficult to assess the performance of salespeople, when sales managers face an uncertain environment, and for controlling the activities of large salesforces. In addition, we extend the traditional TCA framework to include the level of investment and the specific nature of performance as-

<sup>1</sup>Williamson often uses the term "frequency" to explain the role of scale economies. In this context, frequency of transactions (number of times sales activities are performed) is equated to the number of salespeople.

assessment problems. We suggest that high levels of investment in salespeople and assessment problems associated with output measures are commensurate with the use of plans emphasizing salary, whereas assessment problems associated with input measures are commensurate with plans emphasizing commission.

#### *INTEGRATION OF TRANSACTION COST ANALYSIS AND SALES MANAGEMENT PRESCRIPTIONS*

Figure 1 is a framework integrating the prescriptions of TCA and the sales management literature. The constructs unique to TCA are shown in shaded boxes and those unique to the sales management literature are shown in clear boxes. Constructs associated with both perspectives are shown in lightly shaded box.

Identifying and defining variables associated with TCA are not straightforward. The theory is not developed in sufficient detail to enable us to operationalize the constructs easily from a definition provided in the literature. For example, Williamson discussed coordination needs among employees as potential transaction-specific assets. Coordination needs also affect the ability to monitor performance. Hence we identify coordination needs as a separate construct—not as an aspect of transaction-specific assets. From our perspective, coordination needs seem to be an exogenous condition, rather than a reaction to the condition that takes the form of investing in idiosyncratic assets.

From a TCA perspective, the role of SALARY and associated supervision is the result of a noncompetitive market for labor (REPLACE), the difficulty of assessing performance with OUTPUT measures, and potential scale economies (SIZE of the salesforce). Environmental UNCERTAINTY has no direct effect on the role of SALARY from a TCA perspective. However, UNCERTAINTY moderates the effects of noncompetitive markets on the appropriate control mode. Under conditions of high uncertainty, the transaction costs associated with noncompetitive markets are greater, increasing the need for a control mode emphasizing supervision. In addition, UNCERTAINTY has an indirect effect by increasing the difficulty of assessing performance with OUTPUT measures. Finally, we indicate that difficulty in assessing performance with INPUTS is related positively to the role of salary. Though traditional TCA does not distinguish between input and output measures of performance, this refinement of the traditional TCA perspective can provide additional insights.

Some prescriptions from the sales management literature (INPUTS, OUTPUTS, and SIZE) are identical to constructs in TCA and are hypothesized to have similar effects on the role of salary. Note that UNCERTAINTY arises in both sales management literature and TCA; however, the sales management literature suggests a direct effect on the role of salary and TCA suggests an interactive effect with REPLACE.

The effects of another set of sales management prescriptions (COMPLEX, COORDINATION, and SELL)

are mediated by the theoretical constructs in TCA. The complexity of selling task (COMPLEX) and need for COORDINATION have a direct effect on the transaction-specific assets (TSA) of salespeople and the difficulty in assessing performance with INPUTS and OUTPUTS. The emphasis on selling versus servicing accounts (SELL) reduces OUTPUTS. In addition to examining the indirect effects of COMPLEX, COORDINATION, and SELL through the TCA constructs on the role of SALARY, we examined potential direct effects in our empirical study.

One prescription from the sales management literature, the impact of selling effort on sales (as assessed by RESOURCE and INFORMATION), affects the role of salary but is not related to the TCA constructs. Interest in instilling a long-term orientation, another prescription with a similar direct effect but unrelated to TCA, was not examined in the empirical study and thus is not shown in Figure 1.

Finally, the model in Figure 1 includes the psychological effects of investment in an asset on commitment to use the asset (INVEST). Though this construct is not considered in TCA, its inclusion is consistent with the TCA focus on factors affecting replaceability and market failures. INVEST is hypothesized to be affected directly by COORDINATION and COMPLEX and to have a direct effect on REPLACE.

The integration of the sales management prescriptions and the TCA constructs in Figure 1 clearly indicates that the conventional wisdom developed by sales managers is reflected in the theoretical TCA framework. The sales management prescriptions are either identical to TCA constructs or affect the role of salary through TCA constructs. Basically, TCA provides a framework for conceptualizing and extending the more operational prescriptions in the sales management literature. For example, the sales management literature emphasizes the use of salary when team selling is undertaken. TCA suggests that this prescription is due to both the TSA and performance assessment problems associated with team selling. These constructs also would be affected if other forms of coordination were needed, such as multilevel selling.

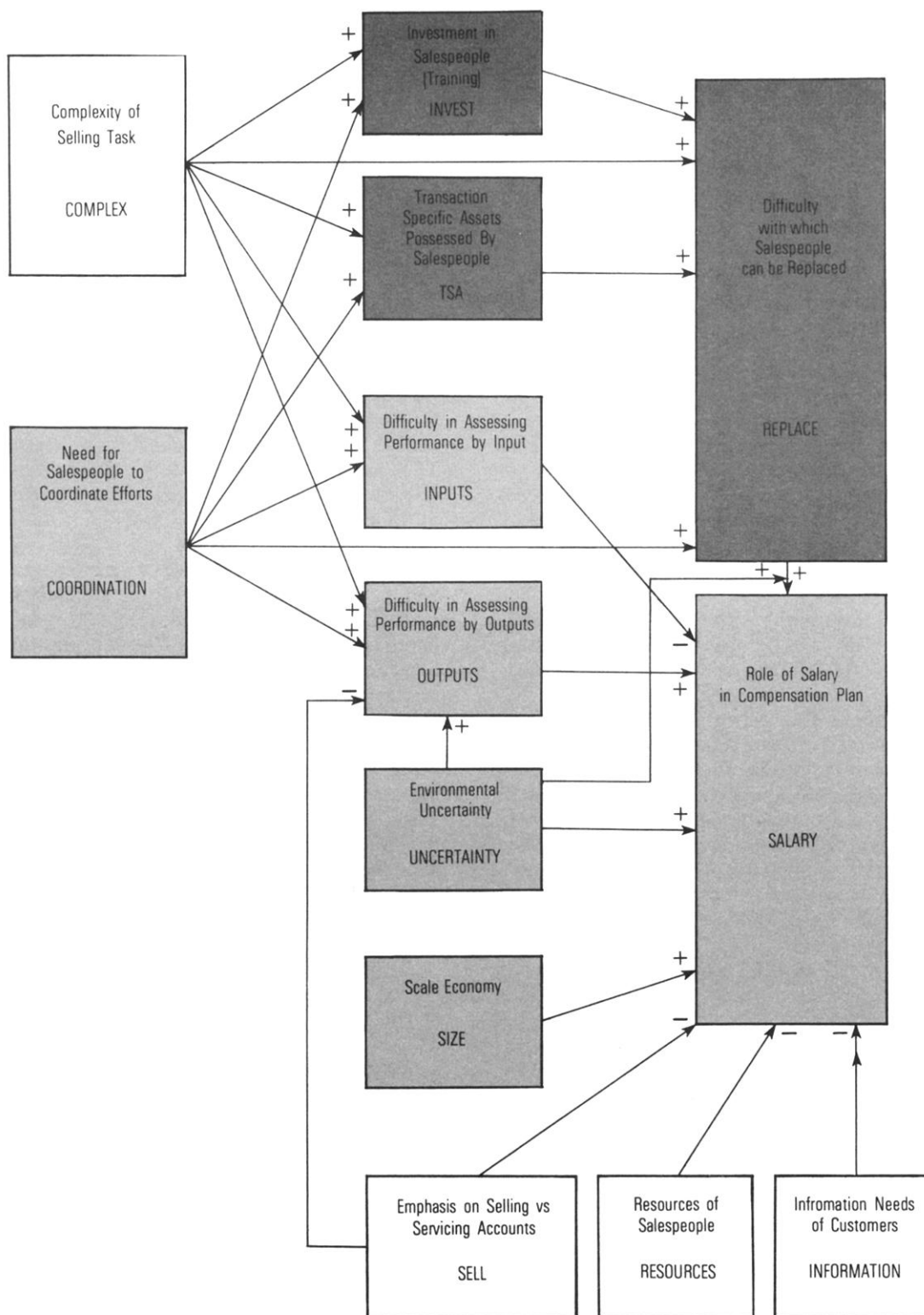
#### *RESEARCH DESIGN*

The relationship between the role of salary (percentage of salary in total compensation) in sales compensation plans and the variables previously discussed was assessed by means of a questionnaire mailed to a broad cross-section of participating firms. The questionnaire was developed and pretested in personal interviews with sales managers in 10 firms.

#### *Sampling Plan*

A two-stage procedure was used to obtain respondents to the questionnaire. First, 750 personalized requests to participate in the study were mailed to a random sample from a national mail list consisting of sales managers and

Figure 1  
CONCEPTUAL FRAMEWORK



sales vice-presidents in manufacturing firms (SIC codes 20,000 to 40,000) with annual sales exceeding \$50 million. As an incentive to participate, a summary of the findings was offered to each participating firm.

Two hundred sixty-six firms agreed to participate in the study. The response rate from this initial mailing is difficult to assess because of problems with the sampling frame. In many cases, the requests were returned because the addresses were incorrect or the individual no longer worked for the firm. In addition, several firms were excluded from the study during the first phase because they indicated that they used manufacturers' agents rather than direct sales personnel.

In the second stage, the questionnaire was mailed to the contact person at each firm with instructions requesting that the responses be made for one specific salesforce that was compensated by one plan. If the firm had multiple salesforces with different pay plans, the respondents were encouraged to complete multiple questionnaires. Three firms submitted questionnaires for two of their salesforces. Though these three firms' responses may not represent independent observations, we treated them as such in the analysis because they were provided by different respondents and constitute a very small percentage of the entire sample. A compensation specialist could provide some of the detailed information about the compensation plan, but the sales manager was asked to provide information about the nature of the selling task, selling environment, salespeople, and relationship between the firm and the salespeople.

The initial mailing was followed by a second mailing two weeks later. Telephone callbacks were used to resolve ambiguous responses and collect missing information. The survey was completed about 10 weeks after the initial mailing, yielding 161 completed questionnaires (a 61% response rate to the second mailing).

#### *Characteristics of Sample*

Though the sampling procedure did not ensure a representative sample of U.S. industrial salesforces, the procedure and characteristics of the sample are comparable to those in widely cited salesforce compensation studies performed by the Conference Board (Peck 1982) and Dartnell (Steinbreck and Friedeman 1982). In comparison with our sample, the respondents to the Dartnell survey appear to be in smaller companies employing slightly less experienced and lower paid salespeople. The respondents to the Conference Board survey have slightly larger salesforces with higher compensation. However, the annual sales per salesperson (\$2.3 million), average age (39 years), and types of compensation plans (16% salary only, 8% commission only, and 76% mixed) are very similar.

### **MEASURES**

#### *Role of Salary—Dependent Variable*

Each firm indicated total compensation costs during the last fiscal year associated with the following definitions.

1. Direct or base salary of salespeople: all compensation paid to salespeople during the last fiscal year that was guaranteed, independent of performance.
2. Commissions for salespeople: all compensation paid to salespeople based on a fixed formula related to a measure of performance such as a percentage of sales above quota or a percentage of gross contribution provided by a group of salespeople.
3. Bonuses for salespeople: all nonsalary and noncommission compensation paid to salespeople in lump sum based on the achievement of goals determined by management.

The role of salary (SALARY) was operationalized by calculating the salary (category 1) as a percentage of total compensation (1 + 2 + 3). Though the operationalization of the role of salary in compensation is straightforward, measurement error arises because of the wide variety of circumstances under which nonsalary compensation is awarded. For example, some firms have substantial commission payments, but pay the commissions on a regular basis from a nonrefundable drawing account. In terms of its impact on motivation, such compensation resembles salary more than commissions paid without a drawing account.

#### *Transaction Cost Analysis Constructs*

Each of the following scales is reported, with its reliability (Cronbach alpha), in the Appendix.

*Transaction-specific assets (TSA).* A 7-item scale assessing the uniqueness of company procedures and time needed to learn company procedures was used to measure the idiosyncratic assets arising from the relationship between the firm and the salesperson. These items are similar to those used by Anderson (1985).

*Replaceability (REPLACE).* A 2-item scale assessing the difficulty with which replacement salespeople can be hired was used to measure the degree of competition within the labor market.

*Coordination (COORDINATION).* The need for coordination was measured on a 5-item scale assessing the prevalence of team selling and coordination between sales and nonsales employees.

*Level of investment (INVEST).* The investment level was operationalized as time in months required for a newly hired salesperson to become familiar with the firm's products and customers.

*Difficulty in assessing salesperson performance.* Assessing performance with input measures (INPUTS) was measured on a 6-item scale indicating the degree to which salespeople can be supervised closely and the accuracy of activity reports. A single item was used to indicate the degree to which performance could not be determined solely with output measures—sales and costs (OUTPUTS).

*Environment uncertainty (UNCERTAINTY).* The uncertainty in the firm's environment was measured on a 4-item scale assessing stability in sales and forecasting accuracy. The interaction of environmental uncertainty and replaceability of salespeople was operationalized as the multiplication of UNCERTAINTY and REPLACE.



*Scale economies (SIZE).* Potential scale economies in terms of salesforce administration and overhead were operationalized by the number of salespeople in the salesforce (SIZE). This measure assumes that all firms in the sample have the same geographic scope.

#### *Sales Management Literature*

*Impact of selling effort on sales.* The three measures were used to assess the impact of selling effort on sales. Resources of the salespeople (RESOURCES) was 3-item scale assessing the degree to which salespeople can tailor their offering to customers. The range of alternatives offered was used to measure the resources of the salespeople. Information needs (INFORMATION) was the need of customers for information possessed by the salespeople. A 2-item scale assessing the familiarity of the customer with the product class and the frequency with which this purchase decision is made was used to measure the information needs of the customer. Selling time (SELL) was the percentage of time salespeople typically devote to selling as opposed to service, paperwork, and travel.

*Complexity (COMPLEX).* The complexity of the sales task was measured on a 5-item scale assessing the length of the purchase decision, the number of people in the buying firm involved, and the degree to which the purchase decision is routine.

Table 2 is the correlation matrix for the variables in Figure 1. This matrix reveals a high correlation between REPLACE and the interaction term REPLACE\*UNCERTAINTY.

#### *ESTIMATION*

The model in Figure 1 is represented by the following set of equations.

- (1)  $OUTPUTS = b_{10} + b_{11} UNCERTAINTY$   
 $+ b_{12} SELLING + b_{13} COMPLEX$   
 $+ b_{14} COORDINATION$
- (2)  $INPUTS = b_{20} + b_{21} COMPLEX$   
 $+ b_{22} COORDINATION$
- (3)  $TSA = b_{30} + b_{31} COMPLEX + b_{32} COORDINATION$
- (4)  $INVEST = b_{40} + b_{41} COMPLEX$   
 $+ b_{42} COORDINATION$
- (5)  $REPLACE = b_{50} + b_{51} INVEST$   
 $+ b_{52} TSA + b_{53} COMPLEX$   
 $+ b_{54} COORDINATION$
- (6)  $SALARY = b_{60} + b_{61} REPLACE + b_{62} INPUTS$   
 $+ b_{63} OUTPUTS + b_{64} UNCERTAINTY$   
 $+ b_{65} SIZE + b_{66} SELLING$   
 $+ b_{67} RESOURCES + b_{68} INFORMATION$   
 $+ b_{69} REPLACE \times UNCERTAINTY$

Because this system of equations is recursive, the parameters were estimated by OLS (Drymes 1974, p. 311). The estimated standardized parameters are reported in Table 3.

The estimated coefficients and associated statistical tests for equation 6 must be treated with caution because the dependent variable, percentage salary, is not normally distributed. In addition to being bounded between 0% (straight commission) and 100% (salary only), it has two mass points at the extreme ends of the distribution. To

Table 2  
MEANS, STANDARD DEVIATIONS, AND CORRELATION MATRIX OF VARIABLES

Variable	Mean	S. D.	X <sub>1</sub>	X <sub>2</sub>	X <sub>3</sub>	X <sub>4</sub>	X <sub>5</sub>	X <sub>6</sub>	X <sub>7</sub>	X <sub>8</sub>	X <sub>9</sub>	X <sub>10</sub>	X <sub>11</sub>	X <sub>12</sub>	X <sub>13</sub>
SALARY (X <sub>1</sub> )	71.2	29.2													
REPLACE (X <sub>2</sub> )	4.41	1.29	.14*												
INPUTS (X <sub>3</sub> )	3.06	1.06	-.11	.12											
OUTPUTS (X <sub>4</sub> )	4.04	1.68	-.19*	.06	.02										
UNCERTAINTY (X <sub>5</sub> )	3.13	.69	.00	.18*	-.03	-.02									
SIZE (X <sub>6</sub> )	51.7	70.4	-.18*	-.02	-.09	.10	.06								
SELL (X <sub>7</sub> )	35.1	17.2	-.26**	-.04	.00	.12**	.06	-.04							
RESOURCES (X <sub>8</sub> )	61.3	18.7	-.31***	-.11	-.11	.00	.16*	.23**	.01						
INFORMATION (X <sub>9</sub> )	20.4	17.8	-.16*	.25**	.21**	-.14*	.19*	-.05	.03	.19*					
INVEST (X <sub>10</sub> )	8.21	5.97	.14	.21**	-.04	-.06	.07	-.04	.03	.09	.13				
TSA (X <sub>11</sub> )	3.45	1.00	.06	.09	.23**	-.02	.32***	.23**	.03	.09	.17*	.09			
COMPLEX (X <sub>12</sub> )	54.5	23.7	-.07	.33***	.18*	-.10	.36***	-.14	.01	.29***	.51***	.19*			
COORDINATION (X <sub>13</sub> )	4.51	1.21	.06	.28***	-.07	-.15*	.29***	.06	.06	.22**	.16*	.13	.14*	.38***	
UNCERTAINTY × REPLACE (X <sub>14</sub> )	13.62	4.69	-.14**	.76***	-.13*	.07	.47***	.06	.08	.24***	-.09	-.14**	.06	-.05	-.01

\* $p < .10$ .

\*\* $p < .05$ .

\*\*\* $p < .01$ .

**Table 3**  
**ESTIMATED PARAMETERS FOR MODEL<sup>a</sup>**

	<i>SALARY</i> (6)	<i>REPLACE</i> (5)	<i>INVEST</i> (4)	<i>TSA</i> (3)	<i>INPUTS</i> (2)	<i>OUTPUTS</i> (1)
REPLACE	.07 <sup>b</sup>					
REPLACE × UNCERTAINTY	.06 <sup>b</sup>					
INPUTS	.12*					
OUTPUTS	.14*					
UNCERTAINTY	.11					.04
SIZE	-.16**					
SELL	-.25***					.05
RESOURCES	-.25***					
INFORMATION	-.15*					
INVEST		.11				
TSA		.01				
COMPLEX		.25***	.24**	.17*	.24***	.03
COORDINATION		.18**	.03	.07	.16*	.22**
R <sup>2</sup> (adjusted)	.22	.15	.05	.03	.08	.02
F	F(9,120) = 4.71***	F(4,140) = 7.17***	F(2,146) = 4.99**	F(2,146) = 3.16**	F(2,144) = 4.17**	F(4,141) = 2.54**

<sup>a</sup>Note that the difference in sample size for each equation is due to differences in missing data for variables in the equations.

<sup>b</sup>Combined effect of these variables is significant ( $p < .10$ ).

\* $p < .10$ .

\*\* $p < .05$ .

\*\*\* $p < .01$ .

examine the potential impact of this distribution, the model was estimated with a logit transformed dependent variable and also with a restricted sample excluding the observations for straight commission and salary-only compensation.

The patterns of results of these analyses are very similar for the transformed and untransformed dependent variable and for the entire sample and the restricted sample including only mixed compensation plans. In all cases, the signs of coefficients are not affected by the estimation procedure. In the models estimated on the restricted sample, scale economies (SIZE) explains more variance. When the logit transformation is used on the dependent variable, explanatory power is reduced for variables related to transaction-specific assets and difficulty in making a sale.

## RESULTS

This section is organized by dependent variables, starting with the final dependent variable, the role of salary compensation. In each instance, the significant independent variables are noted.

### *Role of Salary*

The estimated parameters of equation 6 provide some support for the use of TCA as a theoretical framework for understanding the role of salary compensation. Because of the high multicollinearity between REPLACE and the interaction REPLACE\*UNCERTAINTY, neither construct is significant; however, each construct is significant ( $p < .10$ ) when it alone appears in the model. In addition, when both variables are introduced into the model their combined effects are significant. Thus, RE-

PLACE and/or its interaction have a positive impact on the role of salary.

In addition to the effects of REPLACE, as suggested by TCA, the role of salary diminishes as it becomes more difficult to assess performance with OUTPUT measures ( $b_{63} = .14, p < .10$ ) and more difficult to use INPUT measures ( $b_{62} = .12, p < .10$ ). However, other key TCA constructs—environmental uncertainty and difficulty with the use of input measures of performance—are not significantly related to the salary variable. In addition, the scale economies arising from organizational SIZE have a negative impact on the role of salary ( $b_{65} = -.16, p < .05$ ). Though this finding contradicts the expectation from the TCA literature as well as the sales management literature, it is consistent with Shapiro's (1977) observation that as organizations grow, the use of administrative control mechanisms becomes prohibitively costly and organizations shift to marketlike control mechanisms.

For the other independent variables, clearly the greatest impact on the role of salary is provided by the variables related to the impact of selling effort on sales. The role of salary decreases as salespeople spend more time on selling activities (SELL) than on nonselling activities ( $b_{66} = -.25, p < .01$ ), as salespeople have more RESOURCES ( $b_{67} = -.25, p < .01$ ), and as customers have greater INFORMATION needs ( $b_{68} = -.15, p < .10$ ). Recall that these variables are unique to the sales management literature and are ignored in the TCA literature.

### *Replaceability of Salespeople*

Examining the parameters of equation 5, we find that level of COORDINATION needs is the only TCA vari-

able that significantly reduces the replaceability of salespeople ( $b_{54} = .18, p < .05$ ). Neither the level of transaction-specific assets (TSA) nor the INVESTMENT in salespeople in the form of training is related significantly to replaceability. However, the sales management variable, COMPLEXITY of the selling task, does reduce replaceability significantly ( $b_{53} = .25, p < .01$ ). Thus, complexity and coordination needs have strong direct effects on replaceability, rather than an indirect effect through the transaction-specific assets and investment variables.

#### *Investment in Salespeople*

The estimated parameters of equation 4 describe the effects of complexity of selling task and the coordination needs on the level of training required by salespeople. Of these two variables, only COMPLEXITY of selling task increases required training time ( $b_{41} = .24, p < .05$ ).

#### *Transaction-Specific Assets*

Equation 3 describes the impact of complexity of selling tasks and coordination needs on the level of transaction-specific assets. Again, only the COMPLEXITY variable significantly increases the level of specific assets ( $b_{31} = .17, p < .10$ ).

Our study differs from previous empirical research investigating the TCA framework in that it explicitly assesses the perceived noncompetitiveness of labor markets (REPLACE), rather than assuming TSA reduces market competitiveness. Consequently, we examine the direct effect of labor market competitiveness and its interaction with uncertainty on governance mode, rather than examining the direct effect of TSA and its interaction with uncertainty (e.g. Anderson 1985). When TSA and  $TSA \times UNCERTAINTY$  are substituted for REPLACE and  $REPLACE \times UNCERTAINTY$  in equation 6, the estimated coefficients for TSA and  $TSA \times UNCERTAINTY$  are not significant at  $p < .10$ . Thus, TSA affects only the choice of governance mode through its impact on the competitiveness of labor markets.

#### *Difficulty with Input Measures of Performance*

In equation 2, we can see that both COMPLEXITY of selling task ( $b_{21} = .24, p < .01$ ) and COORDINATION needs ( $b_{22} = .16, p < .10$ ) significantly affect the difficulty of using input measures of performance. The latter result was not anticipated, but it might be due to coordination of activities producing more sources of information about the level of efforts/inputs undertaken by participants in the team effort.

#### *Difficulty with Output Measures of Performance*

Examining equation 1, we find that COORDINATION needs ( $b_{14} = .22, p < .05$ ) increase the difficulty of using output performance measures. However, environmental uncertainty, emphasis on selling activities, and

complexity of selling task are unrelated to the difficulty of assessing performance with output measures.

## DISCUSSION

### *Descriptive Nature of Study*

Our empirical study simply describes the compensation decisions made by sales managers. Our results do not test directly the normative implications or prescriptions derived from either transaction cost analysis or the sales management literature. Clearly, future research should examine these normative implications. However, the sales managers' model for role of salary may reflect a normative model embodying the sales managers' experience tested by competitive forces in the marketplace. Bowman (1963) suggests managers, through experience, identify the crucial variables associated with a decision and learn how to weigh those variables in making decisions. Thus, experienced managers made good decisions on average, but variance in decisions is introduced by short-term organizational pressures and conditions. Support for this contention is provided in a series of studies in which significant cost savings are achieved by applying a decision maker's model consistently (Bowman 1963; Kunreuther 1969). Hence, though our study does not provide tests of normative prescriptions, the results may indicate indirectly a set of variables that should be considered by managers when they design compensation plans.

### *Usefulness of TCA Framework*

The theoretical basis of our study is TCA. Though the constructs in the TCA framework—ease of replacing salespeople and difficulty in monitoring performance—are related to the use of salary in sales compensation plans, the explanatory power of these constructs is limited. The relative descriptive power of these constructs closely parallels the results reported by Anderson (1985)—monitoring problems seem to be a stronger determinant of governance mode than human TSA.

The variable most strongly related to compensation type—impact of selling effort on sales—is found in the sales management literature but ignored in TCA. In addition, some of the sales management prescriptions have a strong direct effect through the TCA variables. Finally, the low explanatory power of the entire set of variables on the role of salary indicates that neither transaction cost analysis nor the sales literature captures fully the range of variables considered by managers in developing compensation plans. In the following section, we attempt to develop an agenda for future research by presenting an expanded framework for examining the appropriate role of salary versus incentives in a sales compensation plan. To develop this framework fully, we introduce an alternative theory that can be used to investigate sales compensation issues, agency theory, then

compare and contrast TCA, agency theory, and the prescriptions in the sales management literature.

### DIRECTIONS FOR FUTURE RESEARCH

#### *Agency Theory and Salesforce Compensation*

Recently, an alternative theory of salesforce compensation based on agency theory has been developed (Basu et al. 1985). (See Coughlan and Sen 1985 for a review of the sales compensation literature that emphasizes the agency theory perspective.) Agency theory is concerned with deriving an optimal contract between a principal (the firm) and an agent (the salesperson). The principal desires the agent to act in the best interests of the firm, but faces a moral hazard because the firm and the salespeople have different objectives and risk preferences. In addition, the firm cannot assess the effort expended by the agent (e.g., Holmstrom 1979).

In formulating their theory of an optimal sales compensation plan (contract), Basu et al. (1985) assume that (1) the firm can only observe the output of selling effort, (2) the firm is risk neutral and the salesperson is risk averse, (3) the relationship between selling effort and sales (the sales response function) is uncertain but equally known to the firm and the salesperson, (4) the firm has perfect information about the salesperson's utility function, and (5) the firm's objective is to maximize profit whereas the salesperson's objective is to maximize utility (a function of income and disutility for work). On the basis of these assumptions, Basu and his coworkers demonstrate that the portion of salary in the optimal compensation plan is related directly to the uncertainty in the sales response function. As the uncertainty in the sales response function increases, the role of salary increases, shifting the burden of uncertainty from the risk averse salesperson to the risk neutral firm. This "risk-sharing" action helps to align the incentives of the firm and its salespeople.<sup>2</sup>

<sup>2</sup>Though the uncertainty in the sales response curve is not directly assessed here, two constructs related to the sales response function and uncertainty are uncertainty facing sales managers and the impact of selling effort on sales. Uncertainty confronting managers is related directly to response function uncertainty. When the environment is volatile, the uncertainty of salespeople about the relationship between sales generated and effort expended probably increases. However, there are situations in which uncertainty encountered by the firm may not be related to the response function uncertainty confronting the salesperson. The impact of selling effort on sales is related to the slope of the response function, not uncertainty about the slope. However, salespeople may perceive greater uncertainties when response functions have lower margin returns (shallower slope).

On the basis of these assumptions about the relationship between response function uncertainty, uncertainty facing managers, and marginal returns, agency theory prescriptions are similar to those derived from transaction cost analysis. The role of salary should be related positively to uncertainty facing managers and negatively to the mar-

#### *Transaction Cost Analysis, Agency Theory, and the Sales Management Literature*

Table 4 lists the constructs we have identified and indicates the prescriptions of TCA, agency theory, and the sales management literature for these constructs. The plus and minus signs indicate the direction of the prescribed relationship and zero indicates that the theory or literature makes no prescription for the construct.

Note that when a construct appears in the sales literature and the two theories, similar prescriptions are made. However, both the sales literature and the theories address unique factors related to the appropriate type of compensation. The sales management literature is unique in terms of the impact of selling effort on sales and the interest in instilling a long-term orientation in salespeople. Agency theory is unique in its consideration of the risk preference of salespeople and TCA is unique in its consideration of the ease of replacing salespeople and the uncertainty facing sales managers. These differences highlight the limitations of both TCA and agency theory as conceptual frameworks for developing compensation plans.

TCA emphasizes one aspect of the compensation plan—control of sales activities. The variables in TCA indicate when control problems will arise that cannot be addressed through a marketlike incentive control mechanism. However, TCA ignores the motivational aspect of the compensation plan. Though incentives may not be an effective control mechanism in some situations, they do provide a powerful motivating force—a force that is particularly effective when selling effort has a substantial effect on sales.

Agency theory neglects the cost of controlling the salesforce. As uncertainty in the sales response function increases, the role of salary should increase and the degree to which the compensation plan motivates the salesperson to work should decrease. When salary has a major role in the compensation plan, firms usually incur additional costs to monitor the salesperson's inputs. The firm can no longer rely on incentive compensation to prevent shirking. However, these additional control costs are not considered explicitly by the Basu et al. (1985) theory—a theory that assumes salespeople are controlled/motivated solely through compensation.

Thus TCA and agency theory complement each other in terms of providing normative implications for the design of sales compensation plans. Each perspective is

ginal returns associated with selling effort assessed by the impact of selling effort on sales and the difficulty of making sales.

The prescriptions of agency theory, as reflected in the variables assessed in this study, are marginally supported. The impact of selling effort on sales (marginal returns) is related significantly to the role of salary, but environmental uncertainty and the difficulty in making sales are not related to the type of compensation. Clearly, future research must provide a more direct test of the Basu et al. (1985) conceptualization.

**Table 4**  
**COMPARISON OF TRANSACTION COST ANALYSIS, AGENCY THEORY, AND SALES MANAGEMENT LITERATURE**

	<i>Prescribed emphasis of salary in compensation plan</i>		
	<i>Sales management literature</i>	<i>TCA</i>	<i>Agency theory</i>
<i>Control issues</i>			
1. Ease of replacing salespeople (specificity of selling skills)	0	+	0
2. Difficulty in assessing performance with output measures	+	+	0
3. Uncertainty facing sales managers	0	+	0
4. Size of salesforce	+	+	0
<i>Motivation issues</i>			
5. Impact of selling effort on sales	—	0	0
6. Uncertainty facing salespeople	+	0	+
7. Risk aversion of salespeople	0	0	+
<i>Customer-salesperson relationship issues</i>			
8. Desire for long-term orientation	+	0	0

useful for examining a different aspect of the compensation plan. Future research is needed to develop a framework that integrates the two functions of a compensation plan—control and motivation. In addition, neither theoretical framework considers the impact that an emphasis on salary versus incentive compensation may have on salesperson-customer relationships. Only the sales management literature suggests that the type of compensation may affect the degree to which salespeople adopt

a long-term orientation and engage in customer-oriented selling (see Saxe and Weitz 1982).

The framework in Table 4 indicates that the type of sales compensation has complex relationships to salesforce productivity. Our empirical study is a tentative first step in examining some of these relationships. However, considerably more theoretical and empirical research is needed to understand the impact of compensation type on salesforce productivity.

## APPENDIX

### TRANSACTION COST ANALYSIS CONSTRUCTS

	<i>Mean</i>	<i>S. D.</i>	<i>Item-to- total R</i>
<i>Transaction-specific assets (TSA)</i>			
Company procedures compared to other companies' are: <sup>a</sup>			
Simple/complex	3.1	1.6	.58
Fast/slow	3.1	1.7	.52
Standardized/unstandardized	3.4	1.8	.23
Informal/bureaucratic <sup>c</sup>	3.3	1.7	.36
It's hard for a new salesperson in this company to get something done for an account (i.e., expediting shipment, handling claims, etc.) <sup>b</sup>	2.4	1.5	.46
In our company, it helps tremendously if a salesperson has been with us for a while; to know who to see to get something done <sup>b</sup>	4.4	1.8	.37
It takes time for a newcomer to our firm to learn all the ins and outs of our company that a salesperson needs to know to be effective <sup>b</sup>	4.5	1.6	.46
		alpha = .71	
<i>Difficulty with which salespeople can be replaced (REPLACE)<sup>b</sup></i>			
When a salesperson quits, we can easily hire a good replacement <sup>c</sup>	3.5	1.8	.58
We have a difficult time hiring good salespeople	4.3	1.9	.62
		alpha = .79	
<i>Difficulty of assessing performance with inputs (INPUTS)<sup>b</sup></i>			
It is just not possible to supervise these salespeople closely	2.9	1.7	.61
It is difficult to evaluate how much effort any individual in this group really puts into his job	2.8	1.6	.46
We have accurate activity reports for each of these salespeople <sup>c</sup>	2.7	1.6	.25
It is easy for these salespeople to turn in falsified sales call reports if they want to	3.8	2.1	.39
Our evaluation of each salesperson in this group is based on quite accurate information <sup>c</sup>	2.9	1.4	.42
These salespeople travel so much that close supervision is impossible	3.3	1.7	.47
		alpha = .70	

APPENDIX (Continued)  
TRANSACTION COST ANALYSIS CONSTRUCTS

	Mean	S. D.	Item-to-total R
<i>Difficulty in assessing performance using output measures (OUTPUTS)<sup>b</sup></i>			
We can evaluate these salespeople quite well just on sales and cost measures <sup>c</sup>		4.0	1.7
<i>Need for coordination with firm and sales team (COORDINATION)<sup>b</sup></i>			
A considerable amount of our dollar volume comes from team sales (sales made jointly by two or more salespeople)	3.3	1.9	.29
To be effective, a salesperson has to build strong working relationships with other people in our company	5.5	1.5	.64
Salespeople in this group have to work very closely with non-sales employees to close sales	4.1	1.8	.64
These salespeople have to coordinate very closely with other company employees to handle post-sales problems and service	5.3	1.6	.52
Selling strategies used by these salespeople are arrived at through discussions with people from various departments	4.1	2.0	.47
		alpha = .76	
<i>Environmental uncertainty (UNCERTAINTY)<sup>a</sup></i>			
Describe market for products sold by salesforce:			
Stable industry volume/volatile industry volume	3.0	1.2	.42
Sales forecasts quite accurate/sales forecasts quite inaccurate	2.9	0.9	.46
Unpredictable/predictable <sup>c</sup>	2.8	0.9	.52
		alpha = .65	
<i>Salesperson resources (RESOURCES)<sup>d</sup></i>			
The salesperson has a wide range of alternatives to offer the customer	49	29	.35
The salesperson can tailor his/her offerings to match the customer's needs	61	28	.34
The salesperson can be very helpful in terms of assisting the customer in solving his or her problem	74	20	.34
		alpha = .54	
<i>Information needs of customer (INFORMATION)<sup>d</sup></i>			
The customer has not dealt with this product class or requirement before	17	18	.52
The customer seldom purchases this type of product	13	20	.60
		alpha = .74	
<i>Complexity of buying/selling task (COMPLEXITY)<sup>d</sup></i>			
The purchase decision is made quickly <sup>c</sup>	60	28	.72
A number of people are involved in the purchase decision	57	31	.61
The customer needs a lot of information before making a purchase decision	47	29	.69
The customer considers the purchase decision to be routine	60	30	.61
The purchase decision evolves over a long time period	45	31	.79
		alpha = .86	

<sup>a</sup>5-point semantic differential scale.

<sup>b</sup>7-point scale anchored by "strongly disagree" and "strongly agree."

<sup>c</sup>Reversed.

<sup>d</sup>7-point scale: 0, 10, 30, 50, 70, 90, 100%.

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