Understanding Dual Distribution: The Case of Reps and House Accounts

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Plural distribution systems are often found in industrial markets. Although transaction cost analysis has been successfully applied to understanding decisions about distribution systems, these plural forms have been virtually ignored in extant empirical work. Critics suggest that extant transaction cost models are inadequate to study these systems. We contend that transaction cost reasoning can be readily applied to understanding these systems, and undertake an analysis of a common plural form, namely, the simultaneous use of an independent rep system with a company-operated, "house account" system. Familiar transaction cost problems like lock-in (the safeguarding problem), and difficulties in evaluating an independent rep's performance (the behavioral uncertainty problem) are posited to lead firms to deploying house accounts to augment an independent rep system. Using data from a survey of independent agents, we provide preliminary evidence for these predictions. We discuss the implications of our findings for theory and practice.

1. Introduction

Industrial firms often distribute their products simultaneously through multiple channels. For instance, a vertically integrated channel and an independent channel may be used simultaneously. Industry observers have suggested that the use of these dual distribution systems will continue to grow in importance (Corey, Cespedes, and Rangan, 1989), and some have gone so far as to suggest that it will become the dominant design in the 1990s.

In an influential article, Bradach and Eccles (1989) criticized transaction cost analysis (TCA) for its lack of attention to these popular plural forms

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of economic organization.[1] They contend that "by slavishly adhering to the markets and hierarchies framework, [TCA research] ignores the obvious and fascinating issues of why companies so often both make *and* buy" (Bradach and Eccles, 1989: 100, emphasis in original). According to them, understanding plural forms requires accommodating the idea that price, trust, and authority are three basic processes that combine in various ways within organizational forms.

Granting trust coequal status with price and authority does not fit comfortably within the traditional TCA framework. In an extended discussion, Williamson (1993) notes that the calculative approach embodied in TCA has considerable explanatory power, and that incorporating broad notions of trust are not likely to be productive. Nevertheless, it is noteworthy that the empirical TCA work appears to be silent on the issue of plural forms. Data about plural forms appear to have been treated in one of three ways in the extant studies.

First, some studies have simply discarded the observations. For instance, in their study of downstream vertical integration, Anderson and Schmittlein (1984) discarded data on sales territories served simultaneously by independent reps as well as company salespeople. Likewise, Walker and Weber (1984) excluded observations that combined integrated and nonintegrated transactions.

Other studies have not discarded the data but changed the unit of analysis to the outlet level (Brickley and Dark, 1987; Lafontaine, 1992; Shepard, 1993). For instance, Brickley and Dark studied the choice of franchisee-owned versus franchisor-owned outlets as a function of outlet-level variables such as observability. Thus, outlets located further away from the head office would tend to be franchised, while closer-in locations would be company-owned. The final mix of store types is merely the aggregation of the choices made for individual locations. This approach cannot explain a plural form setup where an individual sales territory is serviced simultaneously by an independent sales agent and a company employee. Anderson (1985) describes such territories in the electronics industry.

The third approach involves adopting a "hybrid form" perspective on these data. Assuming a continuum that runs from market to hierarchy, plural form data are viewed as a hybrid mode intermediate between the two poles. For instance, John and Weitz (1988) coded the industrial distribution channels used by the firms in their sample into three categories along this continuum: a market channel category (less than 5 percent direct sales), an intermediate channel category (between 5 and 95 percent direct sales), and an integrated channel category (more than 95 percent direct sales). They documented shifts along the continuum from markets through hybrids to hierarchies commensurate with increases in asset specificity and uncertainty.

As with the outlet-level approach, hybrid forms cannot explain the simultaneous use of two or more forms in the same instance. The John and Weitz

1. Plural forms consist of two or more organizational forms operated "simultaneously for the same function by the same firm" (Bradach and Eccles, 1989: 112). Here we focus on the simultaneous use of two forms (a dual channel).

data obscure this point as their sales data are at the aggregate (firm) level only. To see this clearly, consider a firm in their sample that sold 50 percent of its volume through independent resellers, and the other 50 percent through company-owned distributors. This aggregate split could have arisen in two very different ways. In one case, suppose the volume in each sales territory were derived equally from the independent and the company-owned systems. This is very different from the alternative case where all sales in any one territory are made by one or the other channel type. Multiple forms are used simultaneously in the former, but not the latter case. Yet, the two cases are not distinguished in the John and Weitz market-hybrid-hierarchy scheme.

There is a further distinction between the hybrid approach and the plural form approach. Notice that an increase in the proportion of direct sales moves the hybrid form ever closer to the hierarchical form. Thus, a hybrid form with 90 percent direct sales is not viewed as the same institution as one with 10 percent direct sales; it is more hierarchical. In contrast, the number of different forms employed remains the same (two) regardless of the proportion of sales through one or the other. Conceptually, this distinction is crucial in that further increases in the variables responsible for eliciting a dual system over a unitary market mode should not cause the dual mode to drift toward a hierarchical mode. In contrast, the John and Weitz hybrids drift toward the hierarchical pole with continued increases in specific assets and uncertainty.

Gallini and Lutz's analytic model (1992) of a franchisor's store-mix decision comes closest to the plural forms view. They show that new franchisors will own some stores (despite the lower-powered incentives associated with employee managers) in order to signal credibly to potential franchisees about business prospects. As the franchise system ages, this information asymmetry diminishes, and the mix favors more franchised stores. Although this represents an advance over the previous work, the Gallini–Lutz model is silent about the simultaneous use of a franchised store and a company store to serve the same market. Furthermore, they cannot account for plural forms in the long run. Eventually, all stores will be franchised in their model.

1.1 Goals of this Analysis

Our review shows that plural forms are relatively underresearched, despite their apparent popularity in industrial markets. We propose to add to the literature in two ways. First, we contend that dual forms can be studied with the standard transaction cost lens of identifying safeguards for non-redeployable assets, and providing adaptation capabilities to cope with uncertainties. Unlike Bradach and Eccles (1989), we hold that it is not necessary to invoke trust in order to accommodate plural forms.

Second, we undertake to offer evidence for our conjectures with data about one particular type of plural form found in industrial distribution. Specifically, we examine dual channels whereby firms distribute simultaneously through independent manufacturers' representatives (a "rep" channel) and "house accounts" (a direct channel). This economizes on transaction costs in two ways relative to a rep-only channel. Consider that a rep-only channel must be

governed via the standard market safeguard of competition (termination). This safeguard is undermined when the firm is locked in with an incumbent rep. Introducing house accounts in that rep's territory restores the credibility of the termination safeguard. The second part of our argument holds that performance ambiguity problems with a rep are mitigated with the introduction of house accounts in that rep's territory. House accounts provide performance benchmarks that permit a better assessment of the rep's performance.

The remainder of the paper is organized as follows. Section 2 describes the industrial distribution context. Section 3 develops the empirical predictions. The data collection procedures, analysis and results are detailed in Section 4. Section 5 closes the paper with a discussion of the results and suggestions for future research.

2. Background

2.1 Rep Channels

Manufacturers' representatives ("reps") are essentially sales specialists. They specialize in "outbound" selling, whereby customers are solicited at their place of business. These customer site visits typically involve the reps in a variety of pre-selling and post-selling activities like market intelligence gathering and customer needs assessments. Servicing warranty claims and providing maintenance work also involve the reps, although these tasks may be actually executed by other personnel. It is useful to think of reps as the firm's initial point of contact for the customer. Nevertheless, the reps' principal goal is the sales function, and they are compensated via commissions on realized sales.

A rep organization typically represents several different manufacturers of related products. However, they do not represent manufacturers offering directly competing products. Likewise, reps do not compete directly with other reps of the same firm or with that firm's own sales employees. Thus, exclusive dealing and territory/customer exclusivity hold to a considerable degree.

Parenthetically, it should be noted that these exclusivity arrangements render these channels quite different from the distribution forms commonly associated with in-bound selling. Retail dealers who rely on walk-up sales are far less likely to be granted exclusive territories or to be subject to exclusive dealing requirements. Likewise, industrial procurement and component purchasing patterns are also much less likely to exhibit reliance on sole sourcing (which is roughly equivalent to territorial or dealing exclusivity). In these other settings, dual distribution faces the obstacle that it is confusing to the customer to be solicited by competing reps or employees of the same firm.

Rep channels are used commonly in a variety of industrial markets, including high-tech, capital equipment markets (Corey et al., 1989). Such reps do not fit the stereotype of the smooth-talking traveling salesman; they are quite often college-educated engineers on par with the engineers working for their principals.

Rep channels offer a number of potential advantages. First of all, carrying related product lines from multiple firms enables reps to capitalize on potential scale or scope economies in the selling function. Second, they are compensated

on commissions tied to sales outcomes, which reduces the cost of bureaucratic monitoring and control.

This channel is a classic example of the "high-powered incentives" of market modes (Williamson, 1985). The formal contracts between reps and their principals are short-term, and typically are cancelable at 30 days notice by either party. Despite these short-term contracts, reps represent firms for extended periods, and these agreements may be best thought of as sequential spot contracts.

2.2 House Accounts

House accounts designate customers within a rep's territory who are assigned to an employee sales force. These customers are "off-limits" to the rep. Likewise, the rep's accounts are off-limits to the house-account sales force. Of course, these limitations apply only to the focal product line.

House-account governance is quite different from the rep channel. Unlike reps, the employee sales force typically does not carry products of other manufacturers. Thus, potential scale and scope economies of selling are harder to realize. However, a broader range of hierarchical control mechanisms are available to govern these employees. Internal promotion ladders, salary compensation, and greater supervision and monitoring are all prominent governance features of this channel.

The simultaneous deployment of two channels in a single geographic area is not easy to manage. Reps are wary of the presence of house accounts, and may view them as the prelude to a conversion to a direct sales force (Anderson and Weitz, 1989; Weiss and Anderson, 1992).[2] Nevertheless, these dual structures are observed to persist over long periods of time. We turn now to considering an efficiency rationale for these dual channels.

3. Empirical Predictions

Consider the default choice to be a rep-only channel. Under what circumstances might a firm be prompted to introduce house accounts? Weiss and Anderson (1992) provide an extensive discussion of the TCA issues surrounding reps and house accounts, and we rely on their arguments in several places.

3.1 Incumbency/Lock-in Problems

A locked-in condition exists when an incumbent party to a relationship cannot be easily replaced by a qualified outsider. In our setting, a manufacturer may become locked in with a particular rep as a result of the manufacturer's investments in rep-specific assets. For instance, the manufacturer may have provided training to the reps to sell and service its line, and a new rep would have to be trained over again.[3] Weiss and Anderson's (1992) study of channel conversion

2. A popular "monopoly" explanation for house accounts holds that they enable the firm to skim off the best customers.

3. The difficulties faced by the manufacturer should be distinguished from similar problems faced by reps themselves. Heide and John (1988) showed that reps faced with a lock-in problem on account of their specific investments will safeguard themselves by bonding more closely with their customers.

documents the reluctance of firms to switch from reps to a direct channel on account of these lock-in problems.

From the manufacturers' viewpoint, this locked-in condition is hazardous because it can be opportunistically exploited by the reps. They may demand greater commissions and/or support. Requests for adaptive adjustments may be met with self-serving interpretations of the circumstances.

The classic solution to this problem is to reorganize the transaction with a greater reliance on hierarchy. For instance, Anderson (1985) showed that firms facing locked-in conditions favored forward integration (direct channels) over rep channels. Extending the logic, Weiss and Anderson (1992) contend that house accounts are an initial step in the direction of forward integration. We offer a different interpretation.

We contend that a dual governance system offers a hierarchically assisted solution to trading hazards faced in the rep (market) channel. Specifically, adding a direct sales force to augment the rep channel serves as a safeguard against lock-in problems with the reps. Why?

Essentially, house accounts in a rep's territory reestablish termination as a credible sanction. A direct company presence in the territory makes it clear to the rep that the manufacturer is in a better position to replace the rep if necessary. We do not argue that the manufacturer actually intends to terminate the rep. Rather, the house accounts are a safeguard that allows the firm to continue enjoying the cost and motivational benefits of the rep channel. In effect, one form is needed to use the other (desired) form. In this sense, it is akin to Gallini and Lutz's idea that new franchisors will own some stores as a signaling device, despite the comparative advantages of franchisee-operated stores. One important difference from their signaling idea is that our firms will continue to employ house accounts alongside reps in a long-run sense. To summarize, increased lock-in with a rep will increase the likelihood of house accounts being established in that territory.

3.2 Performance Ambiguity

Performance ambiguity (or internal uncertainty) refers to the degree of difficulty faced by one party in ascertaining the extent to which the other party has carried out contractual obligations, or performed in accordance with a prespecified agreement. This internal uncertainty (Williamson, 1985) creates difficulties for market transactions.

Applied to the present context, reps are involved in a spectrum of sales and nonsales activities, although they are compensated only for realized sales. While realized sales are readily observable, it may be quite difficult for manufacturers to monitor and/or verify the nonsales actions of their independent rep. Furthermore, a firm with no direct link to the market may not even possess the knowledge to judge whether their reps' behaviors are appropriate (Anderson and Oliver, 1987).

As with lock-in, internal uncertainty is problematic because reps can exploit this information asymmetry to their own advantage. A house account in the rep's territory provides a manufacturer with insight into downstream marketing

activities (Stern and El-Ansary, 1992). Using the direct operation as a yardstick enhances the firm's ability to evaluate the performance of the reps in question. For instance, a downturn in sales might be due to economic conditions, rather than a rep's poor performance. With a house account set up in the same territory, the reasons for such variations are more transparent.

A similar yardstick argument applies to efforts to measure customer satisfaction. One of the recognized weaknesses of the rep system is its reliance on commissions for current sales, which gives reps an incentive to push for short-term results over long-term results. Sometimes, firms try to counter this tendency by measuring customer satisfaction via surveys. Some firms are even moving to tie financial bonuses to achieved levels of satisfaction. Customer satisfaction levels are considered to proxy the effects of current efforts on future sales. However, the appropriate target levels of customer satisfaction are difficult to set, and are often contentious issues with reps. The presence of house accounts provides benchmarks for satisfaction target levels. To summarize, greater internal uncertainty with a rep increases the likelihood of house accounts being set up in that territory.

3.3 Other Factors

Although coping with lock-in problems and adapting to internal uncertainty are our primary causal processes, they do not exhaust the range of possibilities. Below, we examine some other causal influences on this decision.

3.3.1 Premiums. Price premiums as a safeguard for unobservable quality was first explicated by Klein and Leffler (1981). Klein and Murphy (1988) argue that the principal reason for using vertical restraints such as exclusive territories or exclusive dealing is to create the possibility of offering channel members a (quasi)-rent stream.[4] Evidence of premiums to ensure performance has been observed in studies of industrial buyers (Rao and Bergen, 1992) and labor markets (Krueger and Summers, 1988). The basic idea is that opportunism can be effectively checked by a sufficiently large premium, which renders the short-term payoff (from opportunism and subsequent termination) less profitable to the agent than the payoff from a continuing stream of premium payments.

Applied to our context, a rep can be offered a premium commission rate such that termination imposes an income loss on that rep. This safeguard is particularly attractive because it is self-enforcing and is administratively less burdensome than the dual-channel setup. It is readily implemented because the system of exclusive territories/exclusive dealing needed to maintain the quasi-rent stream is already in place. If such a premium were paid to reps, it mitigates the need to augment the rep channel with house accounts, all else equal.

4. These premiums are quasi-rents because the firm extracts the rents through franchise fees or their equivalent. The market development efforts of reps can be thought of in these terms.

3.3.2 Scope Economies in Selling. When the downstream selling function is characterized by greater economies of scope, it increases the disincentive to establish a direct channel. Recall that a direct channel is relatively less efficient than the rep channel. It carries only the product line from its parent firm, and the selling costs must be covered by that line alone. In contrast, a rep normally sells complementary product lines, which permits the rep to offer more complete solutions for the customer (Corey et al., 1989). Practitioners claim this efficiency edge to be the most prominent advantage of using a rep channel. A direct channel is handicapped in comparison. Thus, a manufacturer is less likely to use house accounts as potential scope economies in selling are larger.

3.3.3 Relative Setup Costs. We conjecture that the setup costs for house accounts are higher than those for a rep channel. These higher costs are traceable to the company sales force that is needed to call on customers in a house account system. Deploying a direct sales force entails more complex information systems for implementing salary plans (Weiss and Anderson, 1992), and a much larger number of sales supervisors are needed relative to a rep channel. In contrast, the absence of career ladders, together with a total reliance on sales-based commissions, render a rep system a much leaner operation with respect to management overhead. All else equal, increases in these costs should delay the use of house accounts, and vice versa.

These setup costs are proxied by the following measured variables. (It should be noted that these variables capture shifts in the relative sizes of the setup costs, and not the magnitude of the costs themselves. Thus, they provide an indirect test of the idea that house accounts will be delayed by these costs.)

Existing direct sales force. The larger setup costs of house accounts are overcome more easily if the manufacturer already sells other products directly in the same geographical area. The existence of a direct sales operation for other products in a geographical area permits the firm to share the existing sales management and information functions. This reduces the incremental setup costs associated with establishing house accounts for the focal product line.

Unit value. Large unit-value items like capital equipment are thought to be better candidates to be sold directly, while supplies and other low-unit-value items are better sold through indirect channels (e.g., Corey et al., 1989). The logic is that it is not worthwhile to deploy a direct channel with high fixed costs to sell "nickel and dime" items. This would suggest that house accounts ought to be observed more often in equipment markets than in markets for supplies/maintenance items. We think this prediction is problematic, because it confounds unit value with size of order. After all, a large order for items with a low unit value can be bigger than an order for a single piece of equipment.

There is also a transaction cost argument lurking here. Selling capital equipment arguably demands more significant human asset specificity than does selling supplies/maintenance items (Anderson, 1985). To the extent that this increases the bond between the customer and the rep (Heide and John, 1988), it is more difficult for the manufacturer to replace the agent with a house account,

if the need arises. This reasoning suggests that firms are less likely to use house accounts as a safeguard in high-value equipment sales.[5] On account of these opposing tensions, we refrain from a specific prediction.

Account Size. Observers of industry practice note that house accounts are often deployed against larger customers and/or denser territories (Reeder, Brierty, and Reeder, 1991; Corey, 1991). This observation is consistent with a setup cost argument. Recall that direct channels have relatively higher setup costs. Hence, they are likely to be deployed only in those territories where these setup costs can be defrayed. Such territories are precisely those with relatively large accounts. It is not the characteristics of large accounts that matter so much, as the total volume in a geographic area.

4. Data

4.1 Data Collection Procedures

Because we require data on subtle aspects of the rep-manufacturer relationship, it is highly unlikely to find good proxies for these variables solely from sources such as accounting records. Hence, we collected data through a combination of subjective responses and recorded data. We mailed a questionnaire to owners/managers of a sample of rep agencies. These owners/managers served as our *key informants* (Campbell, 1955).

Prior to the questionnaire mailing, extensive field interviews were conducted with reps in the target industries. Our interviews showed that these individuals were very knowledgeable about the relevant issues, including the presence of manufacturers' direct sales forces in their territory. A pretest of the questionnaire was conducted by having a dozen owner/managers of rep agencies fill out the questionnaire in the presence of the researcher. Ambiguities in the wording and meaningfulness of questions were assessed through interviews with these informants. Based on this pretest, the final questionnaire was developed.

4.2 Sample

The Manufacturers' Agent National Association (MANA) directory served as the sampling frame. This directory is a listing of rep agencies in a variety of industries, and represents the most comprehensive listing of such firms. This directory is routinely used by manufacturers to locate potential reps. The directory is divided into a number of industry categories, which superficially resemble two-digit Standard Industrial Classification (SIC) categories. We used two categories (electrical-technical and mechanical) as our sampling frame. Using a systematic random sampling procedure, we generated 400 names from each category.

4.3 Response Rate

Of the 800 questionnaires mailed out, 199 useable ones were returned, yielding a response rate of 25 percent, comparable to those achieved in similar

5. We thank an anonymous reviewer for providing this insight.

distribution-channel studies. One way to assess nonresponse bias is to compare the sample means to known population values. However, we lacked access to any known population values for these variables. Instead, we used the technique popularized by marketing researchers (Armstrong and Overton, 1977) for such situations. Here, the sample is divided into an early-responder group and a late-responder group. Assuming that late responders are more like nonresponders, the early and late groups are compared to assess any differences. No significant differences were found in our comparison. It appears that the data are reasonably free of nonresponse bias.

4.4 Description of Measures

In the questionnaire, the rep informants were first asked to identify their largest principal (in terms of commission income). To reduce the potential for error, we requested that our informants complete the questionnaire with respect to this focal principal because this relationship should be highly salient to them. Indeed, the field interviews showed this to be the case.

The concepts described earlier were measured through a number of proxies, involving both recorded data and subjective judgment. Psychometric practice recommends using multiple measures of concepts to increase reliability and validity. Of course, this was not practical for the more concrete, observable concepts. For instance, average account size is difficult to operationalize meaningfully in any way other than the arithmetic average computed from the sales accounting records. Of the nine concepts, six did not lend themselves to multiple measures. The other three variables were measured using Likert-types scales. Of these, two were measured with two items apiece, one was a single-item measure. In the case of the two multi-item measures, we formed composite scales from the individual items, as described later.

4.4.1 Dual Channels (DUAL). Our dependent variable is a dichotomous measure indicating whether a manufacturer employs a unitary (reps only) or a plural system (combination of reps and house accounts) in a particular territory. The informants recorded on the questionnaire whether the focal manufacturer was currently selling the same product line directly in their territory. The specific wording was as follows: *Does this principal currently have house accounts in your area? (Yes/No).* The responses were coded as follows: 0 = reps only, 1 = reps plus house accounts.

Notice that this measure does not record the relative volume going through the rep and direct channels. It is a count of the number of different types of channels used (one versus two), which is consistent with our conceptual view of plural forms as the *number* of governance forms used simultaneously in a given territory. This contrasts with the hybrid viewpoint, which would require capturing the position along the market-hierarchy continuum. This latter view would require a measure of the ratio of use of the two channels, such as was developed in the John and Weitz (1988) study.

4.4.2 Incumbency/Lock-In (INCUMBENCY). We reasoned that if the manufacturer were locked in to the incumbent rep, the manufacturer would find it hard to replace this rep with another capable rep, and also find it difficult to recruit a new rep. Accordingly, the informants responded to two items on a seven-point response format ranging from "Strongly Disagree" (1) to "Strongly Agree" (7). The first item was: *"If this manufacturer terminated us, they could easily find another capable agent."* The second item was: *"It is not difficult for this manufacturer to recruit good reps in this territory."* The responses were reverse coded for the data analysis so that a high number reflects more lock-in problems for the manufacturer.

4.4.3 Performance Ambiguity (AMBIGUITY). The difficulty/inadequacy of evaluating the rep's performance using standard output measures was obtained on the same seven-point response format. The first item was: *"This manufacturer can easily evaluate our performance on sales figures."* The second item was: *"This manufacturer can easily supervise our operations, if needed."* The responses were reverse coded so that a high score reflects a greater degree of performance ambiguity.

4.4.4 Premium (PREMIUM). The premium for good-faith behavior was proxied by the deviation of the reported commission rate from the average commission rate for the sampled rep agencies in the same MANA category. Recall that we sampled from two MANA categories in the directory. We reasoned that the average commission rate within a MANA category represents the going rate in that line of business, and that commissions above the mean were indicative of premiums being paid.

4.4.5 Scope Economies in Selling (SCOPE). We asked the informants to estimate the degree to which the product line of the focal manufacturer was complemented by the product lines of the other manufacturers they represented. Selling related items should reduce selling costs, and possibly enhance one-stop shopping possibilities. Thus, complementarities between the product lines should proxy scope economies in selling. The actual item was worded as follows: *"To what extent do your other product lines help you sell this principal's products?"* They responded to this item on a seven-point response format ranging from "Does Not Help" to "Does Help."

4.4.6 Existing Direct Sales Force (OTHERDIRECT). The magnitude of the incremental setup cost of deploying house accounts was proxied by the presence or absence of a company-operated sales operation for other products in this rep's sales territory. The wording is straightforward: *Does this principal currently sell other products directly in your area? (Yes/No).* The responses were coded as follows in the data analysis: 0 = no other products sold directly, 1 = other products sold directly.

4.4.7 Unit value (UNITVALUE). The unit value of the focal product line is proxied by an equipment/supplies dichotomy. Albeit crude, this nevertheless captures the differences in unit value quite effectively. It should be noted that rep agencies selling equipment typically would also sell supplies for that equipment, but our classification depends on the primary focus of the agency. Thus, such firms would still be classified as equipment sellers. In the data analysis, the coding was as follows: 0 = Supplies, 1 = Equipment.

4.4.8 Account size (ACCTSIZE). The average size of the rep's accounts is constructed from sales and account data reported by the informants. The total sales of the focal product line is divided by the number of accounts to obtain this measure.

4.5 Description of Sample

The average rep agency in the final sample represents 11 principals, while employing 5 people consisting of managers, salespeople, and clerical staff. They generate an average annual sales volume of $3.6 million. Their commissions average $255,000 per year. Of this total, 43 percent is accounted for by their focal (largest) principal. They sell this principal's products to 123 accounts in their territory.

Most importantly, these rep-principal relationships are long-lived, stable exchanges. On average, they have represented this principal for 12.5 years. The downstream rep-customer relationships are also long-lived. The average age of the rep's accounts for this principal is 10.4 years. The stability of the relationships in our data is particularly encouraging since our predictions assume stable dual setups.

4.6 Measure Reliability

A practice commonly used to increase the reliability of questionnaire scales is to use multiple items for each construct. In our questionnaire, two key independent variables (lock-in and rep performance ambiguity) are measured with two items apiece. This enables us to employ confirmatory factor analysis to assess the convergence of our measures, and to compute their reliabilities.

A maximum-likelihood estimation of a two-factor model finds an adequate fit to the data, as evidenced by an insignificant χ^2 value ($\chi^2(1) = 0.1, p > .05$). Furthermore, the "loadings" of the items on their respective trait factors are all significant and large in size: 0.86 ($t = 5.3$) and 0.84 ($t = 5.3$) for the two lock-in items, and 0.70 ($t = 2.8$) and 0.47 ($t = 2.6$) for the two performance ambiguity items. The internal consistency of these items, computed using Joreskog's formula, yields construct reliabilities of 0.84 and 0.52 for lock-in and performance ambiguity, respectively (see Table 1). The latter is somewhat low, and flags a note of caution. We summed the items for each construct, and used these composite scale values in the subsequent logit model analysis.

Table 1. Confirmatory Factor Analysis of Scale Items

Items (y_{ik})	Factor Loading INCUMBENCY (λ_{i1})	AMBIGUITY (λ_{i2})	Error Variance Var (ε_{ik})
y_{11}	0.86 ($t = 5.30$)	0.0 (fixed)	0.26 ($t = 1.0$)
y_{21}	0.84 ($t = 5.28$)	0.0 (fixed)	0.30 ($t = 1.20$)
y_{12}	0.0 (fixed)	0.70 ($t = 2.77$)	0.50 ($t = 1.44$)
y_{22}	0.0 (fixed)	0.47 ($t = 2.64$)	0.78 ($t = 4.45$)

χ^2 (1 d.f.) = 0.10 ($p > 0.05$)
Reliability for INCUMBENCY = 0.84
Reliability for AMBIGUITY = 0.52

Note: Each scale item is assumed to fit a congeneric model; viz. the scale item consists of trait and random error. Hence, $y_{ik} = \lambda_{ik} f_k + \varepsilon_{ik}$, where y_{ik} represents the value of item i for construct k, λ_{ik} is the "loading" of that item on its construct, f_k is the (unobserved) value of the construct k, and ε_{ik} is the random error term in that item. Here, we have two items for each of two constructs. The model was estimated using maximum-likelihood procedures, and the construct reliabilities calculated from the estimates.

Table 2. Binomial Logit Model

Independent Variable	Hypothesis	Coefficient	T-value
Constant	n/a	−4.79	−2.09**
INCUMBENCY	+	0.33	2.04**
AMBIGUITY	+	0.52	1.56*
PREMIUM	−	−2.36	−0.51^{ns}
SCOPE	−	−0.25	−1.44*
OTHERDIRECT	+	3.45	5.48**
UNITVALUE	?	−2.66	−4.04++
ACCTSIZE	+	−0.22 E-06	−0.10^{ns}

X^2(7 d.f.) = 70.63, $p < .01$
Correct classification rate: 83%

Note: The dependent variable is channel form (DUAL); the reference category is a unitary system (reps only). $N = 164$.
**$p < .05$ (one-tail)
*$p < .10$ (one-tail)
++$p < .05$ (two-tail)
^{ns}not significant

4.7 Model Estimation and Results

We estimated a binomial logit model using maximum likelihood procedures. The dependent variable is the channel form (unitary versus dual), and the independent variables are the measures described above. The coefficients in Table 2 can be interpreted as the effect of increases in the independent variables on the likelihood that a firm will add house accounts to augment a channel consisting entirely of reps. The expected sign of each coefficient is shown in the table.

The chi-square statistic (χ^2(7 d.f.) = 70.63, $p < 0.01$) allows us to reject the null hypothesis that all of the estimated coefficients are jointly zero. The model correctly classifies 83 percent of reps-only setups and 82 percent of the dual setups. The overall hit rate is 83 percent. While these appear to be

satisfactory hit rates, a stronger test of the model's predictive ability is afforded by comparing these hit rates with the proportional chance criterion suggested by Morrison (1969). This latter benchmark was computed as 69 percent, which is well below our hit rates.

Clearly, the model has good predictive power, and it appears to be a reasonable basis for examining the individual parameters. In assessing the significance of individual coefficients, we use one-tail tests when a directional prediction is tested and a two-tail test when no prediction was made.

We find that both incumbency (INCUMBENCY) and performance ambiguity (AMBIGUITY) significantly increase the probability that a dual channel will be used ($t = 2.04$, $p < .05$ and $t = 1.56$, $p < .10$, respectively). These are our central predictions.

Turning to the other factors, we find that premiums paid to reps (PREMIUM) have no statistically significant effects ($t = -0.51$, $p > .10$). The proxy for scope economies (SCOPE) shows the expected negative influence on house accounts ($t = -1.44$, $p < .10$).

Recall that three measures proxied setup costs of house accounts. We find that the presence of an existing direct sales operation for other products in this territory (OTHERDIRECT) shows the expected positive influence on augmenting the rep channel with a direct channel ($t = 5.48$, $p < .01$). The second of the setup cost variables was the unit value measure (UNITVALUE). Recall that no directional prediction was advanced because of conflicting expectations. Using a two-tail test, we find a significant negative coefficient ($t = -4.04$, $p < 0.05$). Thus, reps selling supplies are more likely to face house accounts than are reps selling equipment. This is consistent with the idea that selling products with a high unit value entails more human asset specificity. This increases the bond between the reps and their customers. Consequently, it is more difficult for the manufacturer to introduce a direct channel.

The third proxy for setup cost was the average size of the rep's accounts (ACCTSIZE). This had no significant effect on the decision to augment the indirect channel with house accounts ($t = -.10$, $p > .10$).

5. Discussion

To the best of our knowledge, this is the first empirical effort to address the simultaneous use of multiple governance forms. As we concluded from our review, these forms have been largely overlooked in the TCA literature. Even when they are not ignored, neither the hybrid form nor the outlet heterogeneity explanations advanced are capable of addressing plural forms like the rep plus house account channels studied here.

Although we are sympathetic to the Bradach and Eccles (1989) position that plural forms merit more attention, our analysis departs from them in a very important way. While they contend that trust is integral to understanding plural forms, it is not developed to the point where the refutable implications are disclosed. In contrast, TCA invites operationalization, and we rely on standard transaction cost concerns about safeguarding and adapting to uncertainty to predict when firms will use a unitary form (reps only) versus a plural form (reps

plus house accounts). Our results show preliminary support for the ability of the transaction cost model to order the patterns in the data. Apparently, trust is not a necessary variable to explain plural forms. Of course, this does not preclude the possibility that the Bradach and Eccles position will be developed further to disclose its refutable implications.

We have some suggestions for future work that arise out of the limitations of the current study. To begin, it is important to recognize that our empirical effort does not account for investments, safeguards, and price/cost being simultaneously determined. Our research design accommodates a much more modest goal. We simply seek evidence that the anticipated correlations in the data are present. Although we utilize a logit formulation to verify our predictions, the statistical estimates from the logit model are best construed as "stylized facts" rather than precise estimates of structural relationships.

In this respect, the study offers support for our idea that house accounts arise out of the need to safeguard the rep channel against the erosion of the termination sanction, and to provide benchmarks to better assess rep performance. However, the crudeness of our measures must be kept in mind. In particular, the lock-in and performance ambiguity constructs are quite complex, and our two-item scales do little justice to their domains. The lock-in measure would have been improved by tapping into specific assets directly. Moreover, the reliability of the performance ambiguity measure is low. Clearly, more work with different and better measures is needed to establish the robustness of our results.

Perhaps the most significant limitation of our data is the absence of the other unitary form, viz. all house accounts. Our reasons for omitting these data are straightforward. It would have entailed mounting a separate, parallel survey aimed at manufacturers. This is not only expensive, but adds the methodological complication that the data about this other unitary form are confounded with the biases of the informants from the manufacturers. A more congenial context for such a study would be an industrial purchasing decision where buyers engage in buy-only, make-only and make-plus-buy choices.

We would encourage future studies to collect such data, because they would address gaps in our results. Recall that we found that increased exchange difficulties in the rep form led to the addition of house accounts. Notice that a hybrid view would make the same prediction. Suppose however, that we could show a symmetric effect, that is, that increases in exchange difficulties with a "house account only" channel lead to the addition of reps. Notice that while such an effect is still consistent with a plural form approach, it would be inconsistent with a hybrid approach with its single continuum of governance types. Data including all three forms would thus afford a cleaner separation of hybrid form effects from dual form effects.

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