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Understanding Effects of Customer Assignment to Outside or Inside Salespeople

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FINAL REPORT

1. Introduction

Business-to-business (B2B) reselling is undergoing a sea change. The distributors, wholesalers, and specialized resellers that comprise this $6 trillion sector of the U.S. economy (U.S. Census Bureau 2019) face the existential threat of 'Amazonification'—the shift in customer preferences toward streamlined, efficient, and digital modes of exchange when purchasing the off-the-shelf and standardized products that dominate this space (Erbé and Banerjee 2018). Born-digital competitors such as Amazon Business and innovative legacy players like Grainger continue to expand their capacities to efficiently serve a wide range of business customers, rapidly commoditizing the work of many established resellers (MDM 2016).

These established resellers have begun to adapt to 'Amazonification' and meet digital-age customer needs, notably by augmenting their sales force with a more efficient *inside* (remote) sales channel—commission-based account representatives that are separate from telemarketing (Zoltners et al. 2013). Unlike in solutions-based sales contexts where the inside sale channel often plays a support role (e.g., lead generation), inside salespeople are now crucial account managers for resellers; for a set of assigned customers, these inside salespeople often hold sole responsibility for managing interpersonal relationships, handling special orders, recommending products and add-on services, and other typical account management tasks (Hedges 2015, Ingram et al. 2017). At the same time, the traditional value of relationship-building, face-to-face interaction in this sector has maintained the primacy of the *outside* (field) sales channel for other customer accounts (Rapp et al. 2012, Larsen 2018).

In an effort to capitalize on the specialized advantages of both the emerging inside sales channel and the established outside sales channel, resellers deploy each channel to different customers—typically based on distinct phases of the relationship lifecycle (ZS Associates 2014). In doing so, sellers face the challenge of *migrating* (handing off) customers between the two sales channels as relationships progress

across lifecycle phases (Pickard 2017, Rapp et al. 2012). For example, firms like Airgas and O'Neal Steel initially assign customers to outside salespeople, and then migrate them to inside salespeople as the account grows (an *outside–in* migration). Schneider Electric and Cardinal Health, on the other hand, do the opposite and assign inside salespeople to start, migrating customers to outside salespeople later (an *inside–out* migration). This research aims to investigate the reseller financial performance implications of these migrations.

1.1 Motivation to Study Sales Channel Specialization Strategies

Faced with the question of how best to manage the specialized roles of inside and outside sales channels, practitioners provide diverging answers. The most popular method, the *cost-matching strategy*, involves matching short-term revenues with short-term costs based on the developmental phase of the account's lifecycle, ensuring investments in sales resources exceed a threshold rate of return (Seley and Manasco 2016). For *less developed* customer accounts—those that are far from their revenue potential—sellers deploy inside salespeople as a form of "low-cost nurturing," reserving costlier outside salespeople for *more mature* accounts—those closer to achieving their revenue potential (Larsen 2018, Mills et al. 2018).

Competing with this cost-matching strategy is a *relationship-driven strategy*. Like the cost-matching strategy, this approach is based on the account's lifecycle; however, instead of aligning costs with revenues, this approach aligns communications (remote and face-to-face) with the needs of the customer to support the success of the relationship (Arli et al. 2018, Zoltners et al. 2013). The 'high touch' approach of outside sales, with its unique capability of face-to-face communication, can promote expansion of less developed accounts while inside salespeople efficiently meet ongoing needs of more mature accounts—with effects on revenue and costs that play out over an extended period as the customer uses the new channel (Seley 2015). Whether the cost-matching or relationship-driven strategy generates greater top- and/or bottom-line outcomes for the seller—and whether this advantage persists over time—remains ambiguous.

Extant empirical research does not resolve this ambiguity. A sparse literature (e.g., DeCarlo and Lam 2016, Shi et al. 2017) broaches the subject of customer migrations between salespeople, but only within the same sales channel (vs. between inside or outside sales channels), and only subject to

salesperson-level contingencies (vs. customer-level, relationship lifecycle-based contingencies). Extant research thus offers sellers little insight into enacting a sales channel specialization strategy via inside–out or outside–in migrations. Therefore, we examine the revenue and profit outcomes of outside–in and inside–out migrations for less developed and more mature customer accounts.

1.2 Research Questions and Contributions

Our focal research question is: *What are the seller financial implications of outside–in and inside–out customer migrations*? As noted, empirical research in this area is lacking and practitioner views are divergent. We address this gap with a theoretical framework grounded in media richness and relationship marketing (Daft and Lengel 1986, Zhang et al. 2016), two large-scale quasi-experimental field studies in collaboration with a *Fortune 500* industrial reseller, and a scenario-based experiment with diverse B2B buyers. In Study 1, we examine outside–in migrations with 5,640 customers that either remain with an outside salesperson or are migrated to an inside salesperson. In Study 2, we assess inside–out migrations with 1,041 customers either remaining with an inside salesperson or migrating to an outside salesperson. These studies complement one another, with the pattern of effects across studies enabling distinct attribution of outcomes to the customer's shift between the inside and outside channels—rather than the disruptive effects of migrations in general, which would produce consistent outcomes across the studies. To account for both relationship effects and cost efficiencies, the outcomes of interest are the seller's customer-level sales revenue and customer-level net profit. We address threats to internal validity using appropriate procedures to account for endogeneity in a difference-in-differences framework. Study 3 focuses on the implementation of an outside–in migration across diverse customers and enhances causal inference by randomly assigning buyers to experimental conditions. Our rigorous approach to addressing this research question resolves diverging views from practice and answers calls to understand the evolving roles of the inside and outside salesperson channels in B2B exchange (Arli et al. 2018, Mantrala and Albers 2012, Moncrief 2017).

Second, we ask: *How do the immediate (short-term) and delayed (longer-term) effects of outside–in and inside–out migrations differ*? Extant research suggests that outcomes of sales management strategies

do not always immediately manifest, but instead may evolve over time in complex ways (Ahearne et al. 2010a, Shi et al. 2017). We find that the cost differential between inside and outside sales dominates in the short term, seemingly in line with the cost-matching strategy (migrating accounts from inside to outside as they become more mature). However, the theorized relationship communication attributes of inside and outside sales channels, especially communication richness and frequency, appear to drive shifting cost and revenue effects as the customer's time with the new channel increases. Contrary to the cost-matching strategy, we discover that outside–in migrations expand longer-run revenue and profit for more mature accounts, while inside–out migrations are more successfully deployed toward less developed accounts.

These findings provide actionable recommendations for practice by demonstrating immediate and delayed effects of migrations between sales channels at different phases of the relationship lifecycle. We find that for less developed customer accounts, a migration to the inside channel initially increases profit by as much as 54% but these profit gains are erased one year following the migration due to foregone revenue expansion and a gradual loss of cost efficiencies, ultimately resulting in decreased profit. Conversely, migrating less developed customer accounts to the outside channel generates a nearly *tenfold* profit increase ($1,163 greater profit) one year after the migration, despite initially harming profit, thanks to the combination of a growing revenue advantage with a diminution of surplus costs. For more mature accounts, migrations to the outside channel result in immediate profit losses due to the shift to a costlier sales resource, and these effects accelerate over time. However, migrating more mature accounts to the inside channel increases monthly sales and profit one year after the migration—an advantage supported by rapidly growing cost savings.

Thus, we find that migrating less developed accounts to the outside channel, and more mature accounts to the inside channel, appears to better meet the needs of these customers and generates more profit for the seller. Our two studies converge to suggest that sellers should assign customers to the outside channel to start and then migrate customers to the inside channel after they reach maturity—in other words, the relationship-driven strategy. This approach is contrary to accepted wisdom among a large segment of practitioners, which holds that higher-cost outside sales resources should be matched with higher-revenue,

more mature accounts (e.g., Larsen 2018, Mills et al. 2018, Zhang et al. 2016 p. 20). The cost-matching approach *appears to miss opportunities to grow revenue with less developed accounts and to disproportionately increase expenses with more mature accounts*.

2. Conceptual Development

2.1 Relationship to Past Work

By examining the financial implications of sales channel migrations, our research delves into the intersection of two literatures: (1) inside and outside salesperson channels, and (2) customer reassignment between salespeople. We elucidate how our investigation builds upon each of these literatures, as summarized in Table 1.

— Table 1 about here —

2.1.1. Inside and outside salesperson channels. Extant literature in sales force management and industrial marketing has considered sales organizations' deployment of inside and outside salespeople. Early work speculated that inside salespeople should supplement the field sales force by conducting service tasks and handling smaller accounts (e.g., Boyle 1996, Narus and Anderson 1986). However, contemporary perspectives acknowledge that today's inside and outside salespeople often hold equal relationship management responsibilities (Green 2013, Ingram et al. 2017, Zoltners et al. 2013). 75% of sellers deploy inside salespeople with discrete ownership of their accounts; the architect of a *Fortune* 100 inside sales operation asserts, "It is outdated to think of inside sales as a junior, script-reading selling organization" (ZS Associates 2014, pp. 5, 6). More recent research (e.g., Rapp et al. 2012, Rutherford et al. 2014) has explored how salesperson- and firm-level factors influence the effectiveness of inside and outside salesperson channels, generating useful insights.

We depart from past research in this domain in three key ways. First, rather than focusing on salesperson roles (e.g., Narus and Anderson 1986), or firm characteristics that influence the effectiveness of sales structures (e.g., Rapp et al. 2012), our substantive focus is on the seller's financial outcomes of

migrating a customer between inside and outside salespeople. Second, in contrast to extant firm- and salesperson-level analyses (e.g., Rutherford et al. 2014), our investigation is at the customer level—a necessary condition for answering our central question of *when* in a customer relationship a migration should occur. Finally, whereas past work in this domain has built a foundation of knowledge on conceptual ruminations (e.g., Mantrala and Albers 2012) and survey research (e.g., Rapp et al. 2012), we expand on this foundation with a set of two longitudinal quasi-experimental field studies, better supporting causal attributions.

2.1.2. Customer reassignment between salespeople. A more limited literature has addressed the reassignment of customers from one salesperson to another. Richardson (1999) discusses reassignments implicitly, as a mechanism for the effect of sales force turnover on sales and customer defection. Bendapudi and Leone (2002) as well as Shi et al. (2017) establish that the departure of a salesperson can have negative consequences for the seller's relationships with that salesperson's customers. DeCarlo and Lam (2016) discuss, but do not empirically examine, the practice of moving *newly acquired* customers from hunter-reps to farmer-reps in any sales channel.

Our work builds on past literature on customer reassignment in terms of three critical facets. First, prior research has examined reactive, within-channel reassignments resulting from salesperson turnover (e.g., Bendapudi and Leone 2002); that is, the seller selects a salesperson to take over and mitigate losses after a relationship is severed. In contrast, we investigate *proactive, cross-channel* migrations between inside and outside salespeople, intended to allocate the appropriate salesperson channel to the current phase of the customer relationship. Second, whereas past work tests salesperson-level contingencies of reassignment outcomes (e.g., Shi et al. 2017), our customer-level contingency—account development—allows us to address the tension between the cost-matching and relationship-driven migration strategies. Finally, extant literature in this domain has examined a variety of outcomes, including customer attitudes and sales (e.g., Bendapudi and Leone 2002, Richardson 1999). To account for both revenue expansion and cost efficiencies associated with outside–in and inside–out migrations, we assess effects on both customer-level net profit and customer-level sales revenue.

2.2 Theoretical Background

We seek to understand how the seller's top-line (revenue) and bottom-line (net profit) outcomes of outside–in and inside–out migrations are contingent upon customer account development, evaluating both the short-run cost and revenue considerations associated with the cost-matching migration strategy and the longer-run emphasis of the relationship-driven strategy. We first elucidate baseline short-run effects of outside–in and inside–out migrations, before considering contingencies grounded in media richness and state-based relationship marketing theories.

2.2.1. Short-run cost and revenue mechanisms: disruption and media richness implications. The cost differential between inside and outside sales is a subject of frequent discussion in sales management theory and practice. Field sales calls are costlier, in large part motivating the rise of inside sales forces (Cannon and Homburg 2001, Gessner and Scott 2009). Inside salespeople are believed to reduce account management expenses 50%–90% (Cron and DeCarlo 2009, Zoltners et al. 2013). This cost advantage arises because inside salespeople do not incur expenses associated with travel, and do not have to be paid a premium for the personal inconvenience of frequent trips away from home (Moncrief 2017). Regardless of when in a customer relationship a migration occurs, an outside–in migration will, in the short run, decrease the seller's costs associated with the customer account while an inside–out migration will increase costs. Sellers adopting a cost-matching strategy are driven largely by this cost differential, only assigning outside salespeople to an account when its revenues are sufficiently developed to sustain the costs of field sales (Larsen 2018).

Outside–in and inside–out migrations also have immediate implications for customer-level revenue. Migrating a customer risks interfering with the exchange relationship (Bendapudi and Leone 2002). Arli et al. (2018, p. 12) wonder whether customers can "switch between outside and inside sellers without disrupting the relationship," but the precise implications of this disruption for customer demand are unclear.

Also unclear are the short-term revenue ramifications of the change in communication modes following a sales channel migration. Media richness theory holds that different modes of communication

vary in their ability to resolve uncertainty (Daft and Lengel 1986, Daft et al. 1987). Modes of communication with customers, such as advertising and salespeople, can reduce uncertainty through *rich* information (Joshi 2009, Mohr and Nevin 1990). Face-to-face communication is the richest mode, enabling many subtle cues such as body language, facial expressions, and effortless interaction with the environment (such as for product demonstrations) (Daft et al. 1987). Face-to-face communication can therefore convey complex information and resolve ambiguity to an extent that tools such as Skype have thus far been unable to replicate (Vlahovic et al. 2012). Communication via remote channels such as email or telephone is leaner (i.e., less rich), featuring a narrower array of cues to minimize the customer's uncertainty (Murphy and Sashi 2018). However, remote channels counterbalance this relative lack of richness with instant accessibility, resulting in greater *frequency* of communication (Gensler et al. 2012, Neslin et al. 2006).

Inside salespeople exclusively use remote channels, while outside salespeople communicate with customers through a combination of face-to-face and remote contact. Thus, an outside–in migration represents a shift in the relationship's communication mix toward leaner and more frequent modes, while an inside–out migration moves to richer and less frequent channels. The implications of such shifts may be positive for some relationships and negative for others—and may not take immediate effect—clouding short-run effects (Hitt and Frei 2002, Joshi 2009). Therefore, short-run outcomes of outside–in and inside–out migrations are characterized by uncertain short-run revenue outcomes and relatively certain cost effects (reduced cost for outside–in, increased cost for inside–out).

2.2.2. Customer relationship contingencies: state-based relationship marketing. The key to addressing the diverging cost-marching versus relationship-driven strategies is understanding *when* in a customer relationship an outside–in or inside–out migration should occur. Consistent with media richness theory, a change in communication mix due to migration may have a positive effect in one relationship phase but a negative effect in a different phase (Mohr and Spekman 1994, Joshi 2009).

We tie media richness to state-based relationship marketing theory to develop a more formal understanding of relationship-based heterogeneity in migration outcomes. The state-based relationship marketing framework (Zhang et al. 2016) describes customer-seller relationships along a continuum of

relational states from less developed to more mature. At a given point in time, a seller's portfolio of accounts comprises customers with stronger relationships (and financial outcomes closer to the exchange's potential), as well as weaker relationships (and financial outcomes further from the exchange's potential). The customer's needs differ dependent upon which state it is in, such that sellers "should allocate resources according to changing relational" states (Arli et al. 2018, p. 180). The idea of allocating channel resources based on customers' heterogeneous and shifting needs—rather than cost-matching—is central to the relationship-driven customer migration strategy.

With less developed accounts, exploration is vital as the customer engages in intensive learning about the seller's offerings through search and experimentation (Zhang et al. 2016). This exploration entails a great deal of uncertainty (Jap and Ganesan 2000); therefore, less developed accounts likely benefit from the aforementioned rich forms of communication, uniquely suited to resolving uncertainty (Daft et al. 1987, Mohr and Nevin 1990). The seller may obtain increased revenue from an inside–out migration of less developed (rather than more mature) accounts. By the same token, an outside–in migration of such a customer mismatches the communication mix with customer needs, possibly leading to dissatisfaction (Joshi 2009) and potentially higher costs as the customer demands offsetting value-added services.

More mature accounts, on the other hand, are generally characterized by reduced uncertainty, a need for maintenance rather than exploration, and regular contact to manage the extensive exchange portfolio between the two firms (Dwyer et al. 1987, Zhang et al. 2018). For such exchanges, the customer's needs may well be met by the leaner, but more frequent, remote communications of inside sales (Mantrala and Albers 2012, Thomas 2013). The seller will therefore likely see enhanced revenue from an outside–in migration of a more mature (rather than less developed) account. Similarly, an inside–out migration of a more mature account will not match the customer's needs, potentially leading to dissatisfaction and greater costs as the customer demands more value from the supplier.

Taken together, the implications of media richness theory and the state-based relationship marketing framework contravene the guidance of the cost-matching strategy and suggest that outside–in migrations should yield greater revenue and lower costs from more mature (i.e., more developed) accounts,

while inside–out migrations likely see a revenue and cost advantage from less developed accounts. In other words, the level of *customer account development* (less developed versus more mature) will interact with outside–in and inside–out migrations in driving seller financial outcomes.

2.2.3. Immediate vs. delayed effects: acclimation following disruption. The prevalent cost-matching strategy is primarily focused on short-term considerations, yet longer-term effects of migrations are not well understood. Business-to-consumer research suggests that a customer's behavior changes over time following the shift to a new communication or purchasing channel as the customer learns the costs and benefits of that channel, with delayed top- and bottom-line implications for the seller (Avery et al. 2012, Pauwels and Neslin 2015). Further, the aforementioned disruption associated with migrating existing relationships need not persist over time; disruption effects typically exhibit an initial impact followed by an adaptation period, during which the effect may strengthen or even reverse (Ahearne et al. 2012). In an interfirm exchange context, state-based relationship marketing theory predicts that disruptions—such as shifts to a new channel—have evolving effects on relationship expansion or contraction as the customer and seller acclimate (Zhang et al. 2016). The effects of migrating less developed and more mature accounts will therefore play out differently as the customer's time with the new channel increases.

Practitioners have reported substantial immediate effects of inside sales migrations on expenses (Zoltners et al. 2013). Yet the seller's costs can shift in the months following a migration, as initial disruptions to the relationship subside and the customer navigates the new channel and acclimates to different communication methods (Hitt and Frei 2002). Consider a customer dissatisfied with a migration due to the inconvenience of disrupting an existing rapport with the salesperson; the seller may initially incur costs from this customer's demands for extra services to offset this perceived slight. However, if the new sales channel ultimately better meets the customer's needs—such as an inside–out migration matching the exploration needs of less developed accounts—these demands (and costs) may subside over time as the customer adjusts to the new channel and appreciates its unique benefits.

Similarly, relationship-based revenue effects can play out over time as the customer uses the new channel. Extant research suggests that changes in a relationship—such as its communication mix—will not

be immediately apparent in the seller's revenue; rather, the relationship may adjust for months before tangible effects manifest (Netzer et al. 2008, Zhang et al. 2018). As noted, an inside–out migration supports exploration behaviors for a less developed account. Exploration inherently requires an investment of time (Dwyer et al. 1987); sellers are unlikely to see a payoff from this activity within mere weeks of a migration.

Therefore, both the cost and revenue advantages of matching the sales channel with the relationship's needs—outside with less developed accounts, inside with more mature (i.e., more developed)—will evolve over time, with extant research suggesting they should become *more* dramatic as the customer's time with the new channel increases. In other words, the customer's *length of time with the new channel* (i.e., time since migration) will interact with outside–in and inside–out migrations, potentially in different ways for less developed and for more mature customer accounts.

3. Empirical Framework for Studies 1 & 2

We investigate our research questions in the context of a collaborating *Fortune* 500 reseller of industrial products. This seller provides off-the-shelf goods, special orders, and value-added services (e.g., drop-shipping, vendor-managed inventory).[1] This research context is appropriate in light of the special threat that the trend of "Amazonification" poses to sellers of off-the-shelf and standardized products (MDM 2016), while also being comparable to sales contexts examined in prior B2B research (e.g., Käuferle and Reinartz 2015, Roy and Cohen 2017, Wiesel et al. 2011).

3.1 Data Collection

Our investigation consists of two separate quasi-experimental field studies conducted with the collaborating seller (Figure 1). In Study 1, customers assigned to an outside salesperson either remain with the outside salesperson or migrate to an inside salesperson (outside–in). In Study 2, customers assigned to an inside salesperson either remain with the inside salesperson or migrate to an outside salesperson (inside–out). These migrations are detailed in §4 and §5. We collected a monthly panel of customer archival data from

[1] The identity of the reseller is protected by a non-disclosure agreement.

the seller's transaction, CRM, and activity-based costing databases twelve months before and after the migration events.

— Figure 1 about here —

3.2 Measurement

Both studies employ the same measurement approach, differing only in the nature of the treatment (outside–in or inside–out) and in the specific customers examined (those initially assigned to outside or those initially assigned to inside). Our focal outcome variables are the seller's *sales revenue* and *net profit* from a customer in a given month. Net profit is computed as sales minus cost of goods sold, less any operating expenses attributable to the customer. These operating expenses are allocated according to the seller's activity-based costing system and include customer-level sales force expenses based on the extent of customer-salesperson contact and the cost-per-contact of the inside or outside salesperson. Both financial outcome variables were rescaled for confidentiality.

We mitigate potential threats to internal validity arising from confounding factors and omitted variables bias using several control variables from the seller's archives (as well as a control function approach, detailed subsequently). We include *salesperson dummy variables* for each salesperson in the study to account for potential differences in sales ability and motivation. We also control for the influence of long-tenured customers or those with greater purchasing power by incorporating *customer tenure* in days, as well as *customer purchasing potential*, operationalized via the customer's credit limit with the seller. A customer's credit limit is calculated and updated by an internal finance department. This department uses data from third parties to evaluate the purchasing power and creditworthiness of the customer, determining the maximum amount that the customer would be able to purchase from the seller in a month.

Our primary interaction term of interest is the seller's degree of *account development* with the customer, as observed by the seller in the period prior to the migration decision, where higher development represents an exchange closer to achieving its potential (i.e., more mature). Account development is, by definition, tied to the customer's share of wallet with the seller, which may experience both peaks and troughs at various relational states—in contrast to relationship length, for example, which increases in a

fixed linear fashion (Zhang et al. 2016). Customer share of wallet in business-to-business contexts is typically captured with subjective "strength of position" ratings or objective quasi-share-of-wallet-metrics (Anderson et al. 2006, Ingram et al. 2017). To avoid potential systematic bias in subjective ratings, we adopt the latter approach, computed as the average monthly sales in the 12-month pre-migration period divided by the customer's credit limit. This time-invariant measure captures the extent to which the customer's purchasing portfolio with the seller (sales prior to the migration) has approached its potential (credit limit as detailed in the preceding paragraph). Capturing this variable prior to the migration enables the evaluation of cost-matching and relationship-driven strategies, which both base migration decisions on the seller's information at hand prior to the migration.

To assess divergent immediate versus delayed effects of the migration at the customer level, we include an additional interaction term: the length of *time*, in months, that the customer has used the new channel following the migration. This variable is centered at a value of one month after the migration, such that effects at low values of time indicate immediate outcomes, while those at high values of time capture delayed outcomes. We summarize the variables and measures for both studies in Table 2.

— Table 2 about here —

4. Study 1: Outside–In Migrations

4.1 Methodology

The objective of Study 1 is to determine how the immediate and delayed effects of an outside–in migration depend on the level of customer account development when the migration occurs. An ideal experiment to assess outcomes of this migration would involve taking a sample of customers currently assigned to outside salespeople, and then randomly assigning each customer to either remain with the outside salesperson or be migrated to an inside salesperson. In practice, this ideal experiment is not feasible because sellers are naturally unwilling to disrupt existing personal relationships with customers on a purely random basis.

Instead, we approximate the ideal experiment with a quasi-experimental difference-in-differences

approach. In the treatment period, the seller migrated 1,880 customers from an outside salesperson to an inside salesperson. We account for non-randomness in the assignment decision by explicitly modeling the seller's process for assignment to the treatment group (see §4.2, §5.2). We evaluate the change in revenue and profit for these customers in the pre- vs. post-treatment periods and compare this change with a control group of 3,760 customers who remained with an outside salesperson during the entire observation window. Consistent with prior research (e.g., Shi et al. 2017), we construct this control group as a stratified random sample of customers numbering twice that of the treatment group. Customers in the control group were randomly selected to represent the same mix of industries and geographic areas as the treatment group.[2] Combining the treatment and control groups, the Study 1 sample comprises 74,751 monthly observations across 5,640 customers.

4.2 Empirical Model

We estimate a difference-in-differences model of customer migrations, while accounting for two threats to causal inference: non-randomness in assignment to the outside–in migration and non-randomness of the newly assigned salesperson. Importantly, we account for the non-random treatment assignment using a two-step control function approach (Ghosh and John 2009, Saboo et al. 2016).

Full modeling details may be found in Appendix A. In brief, we specify the following models where the difference-in-differences lower and higher order terms (i.e., *OutsideInTreatment*, *PostPeriod*, *OutsideInTreatment* × *PostPeriod*) are represented by the vector *DD*:

$$\begin{aligned}\text{NetProfit}_{it} = {} & \beta_{0i} + \sum_{m=1}^{3} \beta_{0+m}\text{DD}_{it,m} + \beta_4\text{AccountDevelopment}_i + \beta_5\text{Time}_t + \sum_{p=1}^{3}(\beta_{5+p}\text{DD}_{it} \times \\ & \text{AccountDevelopment}_i)_p + \sum_{r=1}^{3}(\beta_{8+r}\text{DD}_{it} \times \text{Time}_{it})_r + \sum_{v=1}^{4}(\beta_{11+v}\text{DD}_{it} \times \\ & \text{AccountDevelopment}_i \times \text{Time}_{it})_v + \sum_{w=1}^{2} \beta_{15+w}\text{Controls}_{it,w} + \beta_{18}\text{IMR}_i + s_{2i} + c_{2i} + \varepsilon_{2it}.\end{aligned} \quad (2)$$

$$\begin{aligned}\text{SalesRevenue}_{it} = {} & \gamma_{0i} + \sum_{m=1}^{3} \gamma_{0+m}\text{DD}_{it,m} + \gamma_4\text{AccountDevelopment}_i + \gamma_5\text{Time}_t + \sum_{p=1}^{3}(\gamma_{5+p}\text{DD}_{it} \times \\ & \text{AccountDevelopment}_i)_p + \sum_{r=1}^{3}(\gamma_{8+r}\text{DD}_{it} \times \text{Time}_{it})_r + \sum_{v=1}^{4}(\gamma_{11+v}\text{DD}_{it} \times \\ & \text{AccountDevelopment}_i \times \text{Time}_{it})_v + \sum_{w=1}^{2} \gamma_{15+w}\text{Controls}_{it,w} + \gamma_{18}\text{IMR}_i + s_{3i} + c_{3i} + \varepsilon_{3it}.\end{aligned} \quad (3)$$

[2] Although this stratified random sampling results in a control group with similar characteristics to the quasi-treatment group, this is not a formal matching procedure. We employ a control function approach to account for non-randomness of assignment to the treatment group (Appendix A).

For customer *i* in month *t*, *OutsideInTreatment* is a dummy variable reflecting whether the customer was migrated (=1) or remained with the outside salesperson (=0), and *PostPeriod* is a time-varying dummy indicating whether a month falls before (=0) or after (=1) the migration. *Controls* is a vector of control variables including *CustomerPotential* and *CustomerTenure*, while s_{2i} and s_{3i} represent the salesperson dummy variables. *IMR* is the inverse Mills ratio from the first-stage control function equation, and c_{2i} and c_{3i} are customer random effects capturing unobserved customer-level heterogeneity. Finally, because error terms in multi-period difference-in-differences models may be serially correlated, we estimate clustered robust standard errors (Chib and Greenberg 1995). Outcome and control variables are scaled for confidentiality and summary statistics are provided in Table 3, Panel A.

— Table 3 about here —

4.3. Results and Robustness Tests for Outside–In Migrations

Equation 1 and 2 estimation results are presented in Table 4 (net profit) and Table 5 (revenue). Under a difference-in-differences specification, the coefficient for *OutsideInTreatment* × *Post-Period* indicates the effect of the Outside–in treatment on the treated. This effect is positive on net profit ($\beta = 59.21$, $p < .10$) despite being negative on revenue ($\gamma = -640.84$, $p < .05$). This indicates short-run effects of an outside–in migration consistent with some amount of relationship disruption offset by cost savings.[3] Marginal effects analyses further reveal that an outside–in migration has a significant and positive effect on net profit one month after a migration across the ±1 standard deviation range of account development (Figure 2A).

— Table 4, Table 5, Figure 2 about here —

Because our research emphasizes how the delayed effects of customer migrations depend on the level of account development, we focus our attention on the higher order interaction terms. The interaction *OutsideInTreatment* × *Post-Period* × *AccountDevelopment* is positive on both profit ($\beta = 275.87$, $p < .05$) and revenue ($\gamma = 1045.94$, $p < .05$) indicating an immediate top- and bottom-line advantage when migrating more mature customer accounts to the inside sales channel. This advantage for more mature accounts is

[3] Because *Time* is centered at a value of 1 month since the migration, the *Treatment* × *Post-Period* term may be understood as a short-run effect.

evident in the difference between the 'More Mature' and 'Less Developed' lines in Figures 2A and 2B. Results from marginal effects analyses confirm that this interaction remains significant—for both profit and revenue—for all 12 months following the migration.

Finally, the interaction *OutsideInTreatment* × *Post-Period* × *AccountDevelopment* × *Time* is positive and significant on net profit ($\beta = 214.87$, $p < .05$) and sales revenue ($\gamma = 62.98$, $p < .10$), indicating that the effect of the migration becomes increasingly positive for more mature accounts, and increasingly negative for less developed accounts, as the customer's length of time with the new channel increases. Put differently, the positive interaction effect with account development becomes more dramatic over time. The growing disparity between the 'Less Developed' and 'More Mature' lines in Figure 2 illustrates this effect. The initially positive profit effect of outside–in migrations for less developed accounts becomes *negative* in later months, while the positive profit effect for more mature accounts only grows larger (Figure 2A).

To test the robustness of our findings, we estimated Equations 2 and 3 under two alternative specifications. First, we estimated the model without including the inverse Mills ratio—that is, without accounting for non-random assignment to the treatment. Second, we estimated the model without including the salesperson dummy variables. In both cases, the sign and statistical significance of each substantive result (DD, DD × AccountDevelopment, DD × AccountDevelopment × Time) matches those reported in Tables 4 and 5. Thus, our findings appear robust to the idiosyncratic features of our chosen specification.

4.4. Outside–In Migrations (Study 1): Post Hoc Analyses and Discussion

To more fully evaluate the implications of our findings for the cost-matching and relationship-driven customer migration strategies, we analyze the difference between the marginal sales revenue and net profit effects. We perform this computation in each of the 12 months following the migration, and for both less developed (-1 standard deviations) and more mature (+1 standard deviations) customer accounts. The result is a 12-month cost effect trend line associated with outside–in migrations for less developed and more mature accounts (Figure 3).[4]

[4] We do not conduct separate estimation on cost because it is linearly dependent on our two outcome variables (sales revenue and net profit).

— Figure 3 about here —

The cost-matching approach is predicated on the need to deploy cost-saving inside salespeople to lower-revenue, less developed accounts (Mills et al. 2018, Seley and Manasco 2018). A seller newly adopting this approach would realign its sales force, migrating less developed accounts to the inside sales channel. Our results imply that such migrations may be ill-advised. Figure 3A demonstrates that cost savings of $662/month shrink by 85% to $100 over time, accounting for the reversal of the migration's profit effect from positive to negative. These shrinking cost savings are consistent with less developed customer accounts needing richer communications to resolve the ambiguity involved in exploring the interfirm relationship. Migrating to a leaner communications channel creates a mismatch with the customer's needs, leading to greater costs for the seller due to the need to provide customers more frequent communication or value-added services.

The relationship-driven strategy is based on avoiding such mismatches, aligning the sales channel with the customer's relationship state (Zoltners et al. 2013). Under this approach, sellers migrate more mature accounts to the inside sales channel to meet maintenance needs. Our results directly support this strategy. Figure 3B shows that the initial cost savings of an outside–in migration for a more mature account, $200/month, *grow* by 221% to $641 over 12 months, complementing top-line effects to drive a $1,204/month long-term profit effect.

Study 1 corroborates the relationship-driven customer migration strategy by finding positive profit, revenue, and cost outcomes of migrating more mature customer accounts to inside salespeople. It also undermines the core premise of the cost-matching strategy by suggesting that the cost savings of inside sales accrue primarily to more mature accounts, while fading over time for less developed accounts. These implications yield two key questions. First, are these outcomes due to the characteristics of the outside versus the inside sales channel as theorized, or merely due to the nature of *any* sales channel migration of a customer relationship? Second, is there merit in the central recommendation of the cost-matching strategy—migrating more mature accounts to outside salespeople? We address these questions in Study 2.

5. Study 2: Inside–Out Migrations

In Study 2, we assess how the effects of a customer's migration from an inside to an outside salesperson depend on the level of account development and the customer's length of time using the new channel.

5.1 Methodology

The quasi-experimental methodology of Study 2 is parallel to that of Study 1. In the same treatment period, simultaneously with the outside–in migrations, the seller migrated 347 customers from an inside salesperson to an outside salesperson. We compare the change in profit and sales revenue for these customers in the pre- vs. post-treatment periods to the change for a control group of 694 customers who remained with an inside salesperson during the entire observation window. As in Study 1 and consistent with prior work (e.g., Shi et al. 2017), the control group consists of a stratified random sample of customers, numbering twice that of the treatment group. Customers in the control group were randomly selected to represent the same mix of industries and geographic areas as the treatment group. Across the treatment and control groups, the Study 2 sample consists of 12,240 monthly observations across 1,041 customers.

5.2 Empirical Model

The same threats to internal validity from Study 1 apply to Study 2; hence, Study 2 employs the same modeling strategy, including difference-in-differences estimation with a control function to account for non-random customer assignment to the treatment group. In Study 2, the *InsideOutTreatment* variable replaces Study 1's treatment variable. We provide summary statistics in Table 3, Panel B, and full modeling details may be found in Appendix A.

5.2 Results and Robustness Tests for Inside–Out Migrations

Study 2 estimation results appear in Table 4 and Table 5. The coefficient for *InsideOutTreatment* × *Post-Period* is positive and significant on sales revenue ($\gamma = 515.15$, $p < .05$) but negative and significant on net profit ($\beta = -375.61$, $p < .05$), consistent with the substantial immediate cost of deploying an outside

salesperson.[5] The immediate positive effect on revenue is possibly due to the perceived higher status of being assigned a more costly sales resource (e.g., ZS Associates 2014). Analysis of marginal effects shows that an inside–out migration has a significant and negative effect on net profit one month after a migration across the ±1 standard deviation range of account development (Figure 4A).

— Figure 4 about here —

The higher order interaction terms involving *InsideOutTreatment* × *Post-Period* capture the theorized heterogeneity in the migration effect. The interaction *InsideOutTreatment* × *Post-Period* × *AccountDevelopment* is nonsignificant on profit ($\beta = 73.77$, $p > .10$) and revenue ($\gamma = -361.22$, $p > .10$) indicating that, at least initially, an inside–out migration's effect does not diverge across less developed and more mature customer accounts. Marginal effects analyses, however, reveal that this interaction becomes significant and negative in later periods (months 2 through 12) for profit.

Finally, the interaction *InsideOutTreatment* × *Post-Period* × *AccountDevelopment* × *Time* is negative on both profit ($\beta = -499.04$, $p < .05$) and revenue ($\gamma = -367.99$, $p < .05$), indicating that the effect of the migration becomes increasingly negative for more mature accounts, and increasingly positive for less developed accounts, as the customer's time with the new channel increases. The negative interaction effect with customer account development becomes more dramatic over time. This effect is particularly evident in the divergence of the 'Less Developed' and 'More Mature' lines in Figure 4A. Although both less developed and more mature accounts initially see a negative profit effect from inside–out migrations, this effect becomes *increasingly negative* over time for more mature accounts while turning positive for less developed accounts.

To test the robustness of our findings, we estimated the model under two alternative specifications—without the inverse Mills ratio, and without the salesperson dummy variables—parallel to the procedure detailed in §4.4. The sign and statistical significance of each substantive result (DD, DD × AccountDevelopment, DD × AccountDevelopment × Time) matches those in Tables 4 and 5 for both tests,

[5] Because *Time* is centered at a value of 1 month since the migration, the *Treatment* × *Post-Period* term may be understood as a short-run effect.

providing evidence that our findings are robust to the idiosyncratic features of our chosen specification.

5.3 Inside–Out Migrations (Study 2): Post Hoc Analyses and Discussion

To consider how our results inform the cost-matching and relationship-driven approaches to customer transactions, we replicate the post hoc analysis performed following Study 1, constructing 12-month cost effect trend lines associated with inside–out migrations for both less developed and more mature customer accounts (Figure 5).

— Figure 5 about here —

The central recommendation of the cost-matching approach is that customers should not be migrated to the outside sales channel until they have established more developed exchanges with the seller, such that the customer generates sufficient revenue to offset the cost of deploying an outside salesperson to that account (Larsen 2018). Study 2 provides a direct test of this strategy, and the results are not favorable. Migrating a more mature account to an outside salesperson does not significantly affect revenue during the 12-month post-migration period (Figure 4B). However, the inside–out migration immediately generates incremental costs of $682/month, which grow a further 48% to $1,009 over time and lead to a significant and negative long-run profit effect of –$1,274/month (Figure 5B).

Conversely, a seller newly adopting a relationship-driven strategy would realign its sales force to ensure that less developed accounts' needs are met by migrating such customers to the outside sales channel. Our results corroborate the notion that this channel's communications suit the needs of less developed accounts. The surplus costs attributable to assigning a less developed account to the outside sales channel, initially totaling $878/month, shrink over the 12-month post-migration period by 37% to $556 (Figure 5A). These diminishing surplus costs combined with growing revenue advantages contribute to a significant and positive long-run profit effect of $1,163/month.

These results further contribute to the complementarity between Studies 1 and 2 as the findings across the two are mutually supportive. For example, the seller's net profit outcome from migrating a more mature account from inside to outside (negative and declining, Figure 4A) is the reverse of its profit outcome from an outside–in migration of the same account (positive and growing, Figure 2A). This implies

that the observed pattern of effects results from the unique characteristics—such as communication richness and frequency—of inside and outside sales channels, rather than attributes that are shared by any change of sales channel (such as relationship disruption). Study 2 also aligns with Study 1 by directly contradicting the cost-matching approach, showing highly negative long-run profit effects of inside–out migrations for more mature accounts, and further corroborating the relationship-driven approach, showing positive revenue and profit implications of matching a richer sales channel with less developed accounts.

6. Study 3: Exploring Migration Implementation Strategies

Studies 1 and 2 provide valuable insights into how outside–in and inside–out migrations play out over time, depending on how far the account has been developed. However, individual accounts may have heterogeneous responses to migration, depending on customer characteristics. In Study 3, we focus on the outside–in approach—supported by both prior studies—and employ an experimental methodology to assess the cost implications of this migration across different types of customers.

We focus on a customer characteristic that reflects the prevalence of routine and noncomplex situations and is therefore likely to be relevant when implementing the inside sales channel for these accounts. Specifically, when the customer emphasizes *rebuy purchasing* (repeat purchases of the same products and services, rather than new or modified purchases) this entails low complexity tasks with simpler decision processes; hence, the customer seeks to complete routine transactions quickly and effortlessly (Wilson et al. 1991).

6.1 Experimental Design

We conducted an experiment featuring an IT hardware purchasing scenario with a 2 (sales structure: migration to inside vs. no migration) × 2 (rebuy purchasing: low vs. high) between-subjects design. 209 experienced B2B buyers were recruited by a major survey panel provider and randomly assigned to the four conditions.

First, participants were told to "Envision that your employer has given you authority to make

important purchasing decisions. Your company, C-Corp, frequently needs to buy computers and other office technology products. Your company buys many of these products from a supplier called QZS-Tech." The subsequent salesperson migration manipulation included visuals to remind participants of the inside and outside sales roles. Notably, salesperson-initiated contact was held constant using a description of the salesperson's typical outreach frequency in the scenario (see Web Appendix A for all manipulations). Next, they received the rebuy purchasing manipulation, in which either nine (high rebuy) or one (low rebuy) of the month's ten orders were for products previously purchased by the participant's firm. It should be noted that, in Study 3, the outside–in migration was operationalized without the removal of the outside salesperson from the relationship. That is, both salespeople remained with the account after the migration. This manipulation was designed to capture the customer's preferences for contacting the inside salesperson immediately following the transition, without artificially forcing all contact towards this salesperson. Manipulation checks held for migration ($M_{migration} = 7.57$, $M_{no\text{-}migration} = 5.53$, $p < .01$) and rebuy purchasing ($M_{high\ rebuy} = 7.04$, $M_{low\ rebuy} = 5.56$, $p < .01$).

6.2 Measures

Purchase intentions and manipulation checks were operationalized with 9-point Likert scales (see Appendix B for all measures). Monthly outside salesperson contact and monthly inside salesperson contact were each computed based on three numerical inputs: time talking to the salesperson to place orders, to return and exchange products, and to get an important discount. This three-part, task-based approach was employed (instead of a more general measure) to elicit more grounded responses based on a specific and realistic set of monthly tasks in a scenario where rebuy purchases are feasible. Further, by measuring the customer's preferred contact pattern, we isolate these preferences, rather than by salesperson-level influences.

First, immediately after the rebuy manipulation, participants were asked to estimate how many minutes they would need to spend talking to each of their assigned salespeople (or only their outside salesperson for respondents in the no-migration condition) to place their ten monthly orders. Second, they were informed of the need to return and exchange some products from last month's orders and were once again asked to estimate the time needed with each salesperson to accomplish this. Finally, they were

informed that they would also need to seek a discount to match a competitor's price this month and were once again asked how much time would be needed with each salesperson to achieve this. These three measures were summed to indicate preferred monthly contact with each salesperson.

6.3 Results

We conduct a 2 × 2 ANOVA separately for outside salesperson contact and inside salesperson contact (Table 6, Panel A). For outside contact, the main effect of the migration ($F(1, 205) = .89$, $p > .10$) was not significant. However, the main effect of rebuy purchasing ($F(1, 205) = 6.16$, $p < .05$) and its interaction with the migration ($F(1, 205) = 8.62$, $p < .01$) were both significant. For inside contact, the main effect of sales structure ($F(1, 205) = 76.22$, $p < .01$), the main effect of rebuy purchasing ($F(1, 205) = 3.65$, $p < .10$), and their interaction ($F(1, 205) = 3.36$, $p < .10$) were all significant.

To more precisely evaluate differences between each condition, we conduct key contrasts (Table 6, Panel B). First, we compare outside salesperson contact for high-rebuy participants in the no-migration condition ($M = 163.35$) to the same in the migration condition (119.39) and find a significant difference ($F(1, 205) = 7.08$, $p < .05$). In other words, with high rebuy purchasing the added inside sales contact from migration comes with a reduction in outside sales contact; this demonstrates that these types of customers' needs are better met by the inside, rather than the outside, salesperson. Second, we compare outside salesperson contact for low rebuy participants in the no-migration condition ($M = 156.42$) to the same in the migration condition (183.22) and find no significant difference ($F(1, 205) = 2.33$, $p > .10$). With low rebuy purchasing, the added inside sales contact from migration does not come with reduced outside sales contact. This demonstrates that such customers have a weaker preference for shifting towards the inside salesperson and that implementing an outside–in migration for such customers will be more challenging.

— Table 6 about here —

Finally, to test mediated effects on purchase intentions, we conduct moderated mediation analysis based on Hayes PROCESS Model 58. This model incorporates two mediators (inside and outside salesperson contact) and allows the moderator (rebuy purchasing) to operate on both sides of the mediator. Standardized path coefficients appear in Table 6. Rebuy purchasing interacts negatively with the migration on outside

sales contact (b = –.79, p < .01), but positively on inside sales contact (b = .43, p < .10). Rebuy purchasing also interacts with salesperson contact on purchase intentions (rebuy purchasing × inside sales contact: b = .38, p < .05). To better understand this mediated path, we follow past research (Zhao, Lynch, and Chen 2010; Hofstetter et al. 2021) and test the conditional indirect effects of the migration. At a low level of rebuy purchasing, neither the direct effect of the migration (direct effect = –.04; 95% confidence interval [CI] = [–.26, .17]), nor the indirect effect via outside sales contact (indirect effect = .05; 95% CI = [–.02, .13]), nor the indirect effect via inside sales contact (indirect effect = –.07; 95% CI = [–.29, .10]) on purchase intentions are significant. However, at a high level of rebuy purchasing, the indirect effect of the migration via inside sales contact becomes significant and positive (indirect effect = .35; 95% CI = [.18, .51]) while the other paths remain non-significant; an outside-in migration increases purchase intentions via its effect on inside sales contact, to a far greater extent when rebuy purchasing is high. These findings demonstrate customer heterogeneity in the ease of implementing a relationship-driven sales channel specialization strategy, and suggest that managers should monitor both overall metrics of account development as well as more specific purchase behaviors, when determining the account's needs.

7. Discussion & Managerial Implications

B2B resellers employ sales channel specialization, deploying inside and outside sales forces discretely to customers across different phases of the relationship lifecycle (Rapp et al. 2012, ZS Associates 2014). These strategies necessitate handoffs, but sellers disagree on when and how migrations between channels should be enacted (Larsen 2018, Seley 2015). Through two large-scale quasi-experimental field studies and one scenario-based experiment, we directly address this uncertainty and generate several key implications for marketing theory and practice.

7.1 Implications for Practice

Our findings inform sales channel specialization by challenging the widespread practice of cost-matching—assigning lower-cost inside salespeople to lower-revenue customers (i.e. less developed accounts), and

higher-cost outside salespeople to higher-revenue customers (i.e., more mature accounts; Mills et al. 2018, Seley and Manasco 2016). Study 1 demonstrates that the cost savings of inside sales accrue primarily to more mature customer accounts, growing by 221% in the 12 months following the assignment to inside sales, while these savings virtually disappear (85% reduction in savings) for less developed accounts over the same period (Figure 3). Study 2 directly tests a key recommendation of the cost-matching approach—migrating more mature accounts from inside to outside—and reveals worsening cost increases and profit reductions over time (Figures 4B and 5B).

Conversely, our results suggest that the relationship-driven strategy has merit. Study 2 demonstrates that the surplus costs of assigning an outside salesperson to a less developed account—an apparent disadvantage of the relationship-driven approach—decline by 37% over a 12-month period, concurrent with an increasingly positive revenue effect (Figure 5A). Meanwhile, Study 1's test of migrating more mature accounts from outside to inside—matching the sales channel with the needs of the relationship—uncovers beneficial cost and profit effects that only improve over time (Figures 2B, 3B). Study 3 finds that this strategy is particularly aligned with customer preferences as buyers' needs shift towards more routine, rebuy purchasing.

Thus, our findings run counter to the cost-matching approach and lead us to recommend the relationship-driven customer migration strategy; richer sales channels should be matched with *less* developed accounts. These implications apply equally to the management of ongoing exchanges under a relationship-driven migration strategy (i.e., migrating an account when it becomes more mature) and to sales organizations newly implementing a relationship-driven migration strategy—necessitating migrations of both less developed and more mature accounts to realign sales channels with customers' needs. We arrive at these conclusions only by considering both *immediate* and *delayed* effects of customer migrations. For example, while a manager may initially deem favor assigning a less-developed account to the inside sales channel due to immediately increased profits, the same manager would come to a drastically different conclusion examining effects at least four months out from the migration (Figure 2A). These findings reinforce the need for sellers to consider both short- and long-term effects of sales channel deployment

strategies (Ahearne et al. 2010a, Ahearne and Lam 2012).

More generally, we inform evolving perspectives on the role and scope of inside and outside sales forces. Our results lend greater weight to the assertion that, "It is outdated to think of inside sales as a junior, script-reading selling organization" (ZS Associates 2014, pp. 6). We find that inside sales is an incredibly powerful tool, even when handling more mature customer accounts. Despite this power, dire predictions regarding the decline of outside sales (e.g., Roff-Marsh 2015) appear alarmist. As one consultant notes, "[o]utside sales reps still have important contributions to make, and it is essential that they are not displaced in the name of ease or cost savings" (Pickard 2017). We reveal that the outside sales channel is especially critical in accelerating revenue expansion with less developed accounts, while incurring substantially less surplus costs in the context of these relationships. Our research therefore provides recommendations that are actionable under the widespread practice of operating discrete outside and inside sales channels (ZS Associates 2014), rather than suggesting a radical shift in favor of one channel or the other.

7.2 Implications for Theory

Our novel implications for practice, which take into account differences between less developed and more mature accounts as well as effects that play out over time, are informed by the dynamic (state-based) relationship marketing framework (Zhang et al. 2018). Prior work has applied this framework to understand how high-level relational constructs such as trust and commitment contribute to the development of, and influence the effectiveness of, marketing strategies in various relational states (Akrout and Diallo 2017, Zhang et al. 2016). In contrast, we test the implications of this framework for the effectiveness of customer-level sales channel migration decisions. In doing so, we answer calls to better integrate marketing theories, both classic and contemporary, with marketing practice (Kumar 2017). Our findings directly speak to the need to consider the state of the relationship when migrating customers between inside and outside sales channels. The state-based relationship marketing framework also describes specific mechanisms such as "neglect" and "exploration," events and patterns of behaviors that enable the relationship to move from a less developed to a more mature state, or vice versa (Zhang et al. 2016). Although we do not directly examine state-shifting mechanisms, the disparity we observe between immediate and delayed effects is

consistent with these mechanisms. For example, the negative outcomes of migrating a less developed account to an inside salesperson are consistent with the customer experiencing neglect—or simply missing opportunities to engage in exploration with the seller—and the relationship suffering as a result.

Our research also provides a novel theoretical understanding of sales force structure decisions. We differentiate from prior literature on inside and outside sales roles by taking a customer-level migration perspective, rather than a firm-level structure perspective (cf. Rapp et al. 2012). In doing so, we recognize that the mix of inside and outside salespeople in an organization results from the aggregation of assignments to individual customer relationships. Decisions about customer migrations between salespeople, therefore, should be contingent on customer-level factors. Specifically, our findings leverage media richness theory to suggest that the appropriateness of outside–in and inside–out migrations depends on whether the richer face-to-face communications of outside salespeople, or the leaner but more frequent remote communications of inside salespeople, are better suited to the current state of the relationship.

Finally, our work broadens the domain of customer migrations between salespeople. Extant literature emphasizes migrations as reactive phenomena, where the expected value of the outcome is negative (e.g., due to salesperson turnover; Shi et al. 2017). In contrast, we conceptualize a cross-channel form of migration based on the widespread practice of handing off existing customers between inside and outside salespeople as a relationship progresses. These migrations are not reactive, but *proactive*. Sellers fully expect to gain from such migrations, when all costs and benefits are considered (Zoltners et al. 2013). Our unique methodology, combining a quasi-experimental approach with the assessment of customer-level net profit and sales revenue, reveals that sellers are right to expect positive outcomes—if the migration matches the appropriate sales channel with the customer's needs.

7.3 Limitations and Avenues for Future Research

The limitations of this work are common to managerial research and provide guidance for future extensions. As noted, this research focuses on B2B resellers, a large and important sector of the U.S. and global economies. Future work could examine our research questions in other product markets or other industry contexts, such as complex service providers. Given the importance of personal relationships and the

salesperson in particular in service-focused settings (Cannon and Perreault 1999, Fang et al. 2008), it is likely that sellers in such settings would have to reckon with even stronger effects of migrations; thus, our findings may well represent a conservative assessment of our research questions. The nature of migrations may also differ in industries where team selling is the dominant mode of account management (e.g., Ahearne et al. 2010b)—an extension worthy of examination.

We also focus our empirical studies on interventions that are common in practice—the migration of an account between inside and outside sales channels at a given point in the relationship—as well as contingencies that managers can easily observe. We do not examine repeated migrations over the lives of relationships. Further, salespeople and customer firm personnel may undergo complex psychological processes during the implementation of a migration, and these processes could act as micro-level mediators of our observed effects. Future research using alternative methodologies could focus on the thought processes of the seller- or customer-side individuals involved in a migration. Such research could grant deeper insight into underlying processes that may, in turn, suggest unexpected ways for managers to enhance positive effects and limit negative outcomes of migrations.

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Table 1 Relevant Illustrative Research Regarding Sales Force Structure and Customer Reassignment

Research	Context	Methodology	Examines Both Outside[a] and Inside[b] Sales Channels	Examines Migrations Across Different Salesperson Channels	Objective Outcomes Examined	
					Sales Revenue	Profit
Narus and Anderson (1986)	Examination of prevalent inside and outside sales roles	Firm-level survey	✓			
Boyle (1996)	Role of inside sales force in customer satisfaction	Customer-level survey	✓			
Gessner and Scott (2009)	Uses of analytics in managing inside sales forces	Conceptual				
Rapp et al. (2012)	Effects of inside/outside mix on firm performance	Firm-level survey	✓			
Rutherford et al. (2014)	Implications of role stress for inside vs. outside salespeople	Salesperson-level survey	✓			
Richardson (1999)	Modeling the effect of salesperson turnover on sales	Analytical model			✓	
Bendapudi and Leone (2002)	Effects of boundary-spanner turnover on relationships	Qualitative				
DeCarlo and Lam (2016)[c]	Characteristics of effective hunting and farming reps	Salesperson- and firm-level surveys				✓
Shi et al. (2017)	Effects of reassignment following turnover on sales	Quasi-experimental field study			✓	
This Research	Effects of customer migration between inside and outside channels on sales & profit	Quasi-experimental field study	✓	✓	✓	✓

a: Outside salespeople manage customer relationships through a combination of field visits to customer locations and remote contact. Studies not specifying inside/outside remain blank.

b: Inside salespeople manage customer relationships exclusively via remote (phone, email, etc.) contact. Studies not specifying inside/outside remain blank.

c: Discusses, but does not examine, transitions of new customers from hunter to farmer salespeople (who may operate via the same or different channels).

Table 2 Variables and Measurement (Studies 1 & 2)

Variable	Definitions	Measurement Details
Sales revenue	Dollar sales revenue from the customer in the month	Sales
Net profit	Net profit dollars from the customer in the month	Sales - Cost of goods sold - Operating expenses
Outside-in treatment	Indicator of treatment (Study 1): Migration from an outside to an inside salesperson	1 = Treatment, 0 = Control
Inside-out treatment	Indicator of treatment (Study 2): Migration from an inside to an outside salesperson	1 = Treatment, 0 = Control
Post-period	Indicator of period (month) after or before treatment	1 = After, 0 = Before
Customer account development	Extent to which revenues in the customer relationship have reached their potential at the time of the migration	Average monthly pretreatment sales divided by the customer's credit limit
Customer's length of time using new channel	Length of time the customer has used the new channel	Length of time since date of migration (months)
Salesperson dummy variables	Indicator identifying the specific inside or outside salesperson assigned to the customer in the month	1 = Assigned to a given salesperson; 0 = Not assigned to that salesperson
Customer tenure	Duration of customer-seller relationship at the time of the migration	Days since first transaction with seller
Customer purchasing potential	The amount that the customer could potentially buy from the seller, captured at the time of the migration	Customer's credit limit with seller
Buying group	Indicates whether the customer is a member of a group of customers that negotiate collectively with the seller (only appears in first-stage equation)	1 = Member, 0 = Not a member

Table 3 Summary Statistics (Studies 1 & 2)

Panel A. Outside–in Migration (Study 1)

Variables	Correlations				
	1	**2**	**3**	**4**	**5**
1. Net profit ($)	1.00				
2. Sales revenue ($)	.21*	1.00			
3. Account development	.07*	.08*	1.00		
4. Customer potential ($10K)	–.08*	.12*	–.31*	1.00	
5. Customer tenure	–.03*	–.04*	–.18*	–.08*	1.00
Mean	134.2	1596.6	.35	9.37	6143
Std. Dev.	486.1	3606.8	.30	27.28	2359

* $p < .05$; n = 74,751 customer-months

Panel B. Inside–out Migration (Study 2)

Variables	Correlations				
	1	**2**	**3**	**4**	**5**
1. Net profit ($)	1.00				
2. Sales revenue ($)	.38*	1.00			
3. Account development	.07*	.16*	1.00		
4. Customer potential ($10K)	–.01*	.03*	–.50	1.00	
5. Customer tenure	–.06*	–.06*	–.35	.28*	1.00
Mean	128.3	2122.9	.25	11.82	6625
Std. Dev.	719.6	5544.2	.23	17.27	2726

* $p < .05$; n = 12,240 customer-months

Table 4 Effects of Customer Migrations on Seller's Net Profit ($) (Studies 1 & 2)

	Outside–in Migration (Study 1)		Inside–out Migration (Study 2)	
	Est	**SE**	**Est**	**SE**
Treatment	229.99**	(36.41)	–105.34	(146.47)
Post-period	1.43	(7.34)	–53.12	(33.74)
Treatment × Post-period (TP)[a]	59.21*	(31.57)	–375.61**	(48.13)
Account development	23.99	(19.52)	328.59	(246.79)
Treatment × Account development	–243.89**	(40.52)	645.31*	(368.42)
Post-period × Account development	3.64	(13.71)	–12.74	(142.59)
TP × Account development	275.87**	(65.94)	73.77	(221.20)
Time	3.54**	(.67)	4.38	(3.43)
Treatment × Time	5.13**	(1.69)	–5.74	(3.92)
Post-period × Time	–7.84**	(1.04)	–.08	(4.72)
TP × Time	–51.85**	(3.37)	154.67**	(9.33)
Account development × Time	2.04	(1.51)	10.77	(15.68)
Treatment × Account development × Time	–9.66**	(3.64)	39.57	(24.21)
Post-period × Account development × Time	–1.47**	(2.01)	–22.44	(17.90)
TP × Account development × Time[b]	214.87**	(8.14)	–499.04**	(61.77)
Customer potential	–4.75e-05	(4.52e-05)	2.55e-04*	(1.50e-04)
Customer tenure	–3.99e-03*	(2.37e-03)	7.97e-03*	(4.84e-03)
IMR[c]	–4.14**	(1.18)	75.76	(61.64)
Constant	90.04	(123.49)	16.68	(122.15)
Salesperson dummy variables	Yes		Yes	
Observations	74,751		12,240	
Number of customers	5,640		1,041	

** $p < .05$, * $p < .10$

a: Treatment × Post-period (TP) represents the effect of the treatment on the treated in a difference-in-differences framework. Interactions with this term capture heterogeneity in the treatment effect.

b: Time is centered at a value of 1 month after the migration.

c: The inverse Mills ratio here corrects for potential endogeneity due to non-random assignment to the treatment group (Saboo et al. 2016); see Appendix A for details.

Table 5 Effects of Customer Migrations on Seller's Revenue ($) (Studies 1 & 2)

	Outside–in Migration (Study 1)		Inside–out Migration (Study 2)	
	Est	**SE**	**Est**	**SE**
Treatment	–544.94**	(228.82)	–1181.23	(998.02)
Post-period	196.5**	(69.82)	114.21	(115.57)
Treatment × Post-period (TP)[a]	–640.84**	(154.27)	515.15**	(221.27)
Account development	925.53**	(262.76)	3498.06**	(1293.03)
Treatment × Account development	631.70**	(295.39)	2847.04	(1777.42)
Post-Period × Account development	333.37*	(171.51)	148.76	(471.84)
TP × Account development	1045.94**	(325.83)	–361.22	(1442.18)
Time	–32.84**	(5.32)	27.05	(39.12)
Treatment × Time	–1.88	(13.75)	–13.99	(45.83)
Post-period × Time	28.54**	(9.42)	–65.10	(79.92)
TP × Time	6.75	(19.56)	121.47	(83.65)
Account development × Time	8.01	(17.65)	–127.52*	(69.65)
Treatment × Account development × Time	4.13	(26.74)	–286.49	(197.10)
Post-Period × Account development × Time	–33.77*	(20.41)	103.26	(116.29)
TP × Account development × Time[b]	62.98*	(37.23)	–367.99*	(211.20)
Customer potential	1.98e-03*	(1.13e-03)	5.3e-03**	(1.50e-03)
Customer tenure	–.04**	(.01)	–.10**	(.05)
IMR[c]	–41.28	(28.63)	29.49	(450.05)
Constant	2886.83**	(1475.20)	704.37	(729.32)
Salesperson dummy variables	Yes		Yes	
Observations	74,751		12,240	
Number of customers	5,640		1,041	

** $p < .05$, * $p < .10$

a: Treatment × Post-period (TP) represents the effect of the treatment on the treated in a difference-in-differences framework. Interactions with this term capture heterogeneity in the treatment.

b: Time is centered at a value of 1 month after the migration.

c: The inverse Mills ratio here corrects for potential endogeneity due to non-random assignment to the treatment group (Saboo et al. 2016); see Appendix A for details.

Table 6 Study 3 Effects of Implementing Outside-In Migration on Salesperson Contact

Panel A. ANOVA

	DV: Outside rep contact minutes			DV: Inside rep contact minutes		
	Degrees of freedom	*Mean squares*	*F-Value*	*Degrees of freedom*	*Mean squares*	*F-Value*
Migration (M)	1	6,719	0.89	1	799,890	76.22 ***
Rebuy purchasing (RP)	1	46,452	6.16 **	1	38,258	3.65 *
M × RP	1	65,014	8.62 ***	1	35,284	3.36 *
Error	205	7,539		205	10,495	

Panel B. Means and Contrasts

	No migration	Migration		Key contrast
	Outside contact minutes	*Outside contact minutes*	*Inside contact minutes*	Outside $\text{contact}_{\text{migration}}$ vs. Outside $\text{contact}_{\text{no-migration}}$
Low rebuy	156.42	183.22	155.06	$F(1,205) = 2.33$, $p = .13$
High rebuy	163.35	119.39	102.93	$F(1,205) = 7.08$, $p = .01$

Panel C. Path Model

	DV: Outside rep contact minutes		DV: Inside rep contact minutes		DV: Purchase intentions	
Standardized path	*Est*	*SE*	*Est*	*SE*	*Est*	*SE*
Migration (M)	0.30	(.19)	1.26	(.22)	-0.04	(.18)
Rebuy purchasing (RP)	0.08	(.19)	0.00	(.00) **	0.11	(.14)
M × RP	-0.79	(.27) ***	-0.43	(.24) *		
Outside rep contact (OC)					0.15	(.14)
Inside rep contact (IC)					-0.05	(.12)
OC × RP					-0.23	(.16)
IC × RP					0.38	(.18) **
Intercept	0.03	(.12)	-0.54	(.00) ***	-0.04	(.15)

* $p < .10$; ** $p < .05$; *** $p < .01$. n = 209.

Figure 1 Studies 1 & 2 Empirical Framework

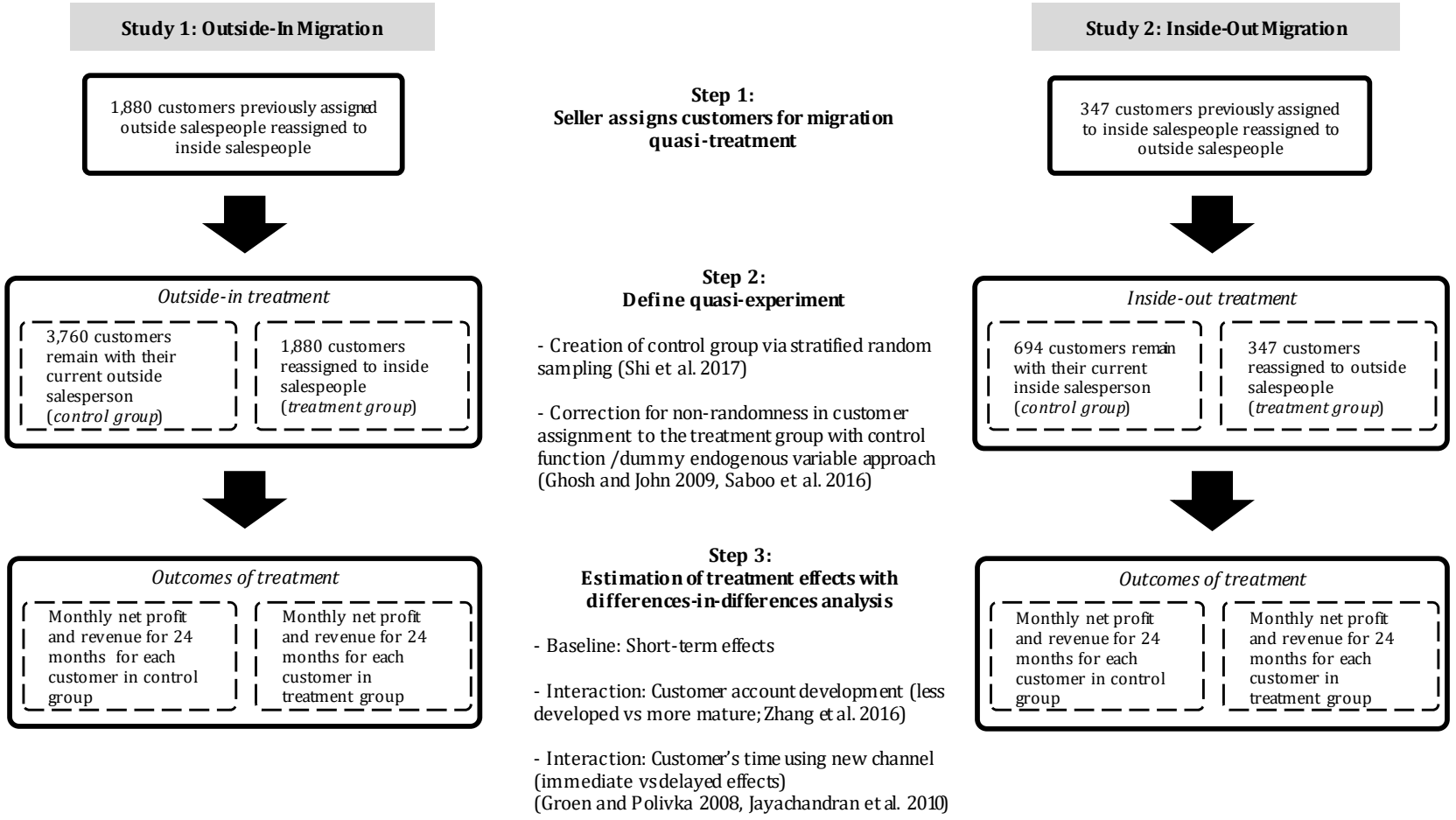
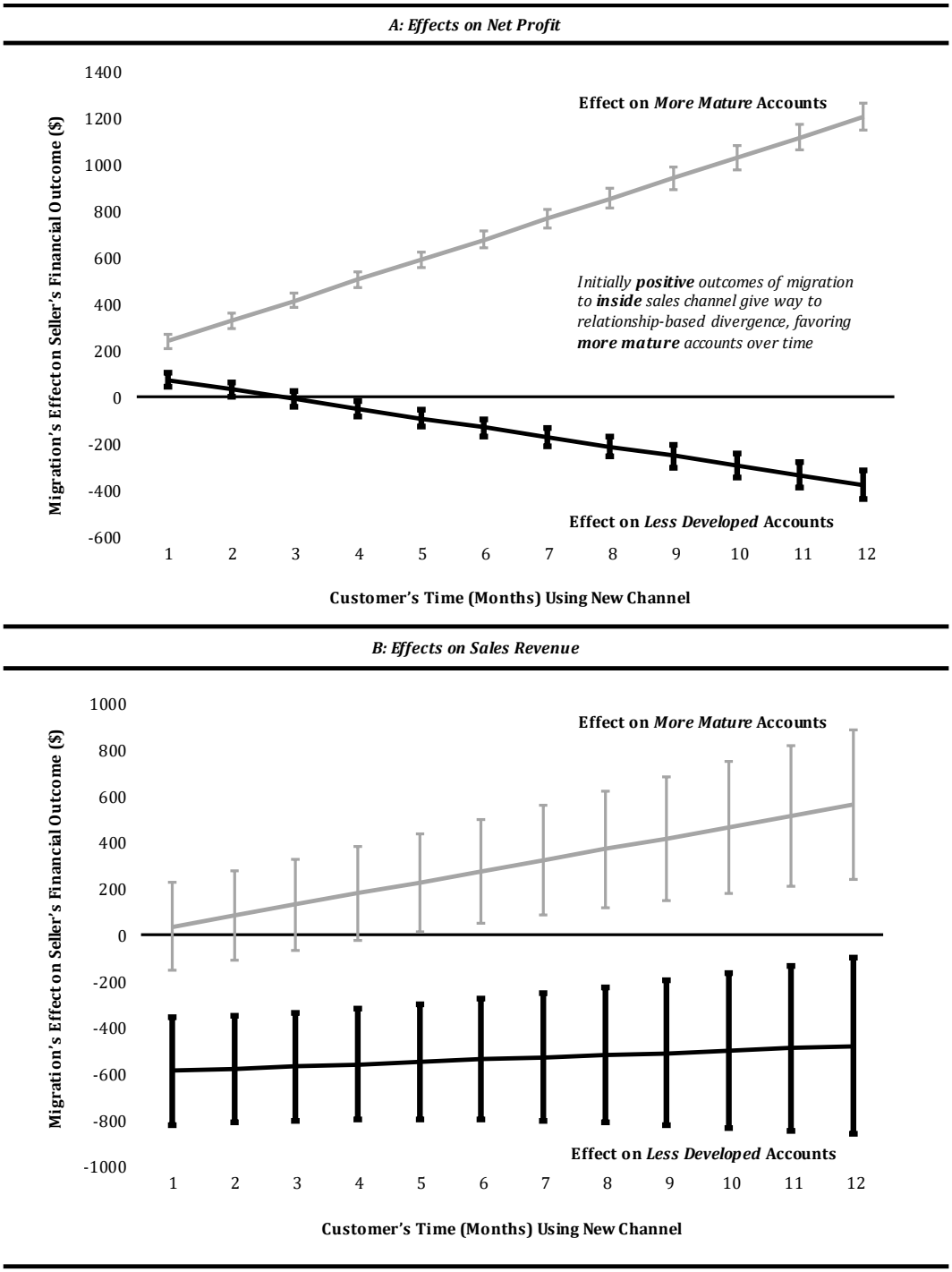


Figure 2 Study 1 Marginal Effects of Outside–in Migrations on Seller's Financial Outcomes



Note: In these and subsequent plots, "Less Developed" and "More Mature" refer to levels of customer account development 1 standard deviation below and above the mean, respectively.

Figure 3 Study 1 Top- and Bottom-Line Implications of Outside–in Migrations

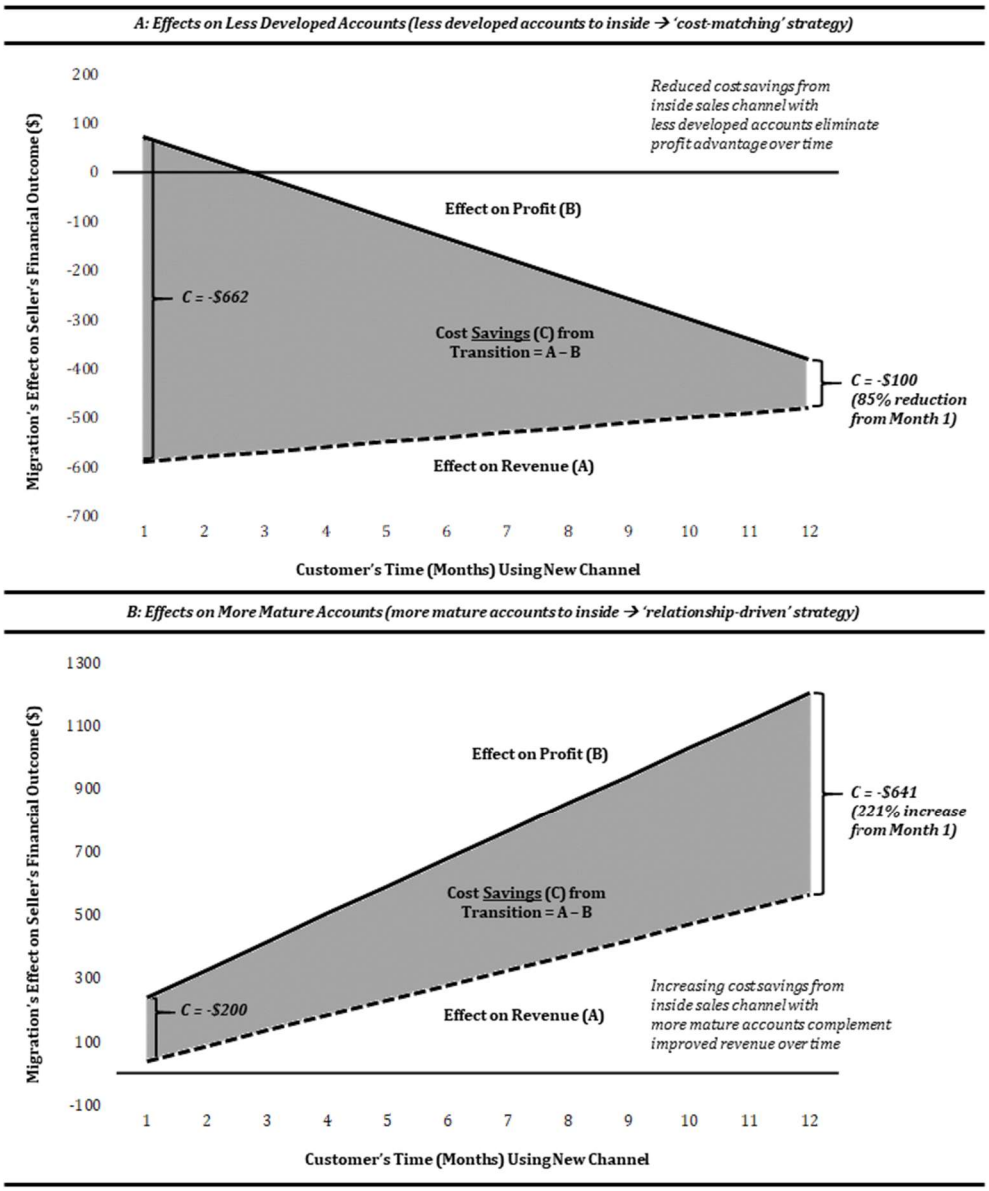


Figure 4 Study 2 Marginal Effects of Inside–out Migrations on the Seller's Financial Outcomes

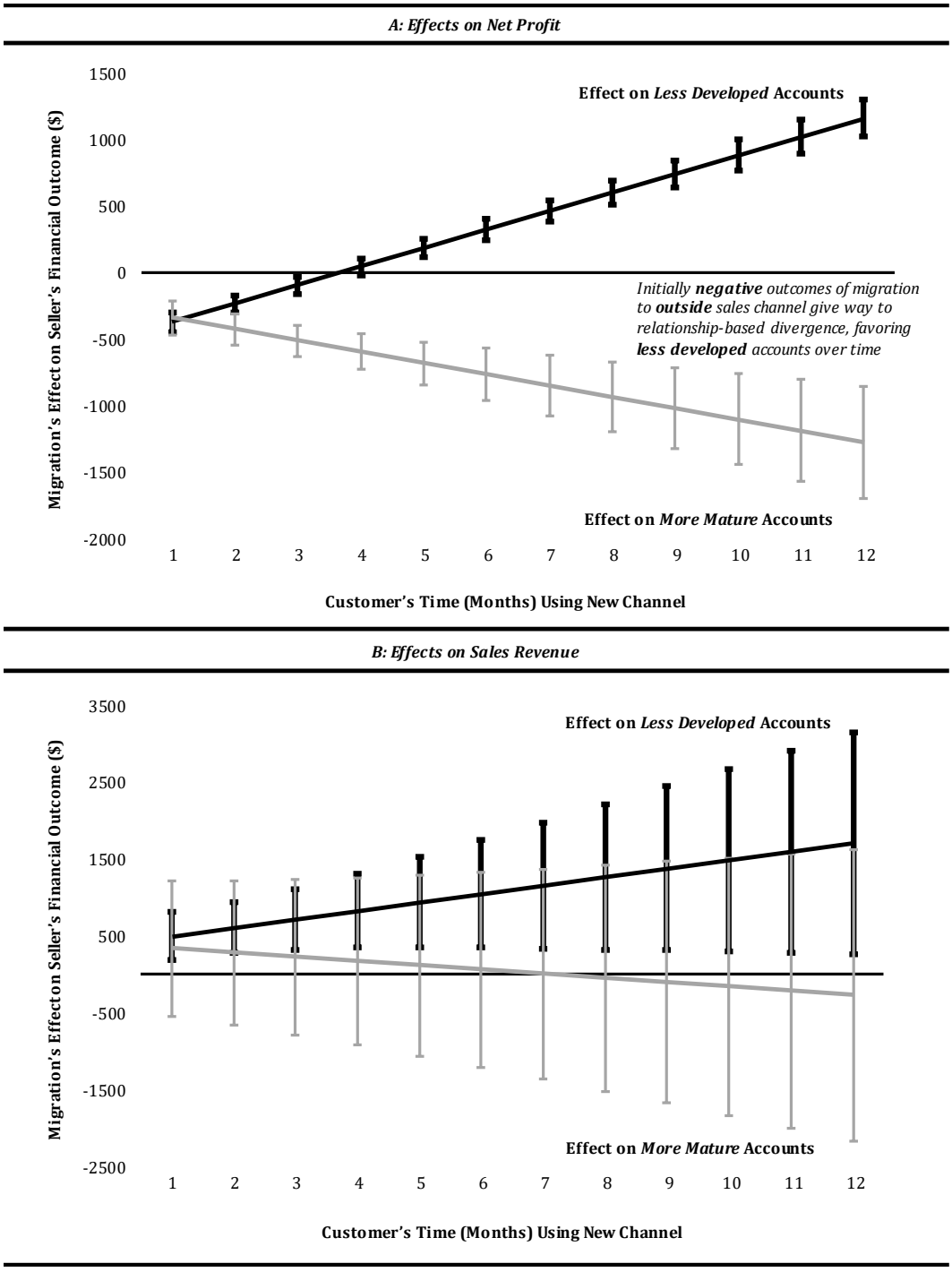
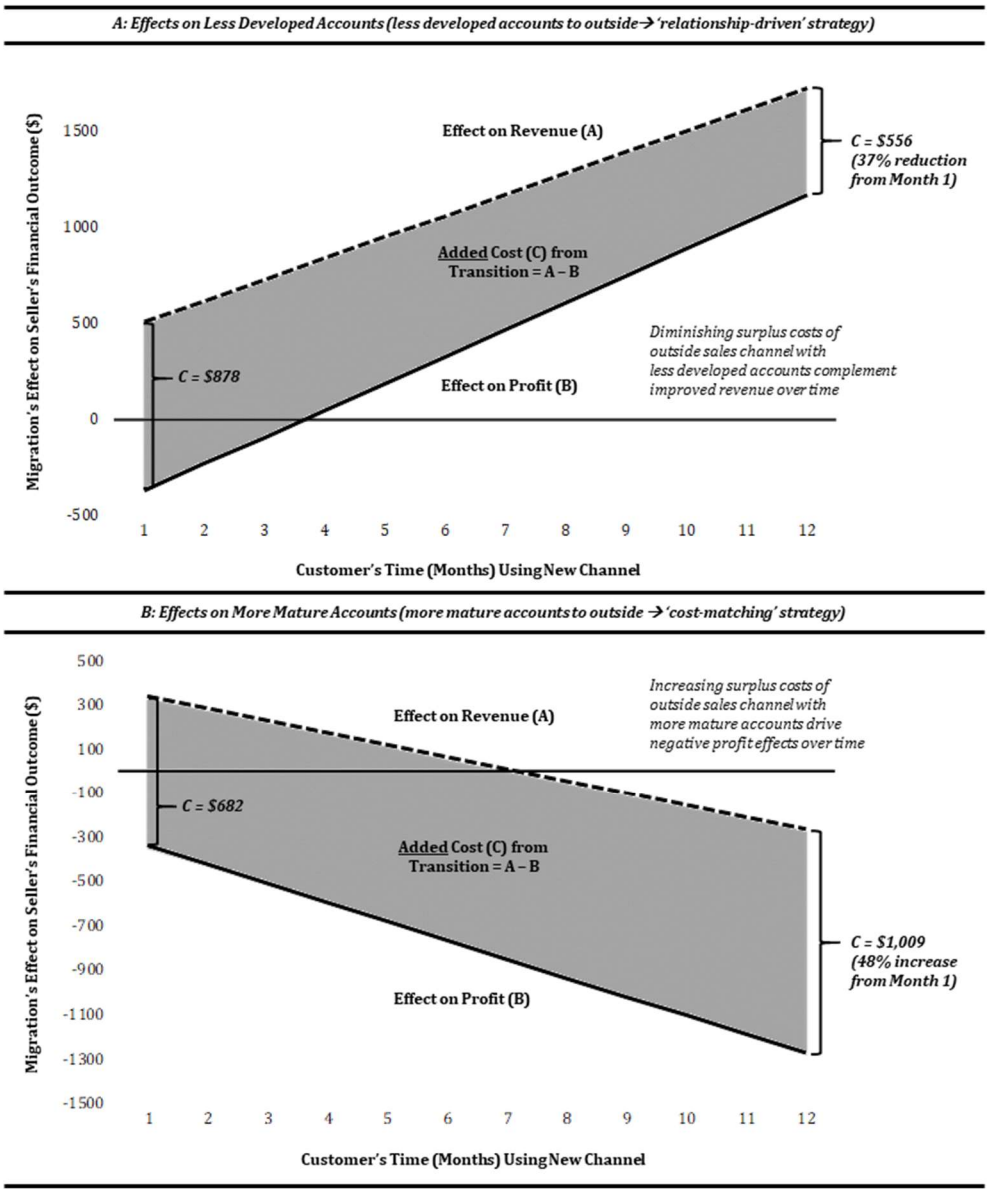


Figure 5 Study 2 Top- and Bottom-Line Implications of Inside–out Migrations



Appendix A
Study 1 & 2 Additional Empirical Details

In this appendix, we detail the models used in Studies 1 and 2. The detail below specifically pertain to Study 1. Study 2 employs an identical modeling strategy, with the exception of the *OutsideInTreatment* variable being replaced with the *InsideOutTreatment* variable.

WA.1. Empirical Model

We address two key threats to the internal validity of Study 1: non-randomness in assignment to the outside–in migration and non-randomness of the newly assigned salesperson.

WA.1.1. Non-randomness in assignment to outside–in migration. The collaborating seller conducted the outside–in migrations of 1,880 customers during a single month. While the seller incorporated an element of randomness, some customers were more or less likely to be included.

We account for this non-randomness via a two-step control function approach (Ghosh and John 2009, Saboo et al. 2016).[6] In the first step, we model the likelihood of a customer being selected to the outside–in treatment group based on the main sets of factors that the seller considered: customer purchasing potential (*CustomerPotential*); buying group membership (*BuyingGroup*), a dummy variable indicating whether the customer is part of a buying group; customer tenure with the seller (*CustomerTenure*); and customer account development (*AccountDevelopment*). For identification purposes, at least one variable in the first-stage equation should be excluded from the second-stage equation. The seller's executives indicated that buying group members may have been less likely to be migrated to inside sales, but this factor should not directly affect sales, satisfying the exclusion restriction. Each of the treatment assignment drivers appears in the following probit model:

$$\text{Treatment}_i = \alpha_0 + \alpha_1\text{CustomerPotential}_i + \alpha_2\text{BuyingGroup}_i + \alpha_3\text{CustomerTenure}_i + \alpha_4\text{AccountDevelopment}_i + c_{1i} + \varepsilon_{1it}. \quad (1)$$

Customer random effects are indicated by c_{1i}. In the second step, we compute the inverse Mills ratio (*IMR*) from this equation and include it in the second-stage net profit and sales revenue equations (Heckman and Navarro-Lozano 2004).

WA.1.2. Non-randomness of the newly assigned salesperson. When a customer was migrated to an inside salesperson, the seller did not select this salesperson purely at random. The seller considered salesperson-level factors such as ability and motivation that may also affect revenue and profit. We therefore control for the influence of salesperson-level factors in the net profit and sales revenue equations using salesperson dummy variables (Rossi 2014).

WA.2. Difference-in-Differences Estimation of the Effect of the Outside–in Migration

We use a multi-period difference-in-differences specification with treatment effects that interact with customer account development at the time of the migration (*AccountDevelopment*) and also with months that the customer has used the new channel (*Time*); the latter extends the model to accommodate flexible dynamics of the treatment effect (Groen and Polivka 2008, Jayachandran et al. 2010). Time is centered around the first month following the migration for ease of interpretation. We specify the following models where the difference-in-differences lower and higher order terms (i.e., *OutsideInTreatment*, *PostPeriod*, *OutsideInTreatment* × *PostPeriod*) are represented by the vector *DD*:

[6] This approach, also known as a treatment effects model or dummy endogenous variable model (Heckman 1978, Vella and Verbeek 1999), may be viewed as a special case of the control function approach (e.g., Petrin and Train 2010) where the endogenous regressor is binary. It may also be viewed as a special case of the Heckman correction, where the outcome is observed for all units in the sample, rather than only those that received the treatment (Heckman and Navarro-Lozano 2004).

$$\text{NetProfit}_{it} = \beta_{0i} + \sum_{m=1}^{3} \beta_{0+m}\text{DD}_{it,m} + \beta_4\text{AccountDevelopment}_i + \beta_5\text{Time}_t + \sum_{p=1}^{3}(\beta_{5+p}\text{DD}_{it} \times \text{AccountDevelopment}_i)_p + \sum_{r=1}^{3}(\beta_{8+r}\text{DD}_{it} \times \text{Time}_{it})_r + \sum_{v=1}^{4}(\beta_{11+v}\text{DD}_{it} \times \text{AccountDevelopment}_i \times \text{Time}_{it})_v + \sum_{w=1}^{2} \beta_{15+w}\text{Controls}_{it,w} + \beta_{18}\text{IMR}_i + s_{2i} + c_{2i} + \varepsilon_{2it}. \quad (2)$$

$$\text{SalesRevenue}_{it} = \gamma_{0i} + \sum_{m=1}^{3} \gamma_{0+m}\text{DD}_{it,m} + \gamma_4\text{AccountDevelopment}_i + \gamma_5\text{Time}_t + \sum_{p=1}^{3}(\gamma_{5+p}\text{DD}_{it} \times \text{AccountDevelopment}_i)_p + \sum_{r=1}^{3}(\gamma_{8+r}\text{DD}_{it} \times \text{Time}_{it})_r + \sum_{v=1}^{4}(\gamma_{11+v}\text{DD}_{it} \times \text{AccountDevelopment}_i \times \text{Time}_{it})_v + \sum_{w=1}^{2} \gamma_{15+w}\text{Controls}_{it,w} + \gamma_{18}\text{IMR}_i + s_{3i} + c_{3i} + \varepsilon_{3it}. \quad (3)$$

For customer *i* in month *t*, *OutsideInTreatment* is a dummy variable reflecting whether the customer was migrated (=1) or remained with the outside salesperson (=0), and *PostPeriod* is a time-varying dummy indicating whether a month falls before (=0) or after (=1) the migration. *Controls* is a vector of control variables including *CustomerPotential* and *CustomerTenure*, while s_{2i} and s_{3i} represent the salesperson dummy variables. *IMR* is the inverse Mills ratio from the first-stage control function equation, and c_{2i} and c_{3i} are customer random effects capturing unobserved customer-level heterogeneity. Finally, because error terms in multi-period difference-in-differences models may be serially correlated, we estimate clustered robust standard errors (Chib and Greenberg 1995).

Appendix B
Study 3 Experimental Manipulations and Measures

Note: In Study 3, the outside–in migration was operationalized without the removal of the outside salesperson from the relationship. That is, both salespeople remained with the account after the migration. This manipulation was designed to capture the customer's preferences for contacting the inside salesperson immediately following the transition, without forcing all contact towards this salesperson.

MIGRATION MANIPULATION

Migration condition	*No-migration condition*
QZS-Tech serves your company with 2 salespeople: (1) **An outside salesperson** who meets with you face-to-face, shown below. The outside salesperson from QZS-Tech typically requests to visit you once a month, and a visit usually lasts about 60 minutes. However, you are free to reach out to your salespeople from QZS-Tech as much as you like, and you control how long you spend talking to them. (2) **An inside salesperson** who only talks to you remotely (phone, email, etc.), shown below. You have only started working with the inside salesperson within the last 3 months. 	QZS-Tech serves your company with **an outside salesperson** who meets with you face-to-face, shown below. The outside salesperson from QZS-Tech typically requests to visit you once a month, and a visit usually lasts about 60 minutes. However, you are free to reach out to your salesperson from QZS-Tech as much as you like, and you control how long you spend talking to them.

REBUY PURCHASING MANIPULATION

High rebuy purchasing condition	*Low rebuy purchasing condition*
This month, your company expects to place **ten (10)** orders with QZS-Tech, as follows: - You will need to place **nine (9)** orders for **products you've bought before**. There are a few details to sort out, but these orders involve simply buying updated versions of existing hardware. - You will need to place an additional **one (1)** order for products you have **not** bought before. There are many different features, brands, and hardware setups available, and you are not certain how they all work.	This month, your company expects to place **ten (10)** orders with QZS-Tech, as follows: - You will need to place **one (1)** order for **products you've bought before**. There are a few details to sort out, but these orders involve simply buying updated versions of existing hardware. - You will need to place an additional **nine (9)** orders for products you have **not** bought before. There are many different features, brands, and hardware setups available, and you are not certain how they all work.

SALESPERSON CONTACT MEASURES
(open-ended numerical inputs unless otherwise noted)

'Placing orders' salesperson contact
(appears immediately after rebuy text describing the 10 orders; inside salesperson only mentioned if participant received migration condition)
Please estimate how many **minutes** you would need to spend talking to the **outside** salesperson [and the inside salesperson] this month to successfully place these orders.

'Return and exchange' salesperson contact
This month, your company also needs to complete the process of returning and exchanging some products from last month's orders. You would like to figure out exactly what pieces of hardware are defective, return them, and exchange them for new ones.
Please estimate how many **minutes** you would need to spend talking to the **outside** salesperson [and the **inside** salesperson] this month to successfully complete this process.

'Discount' contact salesperson
This month, your company also needs to **try to get a discount** on an important order to match a competitor's price. This will be a steep discount, so you can expect some resistance from QZS-Tech.
Please estimate how many **minutes** you would need to spend talking to the **outside** salesperson [and the **inside** salesperson] this month to try to get a discount.

Outside salesperson channel usage (0-100% slider)
Of your total time spent talking to the **outside salesperson** this month, what percent would be **face-to-face**?

OTHER MEASURES
(9-point Likert scales, from 1 = Strongly disagree to 9 = Strongly agree)

Purchase intentions
In the future, my company should buy **more** products from QZS-Tech.
Manipulation checks
[Migration] QZS-Tech serves my company with both an inside and an outside salesperson.
[Rebuy purchasing] This month, my company is buying mostly products from QZS-Tech that we have **bought before**.