**Effectiveness of Price Delegation: Evidence from a Field Experiment**

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**Effectiveness of Price Delegation: Evidence From a Field Experiment**


## Abstract

Delegating pricing decisions to the sales force, i.e., granting salespeople the authority to decide the final price within certain bounds, is a critical managerial decision that can have significant effects on firm performance, sales force motivation, and customer engagement. While there exists considerable theoretical research on price delegation, there is little empirical research on the real-world consequences of price delegation on the short-term and long-term outcomes of the firm. Leveraging a field experiment across two automobile dealerships in India conducted over five years involving 15,746 vehicle sales transactions and 68,692 vehicle service transactions, this study finds that price delegation has significantly positive effects on both short-term (sales volume, gross profits) and long-term (market share, post-purchase service volume and revenues) firm performance. Moreover, salespeople respond positively to this change and improve their earnings, leading to a win-win situation for the firm and the salespeople.



*Keywords*: price delegation, sales force incentives, field experiment, difference-in-differences

Price delegation[1] represents one of the major strategic decisions sales managers face today. While delegation of pricing authority to salespeople can save unproductive time that they spend on discount authorization[2] (Simester and Zhang 2014), it can also leverage their private information[3] to generate higher profits (e.g., Alavi, Wieseke, and Guba 2016).

Existing literature has mostly explored price delegation through analytical models (e.g., Mishra and Prasad 2005). However, there is no consensus in academic research on the effectiveness of price delegation. Some researchers propose that granting salespeople the authority to set prices could prove advantageous in sales environments involving negotiations or bidding (Weinberg 1975), situations involving intense price competition (Bhardwaj 2001), and in contexts where salespeople may possess private information unavailable to the firm (Lal 1986). In contrast, other works propose that the firm can design contracts to extract salespeople's private information rendering price delegation inessential (Mishra and Prasad 2004). Moreover, price delegation may cause salespeople to reduce their effort in seeking high-value customers, resulting in lower profits (e.g., Joseph 2001).

Similarly, the limited empirical work on price delegation also paints a murky picture of its effectiveness. Researchers have shown that price negotiations[4] positively impact firm performance through structural models of field data (Jindal and Newberry 2022), lab experiments (Lim and Ham 2014), and surveys (e.g., Frenzen et al. 2010). Further, customer

[1]In price delegation, sales managers assign their salespeople the authority to price specific products or services within pre-defined price ranges. The price range over which pricing authority is delegated is chosen based on the estimated price elasticities of products or services, desired margins, and overall firm strategy.
[2]Crainer and Dearlove (2004, p. 438) report, "*more than 80 percent of all cases were 'exceptions' that required internal negotiation between marketing and sales. These constant price negotiations wasted considerable time*."
[3]Here, private information refers to any information relevant to the customer or the sale that the salesperson can access but not the firm. Usually, this is in the form of local information not known to individuals in the firm far removed from customer-level dynamics.
[4] Here, price negotiation refers to any act of negotiation regarding the price between the salesperson and the customer, even if the salesperson may not have the final authority on setting the price and would require supervisory approval. In contrast, price delegation refers to the act of delegating final pricing authority to the salesperson without requiring managerial approval, even if it is bound within a certain pre-determined range of prices.

loyalty to the salesperson can also increase as a result (Bonyuet 2019). However, other works find that price negotiations may reduce selling effort (Hansen, Joseph, and Krafft 2008) such that salespeople engage in mispricing to close deals (Larkin 2014). Consequently, there may be an adverse impact on sales and profits (e.g., Stephenson, Cron, and Frazier 1979).

Therefore, it is surprising that despite increasing deployment of price delegation by firms in practice, empirical work on its effectiveness in the field is scarce in academic research. The current study addresses this dearth of research through an empirical investigation of both short-term and long-term consequences of price delegation in the field. This research leverages data on 15,746 vehicle sales transactions and 68,692 vehicle service transactions from a field experiment conducted across two automobile dealerships in India over five years. While one of the dealerships continued centrally determined pricing throughout the duration of the study, the other dealership started delegating pricing authority to its salespeople from the 3rd year onwards. Moreover, the price delegation scheme was integrated with the structure of the incentive scheme for salespeople[5]. Leveraging the field experiment, this study aims to address the following questions:

1. How does price delegation impact the firm's sales volume?
2. How does price delegation affect the firm's gross profits?
3. What impact does price delegation have on salespeople's incentive earnings?
4. What are the long-term effects of price delegation on the firm's performance?

By answering these questions, this study makes the following contributions to the literature. First, while prior literature has explored price delegation mostly through the lens of analytical

[5]Concurrent with price delegation, the dealership introduced a commission for salespeople on the Value-Added Services (VAS) sold at the time of vehicle purchase. The price delegation scheme is designed such that the discount that a salesperson can offer is bounded above by the cumulative commissions on VAS sales earned by that salesperson in the same month.

models, this is the first study to empirically examine the real-world effectiveness of price delegation through a field experiment. Results indicate that introducing price delegation can have a significant positive impact on a firm's sales performance (e.g., sales volume). Moreover, the results of this study indicate that strategic deployment of price delegation schemes can be effective in enhancing firm profits in low-margin industries (e.g., the Indian automobile industry). Second, this is the first work on the long-term consequences of delegating pricing authority to the sales force. Findings suggest that price delegation can increase the market share of the firm and boost customer re-engagement behavior (e.g., post-purchase service volume and revenues) after the initial purchase. Third, the study demonstrates that incentive-integrated price delegation can be an effective tool to induce motivation in the sales force, which may positively impact their sales performance and incentive earnings. In fact, there is some evidence that salespeople's customer follow-up efforts may have increased due to the introduction of price delegation.

## Literature Review

### *Price Delegation*

Extant literature has studied price delegation mostly as a theoretical alternative or complement to centralized pricing authority. However, the advantages of price delegation seem ambiguous and even the scant empirical research has not been able to reach a consensus on the effectiveness of price delegation. Table 1 presents an overview of the current literature on price delegation and the current study's contributions.

*Analytical models*. Although most theoretical works have suggested price delegation has overall positive effects, more recent research has cast doubts on their validity. Weinberg (1975) suggests that giving salespeople control over the selling price increases profits in contexts where decisions need to be made on the spot. Meanwhile, Bhardwaj (2001) proposes that in duopolies with intense price competition, price delegation can increase prices and generate higher margins for the firm. Further, Lal (1986) proposes that when salespeople and managers possess similar levels of information, central pricing and price delegation generate similar profits. In contrast, in cases where salespeople possess private information unknown to the firm, price delegation can be more profitable.

However, Mishra and Prasad (2004) show that any such private information possessed by the sales force can always be extracted by the firm by the design of optimal contracts. The authors further demonstrate that if the firm opts for such a strategy, centrally determined pricing becomes at least as profitable as delegating pricing to the sales force. Additionally, Joseph (2001) recommends that companies carefully consider the trade-offs associated with introducing price delegation to their sales force. While limited pricing authority can motivate salespeople to

seek out new customers, full pricing authority can lead salespeople to exert less effort in seeking high-value customers and instead focus on closing deals.

*Empirical research*. Similar to the theoretical literature, the limited empirical research on price delegation has also not been able to reach a consensus in relation to its effectiveness in practice. The closest research to this work is Jindal and Newberry (2022)[6], who analyze field data using structural models. The authors conclude that price negotiations, in conjunction with a revenue-based quota system, can generate higher profits. Meanwhile, Lim and Him (2014) leverage lab experiments to show that price delegation can lead to higher profits. Similarly, survey-based works find that price delegation can have a positive effect on firm performance when market-related uncertainty is high (Frenzen et al. 2010) and competitive intensity is at the extremes (Hansen, Joseph, and Krafft 2008). Moreover, Bonyuet (2019) uncovers that higher price delegation results in higher customer loyalty to the salesperson.

In contrast, Larkin (2014) analyzes field data to uncover that price negotiations, in conjunction with non-linear incentive schemes, can hurt firm revenues due to mispricing. Similarly, Stephenson, Cron, and Frazier (1979) leverage surveys to research different degrees of price delegation offered to the sales force by firms and find a negative relation of the delegation level and sales performance. Further, Hansen, Joseph, and Krafft (2008) use surveys to find that price delegation can lead salespeople to reduce their selling efforts when prospecting effort costs or competitive intensity are at intermediate levels.

[6] For a detailed account of how the current research builds on Jindal and Newberry (2022), please refer to Appendix A.

Table 1: Existing Literature on Price Delegation and the Study's Contributions.

| Authors (Year) | Method | Managerial Issue | Sample | Findings | Focus | | |
|---|---|---|---|---|---|---|---|
| | | | | | Firm Performance | Salesperson Earnings | Long-Term Effects |
| **Analytical Research on Price Delegation** | | | | | | | |
| Weinberg (1975) | Analytical models | Effectiveness of price delegation | - | Price delegation advantageous under uncertainty | ✓ | - | - |
| Lal (1986) | Analytical models | Price delegation under symmetric and asymmetric information | - | Under symmetric information, central pricing and price delegation equally profitable; under information asymmetry, price delegation more profitable | ✓ | - | - |
| Joseph (2001) | Analytical models | Degree of price delegation | - | Limited pricing authority optimal to motivate salespeople | ✓ | - | - |
| Bhardwaj (2001) | Analytical models | Price delegation under competition | - | Price delegation can soften price competition by raising prices | ✓ | - | - |
| Mishra and Prasad (2004) | Analytical models | Price delegation | - | Private information can be extracted through contract design, rendering price delegation inessential | ✓ | - | - |
| Mishra and Prasad (2005) | Analytical models | Price delegation under symmetric and asymmetric information | - | Under symmetric information, central pricing and delegation equivalent; under information asymmetry, market equilibria payoff-equivalent to central pricing for all firms | ✓ | - | - |
| **Empirical Research on Price Delegation** | | | | | | | |
| Stephenson, Cron, and Frazier (1979) | Surveys | Degree of price delegation | Questionnaire mailed to 220 members with 50% response rate | Higher the price delegation, lower the sales performance | ✓ | - | - |
| Hansen, Joseph, and Krafft (2008) | Surveys | Effectiveness of price delegation | 2 mail surveys of 1,099 chief sales executives of German sales forces with 24.6% response rate | Price delegation increases agency costs at intermediate values of prospecting costs or competitive intensity | ✓ | - | - |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Frenzen et al. (2010) | Surveys | Effectiveness of price delegation | 899 companies mailed, 188 responses received, 181 usable | Price delegation positively impacts firm performance in unpredictable environments | ✓ | - | - |
| Lim and Ham (2014) | Lab experiments | Impact of price delegation on profits | 146 undergraduate business students in 4 treatment groups | Price delegation increases managerial profits | ✓ | - | - |
| Larkin (2014) | Analysis of field data | Impact of non-linear incentives with price delegation | Transaction data across 7,912 deals across 28 quarters | Presence of non-linear incentives with price delegation lowers prices and hurts firm revenues | ✓ | - | - |
| Bonyuet (2019) | Surveys | Impact of price delegation on customer loyalty | Random stratified sample of 3,000 industrial customers mailed, 600 responses received | Lower price delegation results in weaker customer loyalty to the salesperson | - | - | - |
| Jindal and Newberry (2022) | Structural models of field data | Impact of revenue-based quota with price delegation | Transaction data across 13 home appliance categories over 12 months | Presence of quota with price delegation raises firm profits | ✓ | - | - |
| **Present study** | **Field experiment** | **Impact of price delegation on firm and salespeople performance; long-term effects on firm** | **15,746 sales and 68,692 service transactions** | **Price delegation positively impacts firm's short-term and long-term performance, increases salespeople incentive earnings** | ✓ | ✓ | ✓ |

### *Sales Compensation*

Sales is one of the most critical functions of a firm. Therefore, firms spend a considerable proportion of their budget to compensate their sales force. The annual cost of sales incentives in the United States alone has now exceeded $800 billion (Steenburgh and Ahearne 2012).

However, considering the heterogeneity in salespeople characteristics and selling environments, it is difficult to accurately estimate the amount of effort invested by a salesperson in the selling process. This scenario is a special case of the "moral hazard" problem, discussed extensively in the principal-agent framework (e.g., Holmström 1979). However, most modern firms have objective data on their salespeople's activities (e.g., number of units sold, number of

customer visits) readily available. Therefore, the firm may use these sales performance or activity metrics to gauge a salesperson's effort investment. Literature in this area has explored sales force control systems (e.g., Oliver and Anderson 1994), the role of product perception (Ahearne et al. 2010), and activity-based incentives (Rao et al. 2021).

At the same time, there also exists the concern of "incentive-compatibility." While the firm only cares about sales performance, rational salespeople would only be interested in their own compensation. Therefore, designing compensation schemes for salespeople that can enhance their sales performance represents a key objective for the firm. Past research has extensively studied this area through analytical models (e.g., Basu et al. 1985) and field studies (e.g., Patil and Syam 2018). Researchers have highlighted the importance of incentive design through a variety of design considerations, such as the effectiveness of bonuses vs. commissions (Kishore et al. 2013), the effects of managerial input (Waiser 2021), and self-selected incentives (Bommaraju and Hohenberg 2018). The current research contributes to the literature on sales compensation due to the novel way price delegation is tied to salespeople's incentive earnings.

## Conceptual Background and Research Questions

In businesses, delegation refers to the process of decentralization of decision-making authority from the top management to the middle and lower levels, thereby empowering them to make decisions on specific designated tasks. By delegating authority, the top management can free itself to focus only on critical strategic decisions and demanding areas, which may lead to better downstream efficiency (e.g., operations, profitability, market strategies). At the same time, delegation can also carry numerous benefits for the sales force, such as increased productivity (Simester and Zhang 2014) and autonomy, which may increase firm performance (e.g., Alavi, Wieseke, and Guba 2016).

The current study focuses specifically on price delegation, which has seen increased prevalence in recent years. This research leverages sales and service data from a field experiment conducted across two automobile dealerships in India over five years. While the control dealership persisted with central pricing throughout the experiment, the treatment dealership shifted to price delegation from the 3rd year onwards. Following Golder et al. (2023), who advocate for a paradigm shift in academic research away from the dominant theory-driven path, the current research relies on an "*empirics-first*" approach to inform the question of the effectiveness of price delegation. This section presents the research questions.

*Vehicle purchase flow.* In each dealership, the sales process[7] of the vehicle follows a set of structured steps starting with lead generation, followed by initial contact, needs assessment, solution offering, objection handling, closing the deal, and post-sales follow-ups. The final goal of this process is to convert potential customers into paying ones efficiently and effectively.

[7]For an illustration of the sales process flow, please refer to Figure B1 in Appendix B.

Likewise, the customer process flow[8] maps out a customer's journey from recognizing a need and making a purchase decision to post-purchase activities, like providing feedback or initiating returns. This journey, from initial contact to final transaction and follow-up includes multiple touchpoints, where interactions with the brand may play a role in the customer's decision-making processes.

*Service transactions.* In addition to the primary purchase of the vehicle, customers can avail a multitude of services. The services can be broadly classified into three categories: free services, paid services, and Value-Added Services (VAS)[9]. The vehicle manufacturer, i.e., the focal brand offers three instances of recommended free post-purchase service for each new vehicle that can be used anytime within one year of purchase[10]. While the customer does not have to pay for the free service, the manufacturer reimburses the dealership for the service offered. After the utilization or expiry of the free post-purchase service, any future manufacturer-recommended service would need to be paid for by the customer and falls under the category of paid post-purchase service. Finally, any product or service that falls outside the list recommended by the manufacturer is classified as VAS, which can either be purchased along with the vehicle or later on a post-purchase visit. These services are all managed by dedicated service employees, who do not overlap with the dealership's sales force.

*The intervention*. The incentive scheme in the control dealership assigns salespeople a quota to

[8]For an illustration of the customer process flow, please refer to Figure B2 in Appendix B.
[9]VAS is an umbrella term for a package of products (e.g., accessories kit, helmet, vehicle tracker, number plate) and services (e.g., Annual Maintenance Contract [AMC], insurance, finance, permanent registration, Paint Protection Film [PPF]).
[10]Despite this one-year restriction, the dealerships may allow exemptions up to a month in certain cases. Accounting for such exemptions for vehicles purchased towards the end of the financial year, free post-purchase service transactions can be logged up to two financial years after the financial year in which the vehicle was purchased.

meet for their bonus, along with overachievement incentives. In addition to this, the treatment dealership introduces a commission on VAS sold at the time of vehicle purchase. This commission is a percentage of gross profits earned through the sales of VAS alongside a particular vehicle. Table 2 illustrates the compensation schemes in the control and the treatment dealerships after the intervention.

Additionally, the intervention also changes the pricing scheme in place at the treatment dealership. In the control dealership, salespeople need the approval of their managers to discount any purchase, which consumes considerable time (e.g., Crainer and Dearlove 2004, p. 438). Moreover, the cost of the discount is borne by the dealership.

However, the intervention introduces the price delegation scheme such that a salesperson can offer a discount bounded above by the cumulative commission[11] earned by that salesperson in the same month. Such a design means that the dealership no longer bears the cost of the discount. Further, salespeople can offer the discount themselves without requiring any managerial approval. Table 3 compares the pricing schemes in the control and the treatment dealerships post-intervention.

Table 2: Salespeople's Compensation Schemes Post-Intervention.

| | Control | Treatment |
|---|---|---|
| Salary (Fixed Component) | ✓ | ✓ |
| Quota-Bonus on Vehicle Sales[a] | ✓ | ✓ |
| Overachievement Incentives on Vehicle Sales[a] | ✓ | ✓ |
| Commission on VAS Sales With Vehicle Purchase[a] | - | ✓ |

[a]Variable Component (Incentive).

[11]Cumulative commission refers to the total commission amount earned by the salesperson from all their previous VAS sales in the same month as the purchase being discounted.

Table 3: Pricing Schemes Post-Intervention.

| | Control | Treatment |
|---|---|---|
| Manager Approval Required for Discount | ✓ | - |
| Discount Borne by Dealership | ✓ | - |

***Impact on Sales***

While price delegation can benefit the firm, it is not obvious how the salespeople may respond to the intervention. First, the price delegation scheme saves salespeople the time they spend lobbying for discount approvals (Simester and Zhang 2014), thereby boosting their efficiency. Second, delegation provides salespeople flexibility in pricing, allowing them to leverage their private information (e.g., Alavi, Wieseke, and Guba 2016) to close sales more effectively. Third, the added potential for VAS commission is expected to improve their motivation to sell. The existing research context is novel based on how the price delegation structure is integrated with sales force incentives., Due to the unique design of the price delegation, the more VAS they sell the more they earn and the more freedom they can exercise on the pricing of the vehicle. Therefore, sales performance may be expected to improve due to the intervention.

However, some salespeople, especially low performers, might resort to suboptimal selling methods (e.g., deep-discounting, targeting low-value customers), causing adverse impact on salespeople's earnings (e.g., Chan, Li, and Pierce 2014), revenues (Larkin 2014), and firm profits (e.g., Joseph 2001). If the same product is available at the same dealership for different prices, the customer is likely to buy the product from the salesperson offering the lowest price. Such incidents may cause the high-performing salespeople, who exert more effort to sell and earn more, to feel demotivated and experience a decline in performance. Moreover, customers may lose trust in the dealership, expect infeasibly high discounts, postpone the purchase, or even

purchase from competitors instead, adversely impacting sales. The compelling arguments on both sides lead to the following research question:

*$RQ_1$: What is the impact of price delegation on sales performance?*

### *Impact on Profits*

Due to the intervention, the dealership no longer bears the cost of discounts to the customer. Therefore, gross profits per vehicle can be expected to improve. Moreover, due to the introduction of commission on VAS, salespeople may be more motivated to sell VAS. If this change leads to higher VAS sales while not affecting vehicle sales, it will result in higher gross profits.

However, gross profits may remain the same or even decrease due to a couple of reasons. First, as noted above, suboptimal selling methods enabled by the intervention can reduce unit sales, firm revenues (Larkin 2014), and firm profits (e.g., Joseph 2001). Second, since salespeople's commissions are now linked to VAS sales, they might overspend their time on selling VAS. This would increase the time spent per sale, potentially reducing salespeople's overall efficiency and sales numbers. These possibilities lead to the following research question:

*$RQ_2$: What is the impact of price delegation on firm profits?*

### *Impact on Salespeople's Incentive Earnings*

The intervention introduces an additional VAS-based commission on top of the quota-bonus scheme and over-achievement incentives present in the control dealership. Therefore, there could be a positive impact on salespeople's incentive earnings, either directly due to a higher ceiling on

earnings or indirectly due to increased motivation from the additional incentives (e.g., Vroom 1964).

However, due to selling pressures (e.g., hitting the quota) or peer competition, the salespeople might spend their entire commission as discounts. This may be particularly true of low performers, who may resort to suboptimal selling methods and extend high discounts, which has been shown to reduce salespeople's compensation (Chan, Li, and Pierce 2014). Thus, the following research question may be considered:

*$RQ_3$: What is the impact of price delegation on salespeople's incentive earnings?*

***Long-Term Impact on Firm***

While the increased autonomy due to price delegation is expected to improve customer perception and loyalty of the salesperson (Bonyuet 2019), the increased incentives are expected to improve the salesperson's motivation (e.g., Vroom 1964) and job satisfaction (e.g., Brown and Peterson 1993).

Post-purchase service transactions and revenues are directly impacted by the follow-up efforts of salespeople after the primary purchase to re-engage customers (e.g., customer calls, reminders). Since the locus of the intervention is the sales force, post-purchase service data analysis can be used to evaluate the long-term effects of price delegation on the firm's performance. A stronger customer re-engagement behavior after the initial vehicle purchase would cause free and paid service transactions and revenues to increase as more customers visit the dealership more frequently due to stronger follow-up efforts. Therefore, both free and paid service transactions and revenues may be expected to be higher in the treatment dealership post-intervention.

In contrast, the commission on VAS introduced by the intervention may lead to higher VAS selling efforts by salespeople at the time of vehicle purchase. Since there is no reason to expect an increase in the overall demand for VAS (controlling for number of vehicle purchases), higher VAS purchase rates concurrent with the vehicle purchase would translate into lower VAS purchase rates on subsequent visits. Therefore, post-purchase VAS transactions and revenues could be lower in the treatment dealership after the intervention.

However, it is difficult to ascertain the direction of the intervention's impact on the sales performance and profits of the dealership. Therefore, any long-term effect on the firm is also not obvious. The focal dealerships exclusively sell vehicles of a particular brand and are also the only dealerships to sell vehicles of that brand in their respective geographical markets[12]. This exclusivity enables us to cleanly evaluate the long-term effects of the intervention on the firm through a market share analysis of the focal brand in the geographical market that each dealership operates in. Hence, the following research question arises:

*$RQ_4$: What are the long-term effects of price delegation on the firm's performance?*

[12]The geographical boundaries of each market are defined by the focal brand.

## Methodology

### *Empirical Context*

A field experiment is conducted at two automobile dealerships in India over five years (Financial Year [FY] 2015 to FY 2019). Only one of the dealerships underwent an intervention from FY 2017 onwards. This intervention involves a delegation of pricing authority to salespeople and a change in salespeople's incentive structure. An analysis of monthly data on 15,746 vehicle sales transactions and 68,692 service transactions across both locations is used to gauge the impact of the intervention on the dealership and the sales force.

### *Empirical Design*

Figure 1 depicts each dealership's monthly trends of unit sales of vehicles, gross profits, salespeople's incentive earnings, and market share of the brand.[13] Figure 2 depicts the annual trends for the number of 3-year free post-purchase service transactions, paid post-purchase service transactions, and post-purchase VAS transactions, for all vehicles purchased in a given year. Meanwhile, Figure 3 depicts the annual trends of the 3-year revenues accrued from these transactions by post-purchase service category. In order to examine the impact of price delegation and the change in salespeople's incentive scheme on each Dependent Variable (DV), standard difference-in-differences estimators[14] are employed.

[13]For monthly trends of a few sales efficiency metrics (unit sales per salesperson, gross profits per vehicle, and incentive earnings per salesperson), please refer to Figure C1 in Appendix C.
[14]For the difference-in-differences estimates of the impact of the intervention on the sales DVs, please refer to Tables C1-C4 in Appendix C.

Figure 1: Monthly Trends of Sales Metrics.

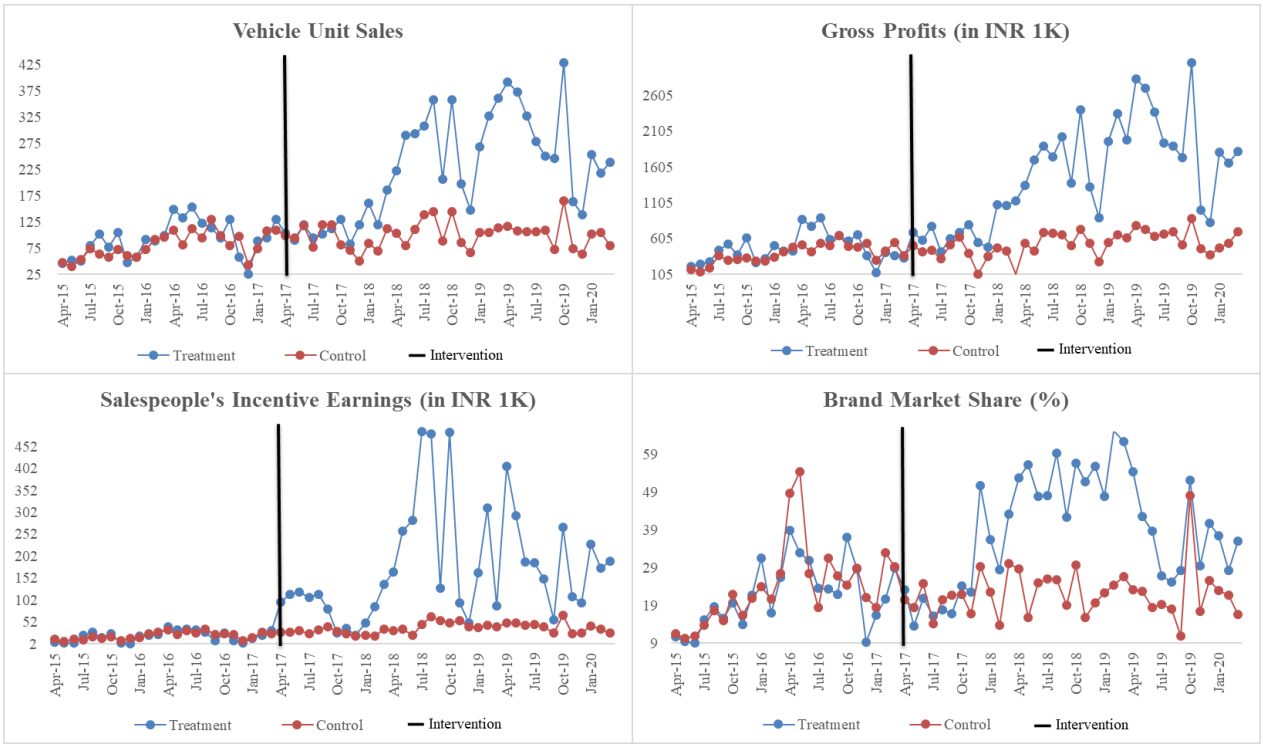



Figure 2: Annual Trends of 3-Year Post-Purchase Service Transaction Numbers by Category.

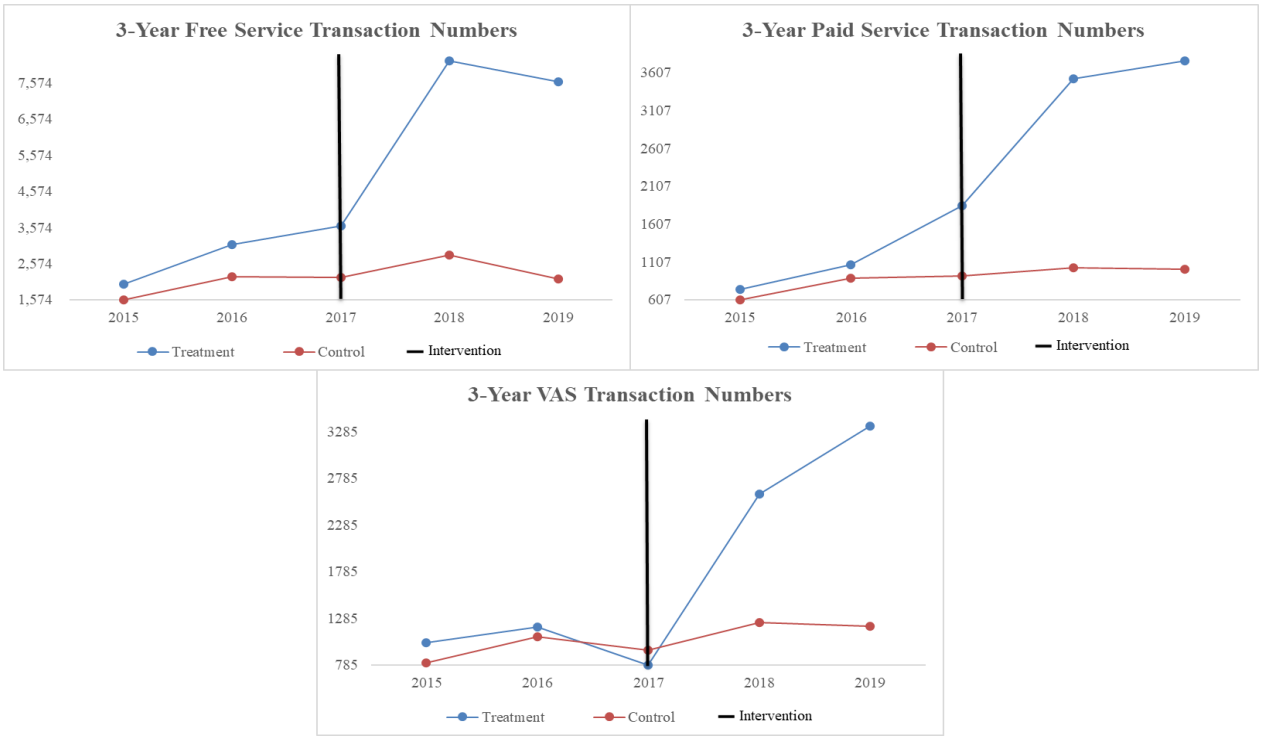
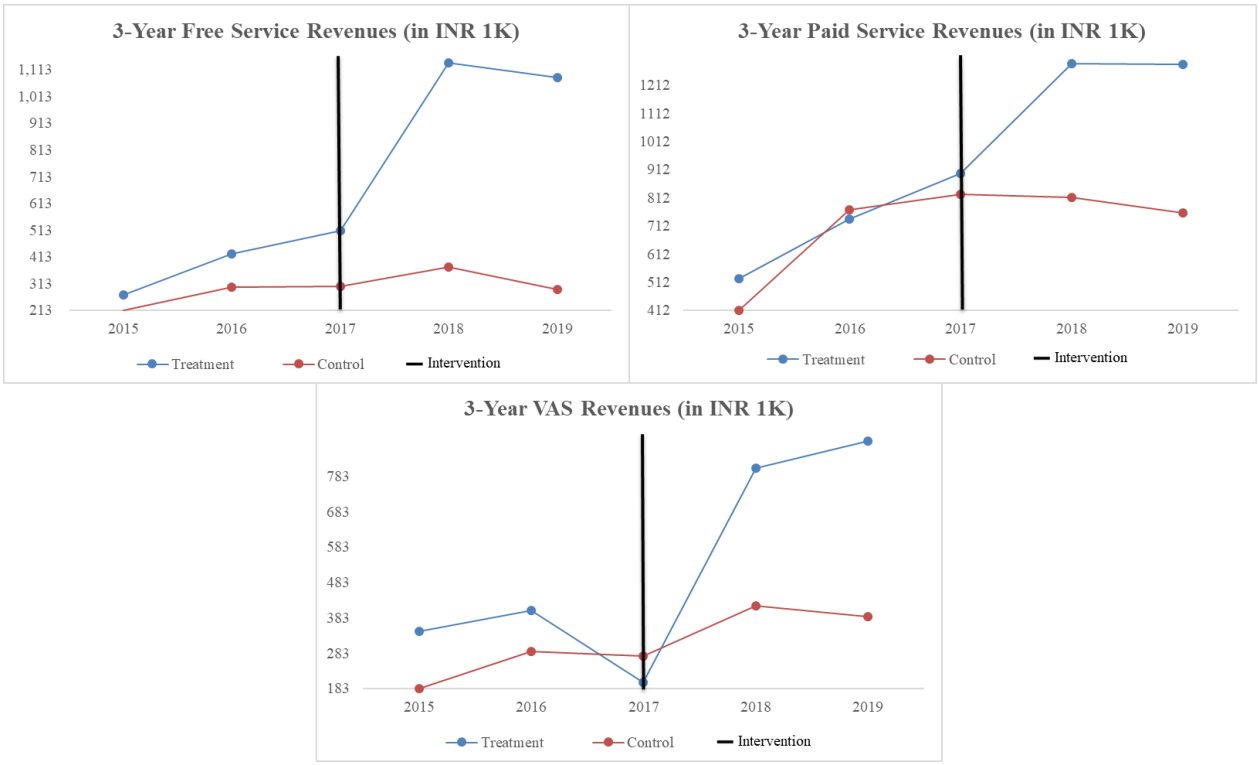


Figure 3: Annual Trends of 3-Year Post-Purchase Service Transaction Revenues by Category.




*Sales analysis.* For the sales DVs, difference-in-differences regressions are run with month- and year-fixed effects to rule out seasonality and annual shocks from impacting the results. Since there is a slight variation across time in salesperson numbers and salesperson tenure in the two dealerships, the number of salespeople and the total salesperson salary[15] in a given dealership in a given month are controlled for. The standard errors are clustered at the level of treatment following recommendations in the literature (e.g., Goldfarb, Tucker, and Wang 2022).

The model specified in Equation 1 is used to estimate the effect of the intervention on unit sales of vehicles ($RQ_1$), gross profits ($RQ_2$), salespeople's incentive earnings ($RQ_3$), and market share of the brand ($RQ_4$).

[15]Since precise data on salesperson tenure is not available, salesperson salary is used as a proxy instead since it is highly correlated with tenure.

$$\text{Dependent\_Variable}_{it} = \boldsymbol{\gamma}_t + \lambda_t + \beta_1 \times \text{Post}_t + \beta_2 \times \text{Treat}_i + \beta_3 \times \text{Post}_t \times \text{Treat}_i + \beta_4 \times \text{Sales\_Emp}_{it} + \beta_5 \times \text{Salary}_{it} + \varepsilon_{it}, \quad (1)$$

where the subscript i refers to the dealership and subscript t to the month-financial year combination. $\text{Dependent\_Variable}_{it}$ can be any one of the four chosen sales DVs (unit sales of vehicles, gross profits, salespeople's incentive earnings, and market share of the brand), $\boldsymbol{\gamma}_t$ are month-fixed effects, and $\lambda_t$ are financial year-fixed effects that influence both dealerships. $\text{Post}_t$ equals 1 if the month-financial year t lies after the intervention; $\text{Treat}_i$ equals 1 for the treatment dealership. $\text{Sales\_Emp}_{it}$ and $\text{Salary}_{it}$ respectively represent the number of salespeople and their total salary in dealership i at time t.

The coefficient $\beta_3$ represents the causal effect of the intervention on $\text{Dependent\_Variable}_{it}$. Meanwhile, $\beta_1$ represents the mean change in $\text{Dependent\_Variable}_{it}$ from before to after the intervention in the control dealership and $\beta_2$ represents the mean difference in $\text{Dependent\_Variable}_{it}$ between the treatment and control dealerships prior to the intervention, keeping the number of salespeople and the total salesperson salary fixed. Further, $\beta_4$ represents the mean change in $\text{Dependent\_Variable}_{it}$ across both dealerships and both sides of the intervention due to a unit increase in the number of salespeople, keeping the total salesperson salary constant. Finally, $\beta_5$ represents the mean change in $\text{Dependent\_Variable}_{it}$ across both dealerships and both sides of the intervention due to a unit (Indian Rupee 1K) increase in the total salesperson salary, keeping the number of salespeople constant.

However, it is important to note that the chosen sales DVs are all interdependent and jointly determined by the intervention. Therefore, the error terms in the respective regression equations ($\varepsilon_{it}$) stand to be correlated. To leverage this dependency, a Seemingly Unrelated Regression (SUR) model is run on the sales DVs, controlling for month- and year-fixed effects,

the number of salespeople and the total salesperson salary. The standard errors are clustered at the level of the treatment.

*Post-purchase service analysis.* In a similar fashion to the sales analysis, the differences-in-differences regression model specified in Equation 2 is run to examine the impact of the intervention on the number of different kinds of post-purchase service transactions and their respective revenues. It is worth noting that the number of post-purchase service transactions would naturally increase with the number of vehicles sold in a year, so it is important to control for the annual unit sales. Since there is some variation across time in the number of service employees, that is also included as a control variable. Finally, all three forms of post-purchase service transactions and their respective revenues are expected to taper off as more years pass after the purchase of the vehicle, so the lag between the financial year of vehicle purchase and the financial year of the service transaction also needs to be controlled for[16].

$$\text{Dependent\_Variable}_{ijt} = \alpha + \beta_1 \times \text{Post}_t + \beta_2 \times \text{Treat}_i + \beta_3 \times \text{Post}_t \times \text{Treat}_i + \beta_4 \times \text{Service\_Emp}_{ijt} + \beta_5 \times \text{Sales}_{it} + \beta_6 \times \text{Lag}_j + \varepsilon_{it}, \quad (2)$$

where the subscript i refers to the dealership, subscript t to the financial year, and subscript j to the purchase-service lag. $\alpha$ refers to the intercept. $\text{Dependent\_Variable}_{ijt}$ can be any one of the six chosen post-purchase service DVs (number of free service transactions, number of paid service transactions, number of VAS transactions, free service revenues, paid service revenues, and VAS revenues). $\text{Post}_t$ equals 1 if the financial year t lies after the intervention; $\text{Treat}_i$ equals 1 for the

[16]Since free service transactions are logged only up to two financial years after the year of vehicle purchase, the number of free service transactions and free service revenues have only zero values for all lag values greater than 3, irrespective of the financial year of purchase.

treatment dealership. $Lag_j$ represents the financial year number (starting from 1)[17] in which the post-purchase service is availed after the vehicle purchase. Meanwhile, $Service\_Emp_{ijt}$ represents the number of service employees in dealership i at the financial year of post-purchase service[18] for a vehicle purchased in financial year t and a purchase-service lag of j. $Sales_{it}$ represents the vehicle unit sales in dealership i at financial year t.

The coefficient $\beta_3$ represents the causal effect of the intervention on $Dependent\_Variable_{ijt}$. Meanwhile, $\beta_1$ represents the mean change in $Dependent\_Variable_{ijt}$ from before to after the intervention in the control dealership and $\beta_2$ represents the mean difference in $Dependent\_Variable_{ijt}$ between the treatment and control dealerships prior to the intervention across all purchase-service lags, keeping the number of service employees and the vehicle unit sales fixed. Further, $\beta_4$ represents the mean change in $Dependent\_Variable_{ijt}$ across both dealerships, both sides of the intervention, and all purchase-service lags due to a unit increase in the number of service employees, keeping the vehicle unit sales constant. $\beta_5$ represents the mean change in $Dependent\_Variable_{ijt}$ across both dealerships, both sides of the intervention, and all purchase-service lags due to a unit increase in the vehicle unit sales, keeping the number of service employees constant. Finally, $\beta_6$ represents the mean change in $Dependent\_Variable_{ijt}$ across both dealerships and both sides of the intervention due to a unit increase in the purchase-service lag, keeping the number of service employees and the vehicle unit sales fixed.

As in the case of the sales DVs, two Seemingly Unrelated Regression (SUR) models are run on the two sets of chosen post-purchase service DVs (number of post-purchase service transactions and post-purchase service revenues), controlling for annual vehicle unit sales, the

[17]A purchase-service lag of 1 implies that the service transaction is in the same financial year as the vehicle purchase.
[18]For a vehicle purchased in financial year t and a purchase-service lag of j, the financial year of post-purchase service is (t + j -1).

number of service employees, and the purchase-service lag. The standard errors are clustered at the level of the treatment.

***Results***

Table 4 presents the results from the SUR analysis[19] of the sales DVs. Meanwhile, Tables 5 and 6 respectively present the results of the SUR models on the number of post-purchase service transactions and the revenues accrued from post-purchase services of each kind.

*Impact on vehicle unit sales.* Table 4 results show that the treatment dealership shows significantly greater improvement in vehicle unit sales ($\beta_3 = 35.805$, $p < .01$) after the intervention. This result shows that price delegation along with the new sales force incentive scheme led to around ~36 more monthly vehicle sales in the treatment dealership than in the control dealership, suggesting that the intervention had a positive impact on sales performance ($RQ_1$).

*Impact on gross profits.* The treatment dealership shows significantly higher values of post-intervention gross profits than the control dealership ($\beta_3 = 371.693$, $p < .01$). This finding suggests that the overall post-intervention gross profits were higher in the treatment dealership than in the control dealership by a monthly margin of INR 3,71,693, indicating a positive impact of the intervention on firm profits ($RQ_2$).

*Impact on salespeople's incentive earnings.* Table 4 demonstrates that the treatment dealership

[19]For the results from the non-SUR regression model of the sales DVs as specified in Equation 1, please refer to Table C5 in Appendix C.

shows significantly higher salespeople's incentive earnings ($\beta_3 = 73.485$, $p < .01$). Therefore, it can be concluded that after the intervention, salespeople in the treatment dealership earned a total of INR 73,485 more in a month compared to the control dealership ($RQ_3$).

*Impact on brand market share.* Table 4 results show that post-intervention market share of the focal brand in the treatment dealership location shows significantly greater improvement ($\beta_3 = 11.002$, $p < .01$) after the intervention. Therefore, price delegation coupled with the new sales force incentives led to 11.002% more market share of the focal brand in the treatment dealership location than the control dealership location, suggesting a positive effect of the intervention on the long-term performance of the firm ($RQ_4$).

*Impact on post-purchase service transaction numbers.* Table 5 shows that the numbers of both free and paid post-purchase service transactions are significantly higher in the treatment dealership post-intervention ($\beta_3 = 204.813$, $p < .01$; $\beta_3 = 166.225$, $p < .01$), supporting the prior findings. However, the number of post-purchase VAS transactions show a significant decline in the treatment dealership after the intervention ($\beta_3 = -52.754$, $p < .01$). Therefore, after the intervention, the treatment dealership annually sees around ~205 more free post-purchase service transactions, around ~166 more paid post-purchase service transactions, but around ~53 less VAS post-purchase transactions. These results support the finding that the intervention positively impacted the long-term performance of the firm ($RQ_4$).

*Impact on post-purchase service revenues.* Table 6 demonstrates that both free and paid post-purchase service revenues significantly rise in the treatment dealership post-intervention ($\beta_3 =$

32.468, $p < .01$; $\beta_3 = 9.265$, $p < .05$). However, post-purchase VAS revenues are significantly lower in the treatment dealership after the intervention ($\beta_3 = -36.162$, $p < .01$). Therefore, in the post-intervention period, the treatment dealership annually generates INR 32,468 more free post-purchase service revenues, INR 9,265 more paid post-purchase service revenues, but INR 36,162 less post-purchase VAS revenues. These results provide additional confidence in the positive long-term effects of the intervention on the firm ($RQ_4$).

Table 4: SUR Analysis of Impact of the Intervention on Sales DVs.

| | **Unit Sales** | **Gross Profits**[a] | **Incentives**[a] | **Market Share**[b] |
|---|---|---|---|---|
| Post ($\beta_1$) | 41.196* | 363.885** | 47.831*** | 2.091 |
| | (21.441) | (150.846) | (7.382) | (2.563) |
| Treat ($\beta_2$) | 20.761** | 123.385* | 37.873*** | .429 |
| | (10.010) | (64.715) | (11.203) | (.795) |
| Post × Treat ($\beta_3$) | 35.805*** | 371.693*** | 73.485*** | 11.002*** |
| | (3.231) | (3.401) | (3.044) | (.620) |
| Sales_Emp ($\beta_4$) | 12.243*** | 71.645** | 24.986*** | 1.980*** |
| | (4.434) | (30.367) | (5.610) | (.317) |
| Salary[a] ($\beta_5$) | -.128 | -.231 | -1.181*** | -.068** |
| | (.358) | (2.268) | (.383) | (.029) |
| *N* | 120 | 120 | 120 | 120 |
| Month FE | YES | YES | YES | YES |
| Financial Year FE | YES | YES | YES | YES |

*$p < .10$, **$p < .05$, ***$p < .01$
[a]Units are in Indian Rupee (INR) 1K.
[b]Units are in %.
*Notes*: Clustered standard errors at the level of treatment in parentheses.

Table 5: SUR Analysis of Impact of the Intervention on Post-Purchase Service Transactions.

| | **Free Service** | **Paid Service** | **VAS** |
|---|---|---|---|
| Post ($\beta_1$) | -316.145** (135.914) | -90.455*** (15.603) | -124.755*** (27.205) |
| Treat ($\beta_2$) | -55.559* (33.106) | -89.535*** (22.684) | -119.774** (52.307) |
| Post × Treat ($\beta_3$) | 204.813*** (1.458) | 166.225*** (23.252) | -52.754*** (7.029) |
| Service_Emp ($\beta_4$) | 31.339** (13.033) | 35.587*** (9.949) | 48.470** (20.393) |
| Sales ($\beta_5$) | .603*** (.008) | .314*** (.014) | .293*** (.016) |
| Lag ($\beta_6$) | -381.496*** (104.572) | -83.299*** (16.820) | -123.790*** (6.455) |
| *N* | 50 | 50 | 50 |

*$p < .10$, **$p < .05$, ***$p < .01$
*Notes*: Clustered standard errors at the level of treatment in parentheses.

Table 6: SUR Analysis of Impact of the Intervention on Post-Purchase Service Revenues.

| | **Free Service Revenues**[a] | **Paid Service Revenues**[a] | **VAS Revenues**[a] |
|---|---|---|---|
| Post ($\beta_1$) | -44.222** (18.935) | 20.031 (16.203) | -28.114*** (2.580) |
| Treat ($\beta_2$) | -11.793* (6.373) | -54.220** (24.030) | -33.035*** (1.042) |
| Post × Treat ($\beta_3$) | 32.468*** (.637) | 9.265** (3.681) | -36.162*** (5.211) |
| Service_Emp ($\beta_4$) | 6.066** (2.494) | 18.934* (9.659) | 19.393*** (.193) |
| Sales ($\beta_5$) | .085*** (.002) | .093*** (.002) | .083*** (.004) |
| Lag ($\beta_6$) | -51.090*** (13.987) | -23.598*** (7.006) | -37.506*** (1.175) |
| *N* | 50 | 50 | 50 |

*$p < .10$, **$p < .05$, ***$p < .01$
[a]Units are in INR 1K.
*Notes*: Clustered standard errors at the level of treatment in parentheses.

## Discussion

### *Synthesis of Findings*

This study analyzes data from 15,746 vehicle sales transactions and 68,692 vehicle service transactions from a field experiment conducted across two automobile dealerships in India over five years to assess the short-term and long-term impact of price delegation on the firm's performance. While the control dealership continued centrally determined pricing through the entire duration of the study, the treatment dealership started delegating pricing authority to its salespeople from the 3rd year onwards. The study demonstrates that the intervention had a significant positive impact on the sales performance and profits of the dealership. Results also show that the market share of the location where the intervention was deployed improved significantly. An analysis of the post-purchase service transaction data finds that free and paid post-purchase service transactions increase in numbers and revenues due to the intervention. These results suggest that price delegation can have a positive impact on firm performance, both in the short-term and in the long run. At the same time, salespeople's total earnings from sales incentives also went up, leading to a win-win situation for the firm and its sales force.

### *Theoretical Contributions*

This study contributes to the existing literature by advancing the understanding of pricing strategies in organizational contexts in a couple of ways. First, while previous research has been unable to reach a consensus on the effectiveness of price delegation through studies of analytical models (e.g., Joseph 2001; Weinberg 1975) and limited empirical designs (e.g., Jindal and Newberry 2022; Larkin 2014), this is on of the first work to empirically examine the real-world effectiveness of price delegation through a field experiment. Findings suggest that price

delegation can have a significant positive impact on a firm's sales performance (e.g., sales volume). Moreover, this study demonstrates that price delegation can be effective in improving the firm's profits in industries plagued by low margins, such as the focal (Indian automobile) industry.

Second, this is one of the first research to investigate the long-term impact of price delegation schemes on the firm's performance. Results indicate that price delegation can improve the market share of the firm and increase customer re-engagement behavior (e.g., post-purchase service volume and revenues) after the initial purchase. In doing so, the current study provides field evidence of both the short-term and long-term effectiveness of price delegation as an empirical test of prior literature that has proposed price delegation as a theoretical alternative or complement to centralized pricing strategies (e.g., Lal 1986).

Third, the results indicate that price delegation integrated with sales incentives can induce motivation in salespeople to improve their sales performance and incentive earnings. In particular, the study finds evidence that such an approach to price delegation may alleviate some concerns (e.g., moral hazard [Holmström 1979]) with high pricing authority discussed in previous literature (e.g., Larkin 2014; Joseph 2001). For instance, in the current context, a commission on VAS sales was introduced, which the salesperson could leverage to discount purchases. This change resulted in significantly higher sales volumes and incentive earnings for the salespeople, while the firm logged higher gross profits. Moreover, the analysis of post-purchase service transactions indicates higher customer re-engagement behavior after the vehicle purchase, which provides evidence that salespeople's customer follow-up efforts may have increased due to the deployment of price delegation. Therefore, the price delegation scheme led to a win-win situation for the firm and its salespeople.

### *Managerial Implications*

The results of this study have significant implications for managers, particularly in relation to pricing strategies and sales incentive schemes. First, managers should strongly consider price delegation as an effective pricing strategy. This study shows that price delegation can increase sales performance, profits, and market share of the firm. Therefore, price delegation is an attractive alternative to centrally determined pricing that can boost both the short-term and long-term performance of the firm.

Second, managers may find it useful to integrate price delegation into salespeople's incentive schemes. The current study shows that such an integration can not only motivate sales teams but also align their goals with those of the company, resulting in improved sales performance and a likely increase in salespeople's customer follow-up efforts after the initial purchase. Moreover, the current context shows that salespeople improve their incentive earnings in response to price delegation.

Third, managers may find that incorporating price delegation schemes with secondary offerings can be a strategic tool to enhance financial outcomes in competitive environments. In the current context, price delegation alongside VAS purchases substantially increased company profits in a low-margin industry.

### *Limitations and Future Research*

While the current study uncovers the short-term and long-term impact of price delegation on firm performance, there exist a few limitations that can also serve as promising avenues for future research. First, the field experiment is conducted across two dealerships in the automobile industry. Although it is unlikely that effectiveness of price delegation would drastically change

across industries, further studies could explore whether the current findings hold across different empirical settings.

Second, price delegation schemes can be challenging from an operational standpoint. When conferred autonomy on pricing decisions, inexperienced salespeople may initially face difficulties navigating the intricate balance between managing customer interactions and making decisions. Therefore, new recruits may require additional support or training in order to contribute effectively to the overall goals of customer engagement and company profitability.

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# Appendix

## Table of Contents

## Appendix A

### Differences of Current Work From Jindal and Newberry (2022)

Jindal and Newberry (2022; hereinafter J&N] leverage field data to construct a structural model and find that price negotiations can increase firm profits, especially in the presence of a revenue-based quota. The current study builds on J&N in two main ways.

First, while J&N examine the efficacy of price negotiations in the presence of a quota, the present research compares the effectiveness of commission-bound price delegation vs. merely price negotiations, in the presence of a quota. Such a design carries a couple of advantages. One, salespeople negotiating prices with customers without final pricing authority can lead to a loss of productivity since discount authorization can be time-consuming (e.g., Simester and Zhang 2014; Crainer and Dearlove 2004). Delegating pricing authority can address this concern by allowing salespeople to determine prices on their own without managerial approval. Two, price negotiations can lead salespeople to reduce selling effort (Hansen, Joseph, and Krafft 2008), leading to lower revenues (Larkin 2014) and profits (Joseph 2001). In fact, J&N also find evidence of mispricing when salespeople approach quota completion. Anchoring the delegation threshold to the salespeople's earned commissions can align salespeople's interests with that of the firm, preventing moral hazard concerns.

Second, J&N utilize field data from a random sample of 5,378 sales transactions across 1 year at an appliance retailer in the US to build a structural model. In contrast, the current study conducts a field experiment across 5 years at two automobile dealerships in India and analyzes data from all of 15,746 vehicle sales transactions and 68,692 vehicle service transactions that occurred during this period. Moreover, the study also leverages component-wise data on

salespeople's monthly incentive earnings across these 5 years. This empirical design benefits the research due to three reasons. One, the field experimental approach enables a clean and robust identification of the effectiveness of price delegation in a real-life setting. The large and exhaustive volume of transactions also provides confidence in the validity of the findings. Two, while J&N explore the impact on price negotiations on firm profits, the availability of monthly data on vehicle sales, firm profits, and salespeople's component-wise incentives allows the current work to examine the impact of price delegation on the firm's sales performance, profitability, and salespeople's compensation. Three, while the data in J&N across 1 year allowed the investigation of only the short-term impact on revenues, the 5-year duration of the field experiment and the availability of data on market share and service transactions permit this study to explore the long-term impact of price delegation on firm and salesperson performance.

## Appendix B

Figure B1: The Sales Process Flow.

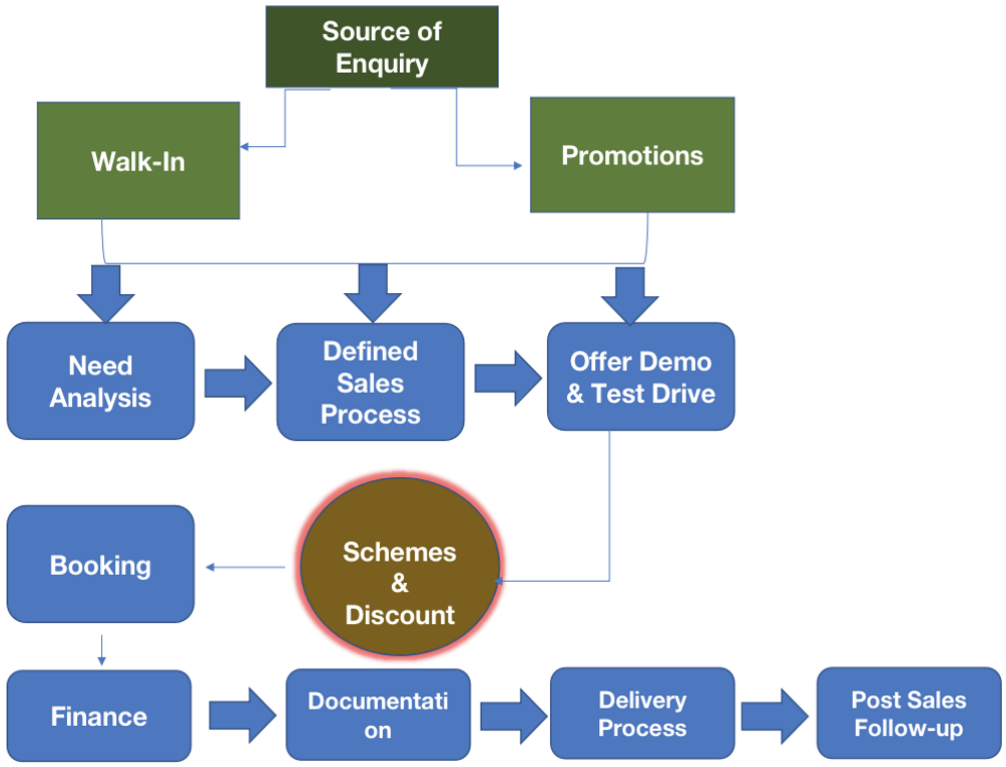
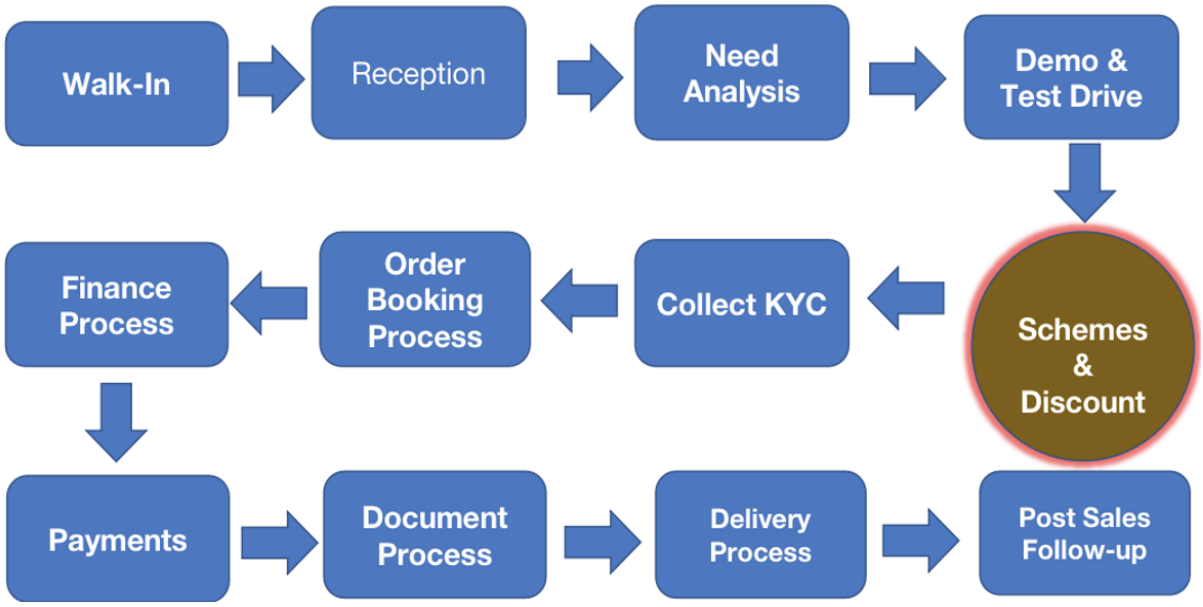



Figure B2: The Customer Process Flow.



## Appendix C

Figure C1: Monthly Trends of Sales Efficiency Metrics.

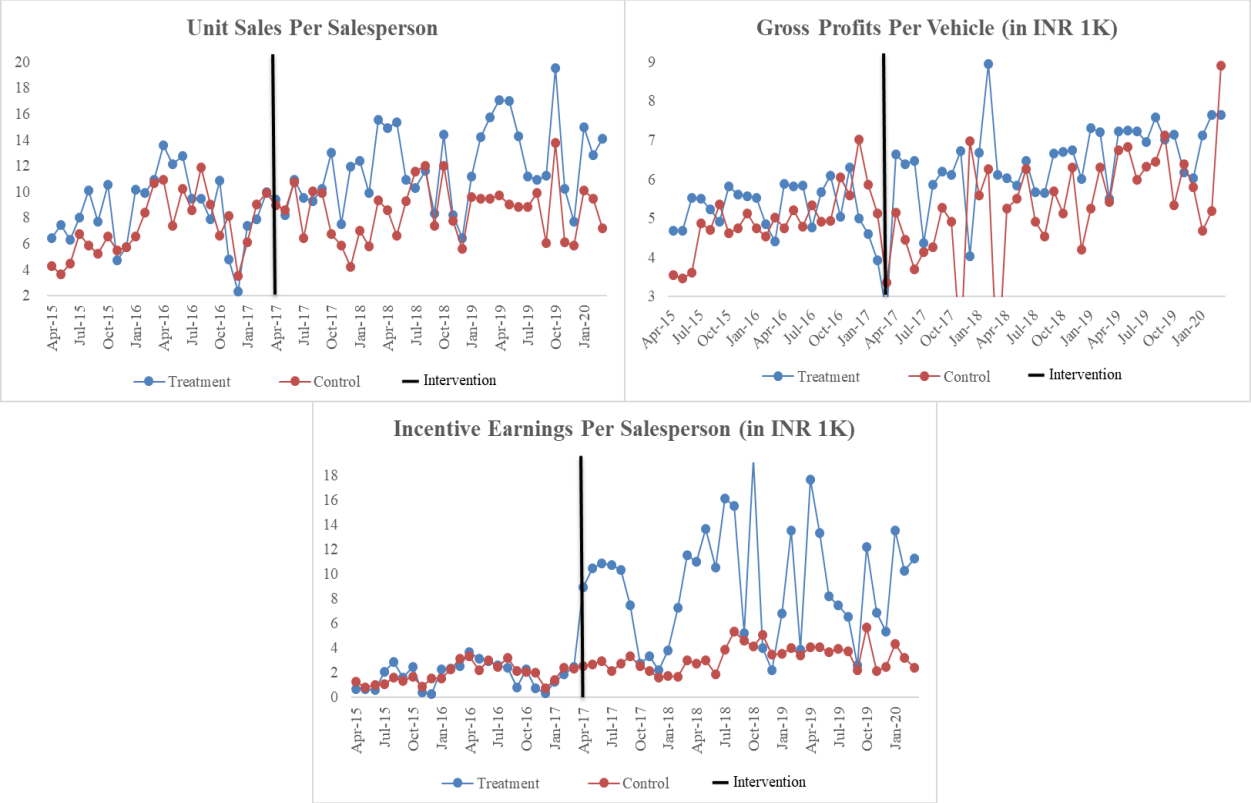



Table C1: Impact of the Intervention on Vehicle Unit Sales.

| Time Period (FY) | Vehicle Unit Sales | Pre vs Post | Vehicle Unit Sales | Pre vs Post | Treatment vs Control | Treatment vs Control |
|---|---|---|---|---|---|---|
| | Treatment | Treatment | Control | Control | | Pre vs Post |
| 2015-16 | 892 | | 784 | | **Pre** | |
| 2016-17 | 1288 | | 1133 | | | |
| **Avg Pre** | 1090 | | 958.5 | | 131.5 | |
| 2017-18 | 1419 | 1601 | 1092 | 233.5 | | **1367.5** |
| 2018-19 | 3343 | | 1281 | | **Post** | |
| 2019-20 | 3311 | | 1203 | | | |
| **Avg Post** | 2691 | | 1192 | | 1499 | |

Table C2: Impact of the Intervention on Gross Profits.

| Time Period (FY) | Gross Profits[a] | Pre vs Post | Gross Profits[a] | Pre vs Post | Treatment vs Control | Treatment vs Control |
|---|---|---|---|---|---|---|
| | **Treatment** | **Treatment** | **Control** | **Control** | | **Pre vs Post** |
| 2015-16 | 4631.819 | | 3608.202 | | **Pre** | |
| 2016-17 | 6579.138 | | 5759.636 | | | |
| **Avg Pre** | 5605.478 | | 4683.919 | | 921.559 | |
| 2017-18 | 8834.856 | 12229.111 | 4676.820 | 1649.435 | | **10579.676** |
| 2018-19 | 20999.662 | | 6860.888 | | **Post** | |
| 2019-20 | 23669.249 | | 7462.353 | | | |
| **Avg Post** | 17834.589 | | 6333.354 | | 11501.235 | |

[a]Units are in INR 1K.

Table C3: Impact of the Intervention on Salespeople's Incentive Earnings.

| Time Period (FY) | Incentive Earnings[a] | Pre vs Post | Incentive Earnings[a] | Pre vs Post | Treatment vs Control | Treatment vs Control |
|---|---|---|---|---|---|---|
| | **Treatment** | **Treatment** | **Control** | **Control** | | **Pre vs Post** |
| 2015-16 | 173.091 | | 187.570 | | **Pre** | |
| 2016-17 | 288.981 | | 302.590 | | | |
| **Avg Pre** | 231.036 | | 245.080 | | -14.044 | |
| 2017-18 | 995.342 | 1882.127 | 336.345 | 201.725 | | **1680.402** |
| 2018-19 | 2994.275 | | 523.340 | | **Post** | |
| 2019-20 | 2349.872 | | 480.731 | | | |
| **Avg Post** | 2113.163 | | 446.805 | | 1666.358 | |

[a]Units are in INR 1K.

Table C4: Impact of the Intervention on the Focal Brand's Market Share.

| Time Period (FY) | Market Share[a] | Pre vs Post | Market Share[a] | Pre vs Post | Treatment vs Control | Treatment vs Control |
|---|---|---|---|---|---|---|
| | **Treatment** | **Treatment** | **Control** | **Control** | | **Pre vs Post** |
| 2015-16 | 17.446 | 17.183 | 17.545 | -1.697 | **Pre** | **18.880** |
| 2016-17 | 26.075 | | 30.237 | | | |
| **Avg Pre** | 21.760 | | 23.891 | | -2.131 | |
| 2017-18 | 26.184 | | 21.217 | | **Post** | |
| 2018-19 | 53.933 | | 23.256 | | | |
| 2019-20 | 36.711 | | 22.109 | | | |
| **Avg Post** | 38.943 | | 22.194 | | 16.749 | |

[a]Units are in %.

Table C5: Non-SUR Regression of Impact of the Intervention on Sales DVs.

| | **Unit Sales** | **Gross Profits[a]** | **Incentives[a]** | **Market Share[b]** |
|---|---|---|---|---|
| Post ($\beta_1$) | 41.196<br>(23.390) | 363.885<br>(164.554) | 47.831<br>(8.053) | 2.091<br>(2.795) |
| Treat ($\beta_2$) | 20.761<br>(10.918) | 123.385<br>(70.596) | 37.873<br>(12.222) | .429<br>(.868) |
| Post × Treat ($\beta_3$) | 35.805$^{*}$<br>(3.525) | 371.693$^{***}$<br>(3.710) | 73.485$^{**}$<br>(3.321) | 11.002$^{**}$<br>(.676) |
| Sales_Emp ($\beta_4$) | 12.243<br>(4.837) | 71.645<br>(33.126) | 24.986<br>(6.120) | 1.980<br>(.346) |
| Salary[a] ($\beta_5$) | -.128<br>(.391) | -.231<br>(2.474) | -1.181<br>(.417) | -.068<br>(.032) |
| *N* | 120 | 120 | 120 | 120 |
| Month FE | YES | YES | YES | YES |
| Financial Year FE | YES | YES | YES | YES |

$^{*}p < .10$, $^{**}p < .05$, $^{***}p < .01$

[a]Units are in INR 1K.

[b]Units are in %.

*Notes*: Clustered standard errors at the level of treatment in parentheses.