A Structural Model of a Multi-Tasking Salesforce: Job Task Allocation and Incentive Plan Design

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The paper empirically explores questions of (i) how to allocate job task (specialization versus multi-tasking) in the presence of task complementarities and (ii) how to combine outcomes across tasks (e.g., additive versus multiplicative) in compensation plan design. To answer these questions, we develop the first structural model of a *multi-tasking salesforce*. The model incorporates three novel features, relative to the extant structural models of salesforce compensation: (i) multi-tasking effort choice given a multi-dimensional incentive plan; (ii) salesperson's private information about customers and (iii) dynamic intertemporal trade-offs in effort choice across the two tasks. While the model is motivated by our empirical application that uses data from a microfinance bank where loan officers are jointly responsible and incentivized for both *loan acquisition and repayment*, it is more generally adaptable to salesforce management in CRM settings focused on customer acquisition and retention. Our estimation strategy extends two-step estimation methods used for uni-dimensional compensation plans for the multi-tasking model with private information and intertemporal incentives. We combine flexible machine learning (random forest) for the identification of private information and the first stage multi-tasking policy function estimation. Estimates reveal two latent segments of salespeople–a "hunter" segment that is more efficient on loan acquisition and a "farmer" segment that is more efficient on loan collection. Counterfactual analyses show (i) that joint responsibility for acquisition and collection leads to better outcomes for the firm than specialized responsibilities even when salespeople are matched with their more efficient tasks and (ii) that aggregating performance on multiple tasks using an additive function leads to substantial *adverse specialization* of "hunters", where they specialize on acquisition at the expense of the firm, compared to the multiplicative form used by the firm.

Key words: salesforce compensation, multitasking, multidimensional incentives, private information, adverse selection, moral hazard