The Behavioral Promise and Pitfalls in Compensating Store Managers

Compensation systems have been shifting away rapidly from a fixed wage basis. Many companies today are creating incentive compensation schemes to reward employees with good performances. Incentive compensation can be a powerful tool to properly align employees with the achievement of the company’s objectives, but designing a good incentive compensation system is never an easy task for the top management of any company.

This paper focuses on a store management setting where an employee is tasked to manage a store owned by a retailing company (the firm). This setting naturally requires the employee to make two kinds of decisions. The first is the inventory decision, modeled with a newsvendor setting. The second is an “effort” decision that influences customer demand. The use of the notion of effort is common in incentive contract design research to capture the moral hazard problem. In the case of operating a retail store, the effort can represent many actions, such as providing attractive shelf space, guiding consumer purchases with sales personnel, point-of sale, etc. We believe that introducing an operational context (i.e. inventory) into the moral hazard problem is an important step to advance the science of incentive design because of the non-trivial interactions between operations and moral hazard. Moreover, this particular combination in the store management context is prevalent in practice, and the outcomes of this study should provide relevant business guidance.

In the past two decades, behavioral operations management researchers find that humans often exhibit various forms of irrational, non-optimizing behaviors in operations settings. It has been shown that human decision behavior is context sensitive. In particular, participants exhibited systematic differences in their decisions when they faced a standard newsvendor problem as opposed to when they faced the same mathematical problem but framed as lotteries. This further
strengthens the choice of our setting as the more generic, context independent incentive design research, particularly popular in economics, may not be relevant to the context of store management.

Compensation plans can take many forms, the focus of this research is on two popular and widely used incentive compensation schemes. The first, of the two schemes, is profit sharing (“Sharing” thereafter), where store managers earn a fraction of the firm’s profit. Prior studies have shown that Sharing is adopted widely and there is some evidence that it can address the agency problem. The second incentive compensation scheme, we consider, is target-with-bonus (“Target” thereafter) where the store manager will receive a pre-determined, and known, bonus if a performance target is met. Prior studies have shown that the implementation of Target can greatly improve firm performance. While these two compensation schemes have been studied, there is little work to characterize when and why one should be preferred, especially in a retail setting.

In this paper, we develop a game theoretic analytic model for the setting where the firm sets the contract parameter(s) and the store manager makes effort level and order quantity decisions. Under this model, we find that under a wide range of conditions, the target compensation contract is better for the firm. Second, we conduct a series of human-subject experiments and reveal systematic deviations from the theoretical benchmarks. We show that the target compensation contract has strong advantages over the sharing compensation contract, but not without its disadvantages. In particular, the store manager is more willing to exert high effort under the target contract, with all else equal. However, the store manager is also more likely to punish the firm by submitting an extremely low or zero order quantity. Motivated by these observations, we develop a behavioral model that incorporates quantal responses equilibrium and a modified version of the fairness concerns. Our analysis suggests that bounded rationality plays an important role in driving a higher effort rate under the target contract than the sharing contract, controlling for the offer from the firm. The diminishing return of the fairness concern, a new feature we introduced
into the inequality aversion formulation, explains the much higher penalty rate in the target contract. Finally, we engineer a new hybrid compensation contract with features from both the sharing and the target contracts. A validation experiment shows that this new hybrid design is successful in improving the firm's profit.

This paper informs on incentive management of store managers on two fronts. We identify key incentive principles that firms should pay attention to, and test specific incentive compensation contracts that can be readily used in practice. From a design perspective, firms should pay attention to multiple behaviors highlighted in our study. First, the target compensation contract encourages more effort, given the same levels of offer, compared to the sharing compensation contract. Second, the fairness concern is important and can averse affect the firm's performance. The backlash against executive pay, often in the news, is evidence that fairness is an important consideration on the part of the store managers. In practice, firms should guard against store manager sabotaging company performance because they feel that compensation contracts are unfair. Third, the fairness concern exhibits very different properties under the sharing and the target compensation contracts. Fairness is more “binary” in the target contract, which suggests that it is important to offer a target-bonus pair that passes the manager's fairness threshold, or risk a drastic negative reaction. On the other hand, the firm can tune a sharing compensation contract in a much more continuous fashion, trading off effort and compensation. From an engineering standpoint, we design and test a new compensation contract (i.e. the hybrid contract), that fixes the fairness issue while retaining the benefit of the target compensation contract. This hybrid contract incorporates both a target incentive and a profit sharing structure. We show that this hybrid contract can improve the profitability of the firm, as a result of keeping the merits from both target-only and sharing-only contracts, in particular, the hybrid contract motivates high efforts with lower offers (benefit of the target contract) but the penalty rate is kept low (benefit of the sharing contract).