A Practical Approach to Sales Compensation: What Do We Know Now? What Should We Know in the Future?

Other titles in Foundations and Trends® in Marketing

Entertainment Marketing
Natasha Zhang Foutz
ISBN: 978-1-68083-332-4

The Cultural Meaning of Brands
Carlos J. Torelli, Maria A. Rodas and Jennifer L. Stoner
ISBN: 978-1-68083-286-0

Ethnography for Marketing and Consumer Research
Alladi Venkatesh, David Crockett, Samantha Cross and Steven Chen
ISBN: 978-1-68083-234-1

The Information-Economics Perspective on Brand Equity
Tulin Erdem and Joffre Swait
ISBN: 978-1-68083-168-9

A Practical Approach to Sales Compensation: What Do We Know Now? What Should We Know in the Future?

Doug J. Chung
Harvard University
USA
dchung@hbs.edu

Byungyeon Kim
Harvard University
USA
bkim@hbs.edu

Niladri B. Syam
University of Missouri
USA
syamn@missouri.edu

the essence of knowledge
Boston — Delft

Foundations and Trends® in Marketing

Published, sold and distributed by:
now Publishers Inc.
PO Box 1024
Hanover, MA 02339
United States
Tel. +1-781-985-4510
www.nowpublishers.com
sales@nowpublishers.com

Outside North America:
now Publishers Inc.
PO Box 179
2600 AD Delft
The Netherlands
Tel. +31-6-51115274

The preferred citation for this publication is

D. J. Chung, B. Kim and N. B. Syam. *A Practical Approach to Sales Compensation: What Do We Know Now? What Should We Know in the Future?*. Foundations and Trends® in Marketing, vol. 14, no. 1, pp. 1–52, 2020.

ISBN: 978-1-68083-685-1

Foundations and Trends® in Marketing
Volume 14, Issue 1, 2020

Editorial Board

Editorial Scope

Topics

Foundations and Trends® in Marketing publishes survey and tutorial articles in the following topics:

- B2B Marketing
- Bayesian Models
- Behavioral Decision Making
- Branding and Brand Equity
- Channel Management
- Choice Modeling
- Comparative Market Structure
- Competitive Marketing Strategy
- Conjoint Analysis
- Customer Equity
- Customer Relationship Management
- Game Theoretic Models
- Group Choice and Negotiation
- Discrete Choice Models
- Individual Decision Making
- Marketing Decisions Models
- Market Forecasting
- Marketing Information Systems
- Market Response Models
- Market Segmentation
- Market Share Analysis
- Multi-channel Marketing
- New Product Diffusion
- Pricing Models
- Product Development
- Product Innovation
- Sales Forecasting
- Sales Force Management
- Sales Promotion
- Services Marketing
- Stochastic Model

Information for Librarians

Foundations and Trends® in Marketing, 2020, Volume 14, 4 issues. ISSN paper version 1555-0753. ISSN online version 1555-0761. Also available as a combined paper and online subscription.

Contents

A Practical Approach to Sales Compensation: What Do We Know Now? What Should We Know in the Future?

Doug J. Chung[1], Byungyeon Kim[2] and Niladri B. Syam[3]

[1] *Harvard University, USA; dchung@hbs.edu*
[2] *Harvard University, USA; bkim@hbs.edu*
[3] *University of Missouri, USA; syamn@missouri.edu*

ABSTRACT

Personal selling represents one of the most important elements in the marketing mix, and appropriate management of the sales force is vital to achieving the organization's objectives. Among the various instruments of sales management, compensation plays a pivotal role in motivating and incentivizing sales agents. This monograph reviews the evolution of research in sales compensation and discusses future trends and opportunities. Specifically, it examines the managerial relevance of the theoretical foundations, discussing the underlying reasons for their applicability (or lack thereof) in practice. Furthermore, the monograph surveys recent empirical methods—including field experiments and structural econometrics—that are practical for analyzing sales agents' behavior under various compensation systems. It also discusses prominent areas of future research in the midst of a changing sales environment. In particular, this monograph sheds light on how the use of big data, machine

Doug J. Chung, Byungyeon Kim and Niladri B. Syam (2020), "A Practical Approach to Sales Compensation: What Do We Know Now? What Should We Know in the Future?", Foundations and Trends® in Marketing: Vol. 14, No. 1, pp 1–52. DOI: 10.1561/1700000063.

learning, and artificial intelligence can affect sales strategy formulation and, thus, sales compensation systems to better motivate and incentivize an organization's sales force.

Keywords: sales compensation; sales management; sales strategy; principal-agent theory; structural econometrics; field experiments; machine learning; artificial intelligence.

1

Introduction

Personal selling plays a significant role in the world economy. In the United States, salespeople number around 15 million,[1] representing more than 10% of the entire labor force (U.S. Department of Labor, 2018). A single salesperson[2] generates, on average, \$10 million and \$8.8 million in annual sales in the U.S. manufacturing and service industries, respectively (Selling Power, 2019). The significance of these figures suggests that motivating salespeople in order to positively affect their behavior is vital to an organization's success. Sales force costs are the single largest marketing expenditure for U.S. firms, accounting for, on average, 10% of sales revenues and up to 40% in certain B2B industries (Albers and Mantrala, 2008). Each year, U.S. organizations spend more than \$800 billion to manage their sales force, with \$200 billion devoted solely to compensation—an amount on par with the estimated \$208 billion spending on media (\$98 billion) and digital (\$110 billion) advertising (MAGNA, 2018; Zoltners *et al.*, 2013). Such large investments strongly

[1] Representative industries include retailing (8.8 million), service (2 million), and wholesale and manufacturing (1.6 million).

[2] Hereafter, we interchangeably use the terms salesperson and sales agent (or simply agent) to refer to an individual who conducts personal-selling activities that connect an organization's product and/or services to its customers.

encourage organizations to continually improve the effectiveness of their compensation systems. Almost 80% of U.S. firms revise their compensation structure every two years or less, in an attempt to better motivate salespeople and to tailor their behavior to the constantly evolving sales environment (Zoltners *et al.*, 2012).

A successful compensation system effectively motivates the sales force so that an organization can synchronize its salespeople's activity (i.e., sales effort) with its objective(s). The success of the system likely hinges on how appropriately it recognizes and rewards each salesperson's effort. This seemingly easy link between effort and compensation becomes complicated because a salesperson's effort (typically) is unobserved by the firm. Hence, management needs to infer a salesperson's unobserved effort from the observed performance outcome. Compensation systems linked to the individual's performance outcome, such as commissions and quota-bonuses, are attempts to align the salesperson's interests with those of the firm.

The presence of various compensation components naturally leads to a practical question: Which compensation structure constitutes an ideal system? The short answer is that there is no "one-size-fits-all" solution. An ideal plan must take into account specific institutional and environmental contexts. Among other things, the duration and the uncertainty of the firm's selling cycle likely determine the ratio between fixed and variable compensation.[3] Because heterogeneous salespeople respond differently to various compensation components, an organization typically needs to use multiple components. Most importantly, a compensation system should align with the organization's sales strategy.

This monograph takes readers through the evolution of academic research on sales compensation. By examining the relevance of existing research, it provides practical guidance on the design of an effective

[3]Hereafter, we interchangeably use the terms fixed compensation (or fixed pay) and salary to refer to unconditional compensation, irrespective of a salesperson's performance. Similarly, we interchangeably use the terms variable compensation (or variable pay) and incentive compensation (or simply incentives) to refer to conditional compensation, based on a salesperson's performance.

compensation system.[4] Furthermore, the monograph discusses how recent technological advances in artificial intelligence (AI) and machine learning (ML) shape sales strategy transformation and, thus, sales compensation systems of the future.

The remainder of the monograph is organized as follows. Section 2 illustrates a practical outline for designing a sales compensation system and the associated dilemma that organizations often face. Section 3 examines the theoretical foundations of effective sales compensation structures and their validity—in particular, application of the principal-agent theory, which derives optimal compensation systems under the presence of agents' moral hazard. Section 4 addresses recent developments in field research: randomized field experiments jointly conducted by academics and organizations, as well as structural econometric methods using micro-level performance and compensation data. Section 5 illustrates how advances in technology affect organizations' sales strategies and, thus, the challenges and opportunities in utilizing compensation structure to motivate salespeople. Section 6 concludes.

[4] The focus of this monograph is to draw core insights of academic research from a practical standpoint. The studies discussed herein do not represent an exhaustive summary of the literature. For a more comprehensive review, see, e.g., Coughlan and Sen (1989), Albers and Mantrala (2008), Mantrala *et al.* (2010), Mantrala (2014), and Rouziès and Onyemah (2018).

References

Albers, S. and M. K. Mantrala (2008). "Models for sales management decisions". In: *Handbook of Marketing Decision Models*. Boston, MA: Springer. 163–210.

Anderson, E. and R. L. Oliver (1987). "Perspectives on behavior-based versus outcome-based salesforce control systems". *Journal of Marketing*. 51(4): 76–88.

Bajari, P., D. Nekipelov, S. P. Ryan, and M. Yang (2015). "Machine learning methods for demand estimation". *The American Economic Review*. 105(5): 481–485.

Basu, A. K., R. Lal, V. Srinivasan, and R. Staelin (1985). "Salesforce compensation plans: An agency theoretic perspective". *Marketing Science*. 4(4): 267–291.

Chan, T. Y., J. Li, and L. Pierce (2014). "Compensation and peer effects in competing sales teams". *Management Science*. 60(8): 1965–1984.

Chapple, E. and D. Gordon Jr. (1947). "An evaluation of department store salespeople by the interaction chronograph". *Journal of Marketing*: 173–185.

Chung, D. J. (2015). "How to really motivate salespeople". *Harvard Business Review*. 93(4): 54–61.

Chung, D. J., I. Huber, V. Murthy, V. Sunku, and M. Weber (2019). "Setting better sales goals with analytics". *Harvard Business Review* (Website). (July 9). Available at URL: https://hbr.org/2019/07/setting-better-sales-goals-with-analytics.

Chung, D. J., B. Kim, and B. G. Park (2020a). "The comprehensive effects of sales force management: A dynamic structural analysis of selection, compensation, and training". *Management Science*. Forthcoming.

Chung, D. J. and D. Narayandas (2017). "Incentives versus reciprocity: Insights from a field experiment". *Journal of Marketing Research*. 54(4): 511–524.

Chung, D. J., D. Narayandas, and D. Chang (2020b). "The effects of quota frequency: Sales performance and product forms". *Management Science*. Forthcoming.

Chung, D. J., T. Steenburgh, and K. Sudhir (2014). "Do bonuses enhance sales productivity? A dynamic structural analysis of bonus-based compensation plans". *Marketing Science*. 33(2): 165–187.

Churchill Jr., G. A., N. M. Ford, S. W. Hartley, and O. C. Walker Jr. (1985). "The determinants of salesperson performance: A meta-analysis". *Journal of Marketing Research*. 22(2): 103–118.

Coughlan, A. T. and K. Joseph (2012). "Sales force compensation: Research insights and research potential". In: *Handbook on Business to Business Marketing*. Cheltenham, UK: Edward Elgar Publishing, Inc. 473–495.

Coughlan, A. T. and C. Narasimhan (1992). "An empirical analysis of sales-force compensation plans". *Journal of Business*. 65(1): 93–121.

Coughlan, A. T. and S. K. Sen (1989). "Salesforce compensation: Theory and managerial implications". *Marketing Science*. 8(4): 324–342.

Farley, J. U. (1964). "An optimal plan for salesmen's compensation". *Journal of Marketing Research*. 1(2): 39–43.

Grossman, S. J. and O. D. Hart (1983). "An analysis of the principal-agent problem". *Econometrica*. 51(1): 7–46.

Harris, M. and A. Raviv (1979). "Optimal incentive contracts with imperfect information". *Journal of Economic Theory*. 20(2): 231–259.

Holmström, B. (1979). "Moral hazard and observability". *Bell Journal of Economics*. 10(1): 74–91.

Holmström, B. and P. Milgrom (1987). "Aggregation and linearity in the provision of intertemporal incentives". *Econometrica: Journal of the Econometric Society*. 55(2): 303–328.

Huang, S., L. Jin, and Y. Zhang (2017). "Step by step: Sub-goals as a source of motivation". *Organizational Behavior and Human Decision Processes*. 141(2017): 1–15.

Hull, C. L. (1932). "The goal-gradient hypothesis and maze learning". *Psychological Review*. 39(1): 25–43.

Hull, C. L. (1938). "The goal-gradient hypothesis applied to some 'Field-Force' problems in the behavior of young children". *Psychological Review*. 45(4): 271–298.

John, G. and B. Weitz (1989). "Salesforce compensation: An empirical investigation of factors related to use of salary versus incentive compensation". *Journal of Marketing Research*. 26(1): 1–14.

Joseph, K. and M. U. Kalwani (1998). "The role of bonus pay in salesforce compensation plans". *Industrial Marketing Management*. 27(2): 147–159.

Kishore, S., R. S. Rao, O. Narasimhan, and G. John (2013). "Bonuses versus commissions: A field study". *Journal of Marketing Research*. 50(3): 317–333.

Lal, R., D. Outland, and R. Staelin (1994). "Salesforce compensation plans: An individual-level analysis". *Marketing Letters*. 5(2): 117–130.

Lal, R. and V. Srinivasan (1993). "Compensation plans for single- and multi-product salesforces: An application of the Holmstrom-Milgrom model". *Management Science*. 39(7): 777–793.

Lal, R. and R. Staelin (1986). "Salesforce compensation plans in environments with asymmetric information". *Marketing Science*. 5(3): 179–198.

Lepper, M. R., D. Greene, and R. E. Nisbett (1973). "Undermining children's intrinsic interest with extrinsic reward: A test of the 'overjustification hypothesis' ". *Journal of Personality and Social Psychology*. 28(1): 129–137.

Lim, N., M. J. Ahearne, and S. H. Ham (2009). “Designing sales contests: Does the prize structure matter?” *Journal of Marketing Research*. 46(3): 356–371.

MAGNA (2018). “MAGNA Advertising Forecasts”. Available at URL: https://magnaglobal.com/magna-advertising-forecasts-winter-2018-update (2020/1/21).

Mantrala, M. K. (2014). “Sales force productivity models”. In: *The History of Marketing Science*. Ed. by R. S. Winer and S. A. Neslin. New York, NY: World Scientific. 427–462.

Mantrala, M. K., S. Albers, F. Caldieraro, O. Jensen, K. Joseph, M. Krafft, C. Narasimhan, S. Gopalakrishna, A. Zoltners, R. Lal, and L. Lodish (2010). “Sales force modeling: State of the field and research agenda”. *Marketing Letters*. 21(3): 255–272.

Mirrlees, J. (1999). “The theory of moral hazard and unobservable behaviour: Part I”. *Review of Economic Studies*. 66(1): 3–21.

Misra, S., A. T. Coughlan, and C. Narasimhan (2005). “Salesforce compensation: An analytical and empirical examination of the agency theoretic approach”. *Quantitative Marketing and Economics*. 3(1): 5–39.

Misra, S. and H. S. Nair (2011). “A structural model of sales-force compensation dynamics: Estimation and field implementation”. *Quantitative Marketing and Economics*. 9(3): 211–257.

Oyer, P. (2000). “A theory of sales quotas with limited liability and rent sharing”. *Journal of Labor Economics*. 18(3): 405–426.

Powers, T. L., W. S. Martin, H. Rushing, and S. Daniels (1987). “Selling before 1900: A historical perspective”. *Journal of Personal Selling & Sales Management*. 7(3): 1–7.

Raju, J. S. and V. Srinivasan (1996). “Quota-based compensation plans for multiterritory heterogeneous salesforces”. *Management Science*. 42(10): 1454–1462.

Rao, R. C. (1990). “Compensating heterogeneous salesforces: Some explicit solutions”. *Marketing Science*. 9(4): 319–341.

Richardson, R. (1999). “Measuring the impact of turnover on sales”. *The Journal of Personal Selling & Sales Management*. 19(4): 53–66.

Rouziès, D. and V. Onyemah (2018). "Sales force compensation: Trends and research opportunities". *Foundations and Trends in Marketing*. 11(3): 143–214.

Schöttner, A. (2016). "Optimal sales force compensation in dynamic settings: Commissions vs. bonuses". *Management Science*. 63(5): 1529–1544.

Selling Power (2019). "Selling Power 500 Largest Sales Forces". Available at URL: https://www.sellingpower.com/resources/2019/selling-power-500 (2020/1/21).

Steenburgh, T. J. (2008). "Effort or timing: The effect of lump-sum bonuses". *Quantitative Marketing and Economics*. 6(3): 235.

U.S. Department of Labor, Bureau of Labor Statistics (2018). *National Occupational Employment and Wage Estimates*. May.

Viswanathan, M., X. Li, G. John, and O. Narasimhan (2018). "Is cash king for sales compensation plans? Evidence from a large-scale field intervention". *Journal of Marketing Research*. 55(3): 368–381.

Weinberg, C. B. (1975). "An optimal commission plan for salesmen's control over price". *Management Science*. 21(8): 937–943.

Weinberg, C. B. (1978). "Jointly optimal sales commissions for nonincome maximizing sales forces". *Management Science*. 24(12): 1252–1258.

Yan, J., C. Zhang, H. Zha, M. Gong, C. Sun, J. Huang, S. Chu, and X. Yang (2015). "On machine learning towards predictive sales pipeline analytics". In: *Proceedings of the Twenty-Ninth AAAI Conference on Artificial Intelligence,* Association for the Advancement of Artificial Intelligence.

Zoltners, A. A., P. Sinha, and S. E. Lorimer (2012). "Breaking the sales force incentive addiction: A balanced approach to sales force effectiveness". *Journal of Personal Selling & Sales Management*. 32(2): 171–186.

Zoltners, A. A., P. Sinha, and S. E. Lorimer (2013). "Are you paying enough attention to your sales force?" *Harvard Business Review* (Website). (April 12). Available at URL: https://hbr.org/2013/04/are-you-paying-enough-attention-to.