

Introduction and Motivation

A vast literature examines how varied economic environments and firm characteristics promote corporate innovation via improving innovative skills, facilitating financing, reducing innovation risks, and enhancing monitoring on research and development (R&D) processes.

The commercialization of innovative products and services is vital to the realization of their economic value and thus to success in innovation for a firm, yet little research attention has been paid to the factors that determine innovation via influencing the commercial potential of innovative products and services.

Main Hypotheses

Development of the hypothesis H1

With marketing experience, executives could learn the changing market demand more proactively from the firm's potential and/or existing customers and competitors, and manage innovation better from the product-market and customer perspectives.

Marketing-experienced executives may steer corporate innovation towards meeting the changing needs, preferences, and tastes of customers winning new customers, increasing sales, enhancing customer loyalty, and inducing existing customers to pay higher prices

making the innovation generate higher economic value for a firm more internal cash flows attributed to the increased sales would, in turn, satisfy firms' financing needs better for the ongoing or new innovative research and help it to progress more efficiently, such that even more new innovative products or services will be brought to the market earlier to earn even higher payoffs

The above expected outcomes resulting from the marketing experience of executives motivate and foster corporate innovation.

Development of the hypothesis H2

To the extent that executive marketing experience helps commercialize innovation in a way that realizes higher economic value for a firm's products or services, the firm's performance should be improved as a result of the innovation.

The market-oriented innovation steered by executives that have stronger marketing experience could generate more sales revenue for a firm, and thereby relieve potential financial constraints that hinder the firm from investing in more related innovation projects or progressing ongoing R&D well for more profitable and more value-enhancing innovation outputs.

Prediction: The positive association between corporate innovation and firm performance is more pronounced for firms with executives that are more marketing-experienced.

Data and Variable Measurements

- Sample: All firms listed in mainland China for the period 2009-2019
- Data on executive marketing-experience
 - As with Whittler, Krause, and Lehmann (2018), an executive is defined as experienced in marketing if s/he had held an executive-level marketing position prior to the year of interest in our panel data analysis.
 - We collect and content-analyze executive biographies from the Chinese listed companies, and identify executives that have the marketing experience.
 - Previous job titles, which are indicative of their executive-level marketing experience, include chief marketing/sales/merchandising officer, vice president of marketing/ sales, and executive/senior vice president of sales/marketing.
- Variables for executive marketing experience
 - *years_market_exper*: the natural logarithm of the average of the years for which the firm's executives hold the foregoing marketing/sales titles.
 - *portion_market_exper*: the number of firm executives holding any one of these titles at any point in their prior career, scaled by the total number of executives.
 - *dum_market_exper*: 1 for firms that have a marketing-experienced executive and 0 for those that do not have such an executive.
 - *dum_ceo_market_exper*: 1 for firms that have a marketing-experienced CEO and 0 for those that do not have such an executive.
- Data on corporate innovation --- collected from the website of the Chinese State Intellectual Property Office (CSIPA)
 - invention patents --- granted for an invention of a new product, a new process, or an improvement, which have unique functions or utilities for customers
 - product-modeling patents --- granted for a new solution relating to the shape and/or structure of a product
 - product-design patents --- granted for new product design in terms of the shape, color, and/or pattern of a product, which are aesthetically attractive to customers
- Main measures of corporate innovation
 - The natural logarithm of one plus the number of granted invention patents (*invention*), of granted product-modeling patents (*modeling*), and of granted product-design patents (*design*), respectively.
 - These granted patents pertain to the patent applications filed by a firm in a year and subsequently granted by the CSIPA.
- Financial, governance, and stock return data --- obtained from the China Stock Market and Accounting Research (CSMAR) database and the Wind database

Test of the hypothesis H1

- Initial sample after merging patent data and marketing experience data with the financial, governance, and stock return data: 42,765 firm-year observations for 2,893 unique firms.
- remove financial firms and real estate companies
- eliminate firms identified by the China Securities Regulatory Commission (CSRC) as suffering financial distress and pending delisting
- get rid of the mainland Chinese listed companies that have issued H shares (i.e., shares traded on the Hong Kong Stock Exchange) or B shares (i.e., shares available only for foreign investors to trade), and of those that are cross-listed on the New York Stock Exchange.
- exclude firm-year observations that have negative book value of equity
- delete observations that have missing value in any one of regressors used for our multivariate tests
- Final sample: 35,575 firm-year observations for 2,579 unique firms.
- winsorize all the continuous variables at the 1% and 99%, respectively

Test of the hypothesis H1

To test whether firms with a stronger team of marketing-experienced executives are more innovative, we start by running the following pooled ordinary least squares (OLS) regression model:

$$invention(modeling, design)_{i,t+1} = \alpha_0 + \alpha_1 years_market_exper_{i,t} + \sum_k \alpha_{i,t,k} controls_{i,t}^k + YearDummies + IndustryDummies + \varepsilon_{i,t}$$

We conduct a host of tests to check the robustness of our baseline regression results. For brevity, we present our analyses and results in Sections A and B of the web appendix. In sum, our baseline results are robust to using propensity-score matching, coarsened-exact matching, firm-fixed-effects regression, two-stage least squares regression, the impact threshold for a confounding variable test, difference-in-differences regression analysis, a dynamic panel generalized method of moments estimator, and a placebo test to control for potential endogeneity. Our baseline regression results are also amenable to using various alternative measures of executive marketing experience and of corporate innovation.

Test of the hypothesis H2

To test whether the marketing experience of firm executives enhances the innovation-performance relationship, we employ six measures of firm performance: (i) sales revenue (*sales*), (ii) return on equity (*roe*), (iii) gross profit margin (*profit_margin*), (iv) dividend-adjusted stock returns (*return*), (v) Tobin's Q (*tobin_q*), and (vi) productivity (*tfp*). All these measures are defined in the appendix. We run a regression of each performance measure on firm innovation, its interaction with executive marketing experience, and a battery of control variables per related literature (e.g., Francis, Hasan, Mani, and Ye, 2016; Bennett, Bettis, Gopalan, and Milbourn, 2017).

Further analysis

We carry out further analysis of how the marketing experience of executives influences corporate innovation under various circumstances. Specifically, we investigate whether the positive effect of executive marketing experience on corporate innovation differs across different types of patent-protected innovation, and for firms with R&D-experienced executives, firms with high growth, firms faced with fierce industrial product market competition, and non-state-owned firms.

Summary of main findings and implications

An executive with marketing experience could contribute to increasing the profit potential of innovative products and services, thus giving her/his firm an incentive to innovate.

Firms employing executives more experienced in marketing are more innovative, and that innovation produces stronger corporate performance for these firms.

The positive influence of executive marketing experience on innovation is manifested most (second most) significantly in increased invention patents (increased product-design patents), and is stronger for firms with executives experienced in R&D, firms with high growth, firms confronted with intense product market competition, and non-state-owned firms.

Our results imply the importance of including marketing-experienced executives in the top management team of firms that are pursuing or planning on innovation to increase corporate competitiveness.

Contribution of the study

1. Very limited is the research on how to stimulate innovation through promoting its commercialization to generate higher economic value. We fill this void in the literature, and show that the marketing experience of executives spurs corporate innovation by facilitating the marketing and value-adding of innovation outputs.
2. Our study adds to the sparse extant research on the drivers of corporate innovation in China.
3. Little is known about the main determinants of the economic benefits that would be generated from innovation. Our research contributes to this literature by showing that executive marketing experience, which helps make innovation more market-oriented, is one such important determinant of innovation performance. Specifically, we find that the marketing experience of executives intensify the positive association between corporate innovation and performance.
4. There is little research on how the professional background of managers impacts corporate innovation. We contribute to this scant research by providing evidence that the marketing experience of executives strengthens firm innovation as well as its contribution to improving corporate performance and productivity. Our findings thereby highlight the benefits and importance of having experienced marketers in a firm's top management team.

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