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| RESEARCH ARTICLE

Exploring the Interaction of Incentives and Benefits on New Product Performance

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| ABSTRACT

This study investigates how to optimize compensation strategies by balancing incentives and benefits to achieve superior new product performance. Grounded in resource orchestration theory, this research proposes that firms should properly configure incentives and benefits for successful new product development. Survey data were collected from China to test the theoretical model. The results reveal that while incentives positively correlate with subjective new product performance, they are negatively associated with objective new product performance, despite a positive relationship between subjective and objective new product outcomes. Moreover, we uncover a significant negative interaction between incentives and benefits on objective new product performance. This result indicates that firms can maximize the sales contribution of new product programs by designing compensation strategies with low incentives paired with high benefits.

| KEYWORDS

Compensation Strategy, Benefits, Incentives, New Product Performance

| ARTICLE INFORMATION

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1. Introduction

Successful new product innovation is valuable for firms seeking a competitive advantage in dynamic markets (Song et al., 2015; Wei, 2024). In designing compensation structures, benefits and incentives are crucial in aligning employee behavior with organizational goals to achieve this competitive advantage (Kalyanamitra et al., 2020). While the literature has documented a crowding-out effect in which extrinsic incentives undermine the positive impact of intrinsic motivation on individual creativity (see meta-analysis by Cerasoli et al., 2014), Curran & Walsworth (2014) argue that the firms can effectively incentivize innovation with the suitable compensation structures.

For example, incentives—rewards beyond regular wages and salaries—are designed to motivate employees to achieve specific organizational goals such as increasing profits, lowering costs, improving the quality of work, and enhancing productivity (Balkin & Gomez-Mejia, 1990; Milkovich et al., 2016). However, benefits are typically non-wage compensations provided to employees, such as health insurance, retirement plans, and paid time off, which are designed to enhance employee well-being and job satisfaction (Balkin & Gomez-Mejia, 1990; Boudreaux, 2021; Milkovich et al., 2016). Curran and Walsworth (2014) found that while salary and individual incentives do not significantly impact employee innovation, group incentives and benefits positively influence individual innovation.

Despite some research at the individual level, there need to be more firm-level studies on this topic. Only when a firm's policies for incentives and benefits are strategically designed to align employee efforts with company objectives, compensation strategies can enhance the firm productivity and new product innovation performance. This research addresses this gap by examining how compensation strategies, such as incentives and benefits, individually and jointly impact both subjective and objective new product performance at the firm level.

2. Literature Review

Various compensation strategies, such as incentives and benefits, can direct employees toward achieving an organization's strategic objectives and building competitive advantages (Balkin & Gomez-Mejia,1990; Diaz & Gomez-Mejia, 1997; Milkovich et al., 2016). *Incentives* typically refer to short-term rewards, including bonuses, stock options, and other financial rewards contingent on meeting or exceeding specific objectives. These rewards are designed to motivate employees to achieve particular performance targets, aligning their actions with the organization's strategic goals. As such, incentives often influence employee behavior, encouraging practices that benefit the organization, such as increased productivity or innovation (Kalyanamitra et al., 2020).

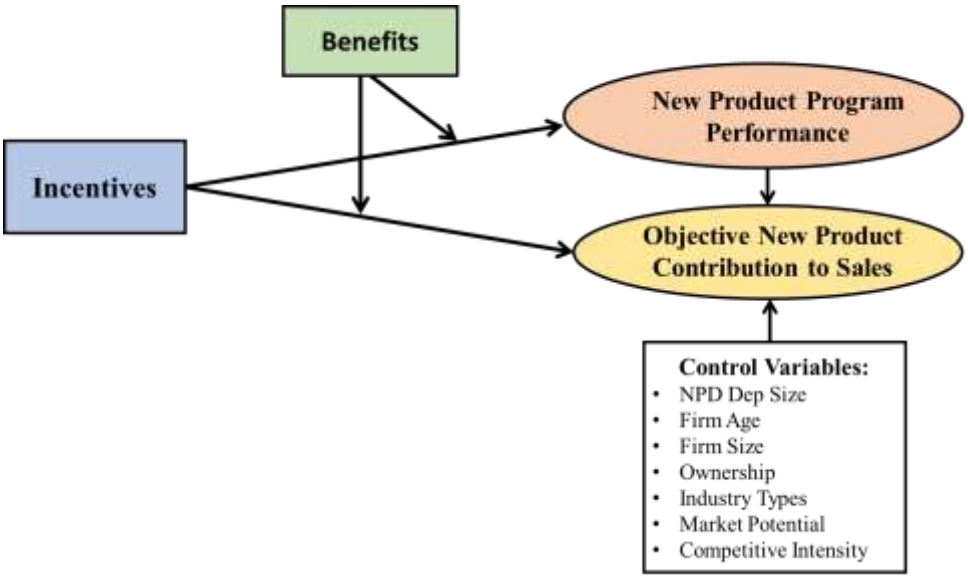
In contrast, *benefits* are non-monetary and include health insurance, retirement savings plans, and other perks that contribute to an employee's overall compensation package by addressing their personal and family needs (Balkin & Gomez-Mejia,1990; Diaz & Gomez-Mejia, 1997; Milkovich et al., 2016; Curran & Walsworth, 2014). These benefits are typically structured to provide long-term security and satisfaction, fostering employee loyalty and encouraging them to remain with the company over time (Currean & Walsworth, 2014).

While incentives and benefits are integral to compensation design, literature offers little insight into their joint effects. Exploring their interaction effect may provide valuable new insights for firms looking to enhance the effectiveness of their compensation structures in the new product development process.

Resource orchestration theory posits that strategic alignment and resource orchestration are essential for maximizing value-creation efforts (e.g., Helfat et al., 2009; Sirmon et al., 2011). This theory outlines comprehensive processes of resource management (*structuring, bundling, and leveraging)* and asset orchestration (*selecting and configuring*) for value creation (Wei, 2024). This theory argues that merely possessing resources is insufficient to develop competitive advantages; superior performance can only be realized when these resources are effectively structured, bundled, leveraged, selected, and configured. Resource orchestration theory offers significant new opportunities for future research to explore how to synchronize its subprocesses and processes to earn positive returns (e.g., Sirmon et al., 2011).

Configuring involves coordinating co-specialized assets, articulating a vision for those assets, and nurturing innovation (Helfat et al., 2009). Given the early stage of scholarly work based on resource orchestration theory, the literature must understand how to orchestrate resources and build dynamic capabilities for value creation effectively (Wei, 2024). Drawing on resource orchestration theory, we propose that firms should coordinate their two distinct compensation strategies—incentives and benefits—to maximize new product innovation performance (see Figure 1). While previous literature emphasizes that incentives and benefits are vital for boosting employees' short-term motivation and long-term satisfaction, spending on these two strategies also represents operating costs that impact firm profitability and performance. This research primarily focuses on how to orchestrate these two strategies effectively. Do firms need to invest in both strategies substantially to optimize their new product performance? How should firms configure incentives and benefits to achieve superior new product outcomes if not? Therefore, the interaction effect between incentives and benefits is the central focus of this study.

Figure 1. Theoretical Framework



3. Methodology

Survey data were collected from three different cities in China. Government sources and commercial directories were employed to construct a sample of 290 firms actively engaged in new product development and sales. We employed an "administered on-site" method to address the low response rate and high costs associated with survey research (Wei & Atuahene-Gima, 2009). We initially contacted each firm's senior-level manager by telephone to invite their participation in the study and identify the most knowledgeable informant for our survey. A total of 127 firms participated in the survey.

3.1 Measurement

Objective new product performance was measured by the percentage of sales from new products introduced in the last three years. All other measures were subjective and assessed using a 5-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree") (see Table 2). The subjective new product program performance scale was modified from Griffin and Page (1993). We made new scales for both incentives and benefits based on Balkin & Gomez-Mejia (1990) and Diaz & Gomez-Mejia (1997). Competitive intensity was measured by a single item from (Jaworski and Kohli (1993). Firm age was determined by the years the firm has been in operation and the number of employees assessed firm size. We transformed the firm age and size by taking its logarithm to ensure a normal distribution. Ownership type was coded as state-owned versus non-state-owned, and industry type was categorized as high- or low-technology.

Table 1

Descriptive statistics and correlations of the study constructs

Construct	*Mean*	*STD*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*
1. Objective NP Performance	43.1	26.82	--	-	-	-	-	-	-	-	-	-	-
2. Subjective NP Performance	3.60	0.86	**0.43** [a]	***0.68***	0.13	0.02	0.01	-	-	-	-	-	-
3. Incentives	3.12	1.14	0.09	**0.31** [a]	***0.67***	0.08	0.08	-	-	-	-	-	-
4. Benefits	2.67	1.03	0.02	0.15	**0.29** [a]	***0.65***	0.04	-	-	-	-	-	-
5. Market Potential	3.61	0.83	0.10	0.07	**0.21** [b]	0.14	***0.47***	-	-	-	-	-	-
6. Competition Intensity	4.71	0.56	0.03	-0.08	-0.07	0.03	0.07	--	-	-	-	-	-
7. Industry Type	0.38	0.49	0.04	0.08	0.13	0.10	**0.37** [a]	0.10	--	-	-	-	-
8. Ownership	0.83	0.38	0.18	**0.22** [b]	0.14	0.03	**0.19** [b]	-0.05	0.09	--	-	-	-
9. Firm Size (Log)	0.71	0.15	0.06	0.01	-0.04	0.00	0.07	0.16	0.15	-0.15	--	-	-
10. Firm Age (Log)	1.94	0.07	0.19	0.14	0.15	0.09	**0.33** [a]	-0.13	0.10	**0.53** [a]	**-0.40** [a]	--	-
11. NPD Department Size	0.41	0.21	0.09	0.01	0.08	-0.01	0.12	0.05	0.23	-0.09	**0.78** [a]	**-0.31** [a]	--
Composite Reliability	-	-	-	0.91	0.80	0.85	0.72	-	-	-	-	-	-

[a]: Correlation is significant at the 0.01 level (2 tailed); [b]: Correlation is significant at the 0.05 level (2 tailed).

Table 2

Measurement, reliability and confirmatory factor analysis

Chi-square(df)=127.23(59); IFI=0.91; CFI=0.91; RMSEA=0.099	
Constructs	*Factor Loadings**
New Product Program Performance (Cronbach's alpha = .91)	
Please compare to your major competitors, please indicate how your company successfully have achieved the following goals ("1" represents "Extremely unsuccessful", "5" represents "extremely successful"):	
Achievement of 3-year new product program objectives	0.73
Impact of the new product program on corporate performance	0.85
Return on investment from the new the new product development program	0.90
New product program profitability	0.81
New product program sales volume	0.81
Compensation Strategy Design	
Please indicate your extent of agreement about how well the statement describe the actual compensation strategy in your company ("1" represents "strongly disagree", "5" represents "strongly agree"):	
Benefits (Cronbach's alpha = .84)	
The benefits are an important part of the total pay package	0.81
The employee benefits package is very generous compared to what it could be	0.87
Welfare benefits are considered as an important part of the compensation strategy in this organization	0.73
Incentives (Cronbach's alpha = .75)	
Pay incentives such as a bonus or profit sharing are an important part of the compensation strategy in this organization	0.98
Pay incentives are designed to provide a signficant amount of an employee's total earnings in this organization	0.62
Market Potential (Cronbach's alpha = .75)	
There is high growth in demand in this industry.	0.57
This industry offers many attractive opportunities for future growth.	0.53
Potential customers have a great need in this industry.	0.90

*: All factor loadings are significant at 0.001 level

3.2 Measurement Quality

Basic statistics are displayed in Table 1. Confirmatory factor analysis (CFA) was performed to check construct validity, and all fit indices indicate a good model fit (see Table 2). The constructs demonstrate good reliability through the composite reliabilities in Table 1 and the alpha coefficients in Table 2, revealing adequate convergence or internal consistency (Churchill, 1979; Fornell & Larcker, 1981 ; Hair, Harrison, & Risher, 2018). The average variance extracted (AVE) for each construct is also presented in Table 1. All AVEs exceed the shared variance between the two constructs, supporting discriminant validity (Fornell & Larcker, 1981; Hair, Harrison, & Risher, 2018). The primary objective of this study is to examine the interaction effect of incentives and benefits on new product performance. It is difficult for respondents to discern or guess the exact nature of complex relationships in the interaction effect (e.g., Aiken & West, 1991; Brockner et al., 1997). Hence, common-method bias is less likely to distort significant interaction effects in this study.

4. Results and Discussion

Structural equation modeling was used to test the theoretical model. For the interaction effect, both incentives and benefits were mean-centered to create interaction terms, following Ping's (1995) procedure. Table 3 illustrates all the testing results. Model 1 includes only control variables and independent variables; model 2 incorporates the interaction effect, explaining an additional 2% of the variance in subjective new product program performance and 6% in objective new product performance. The findings reveal that, although managers believe that incentives positively and directly enhance subjective new product program performance, incentives negatively impact objective new product performance, which is different from Davila's positive direct effect. However, Davil (2003) uses only subjective measures for project performance. Despite the significant positive relationship between subjective and objective new product performance, a significant negative interaction effect was observed in objective new product performance. While Curran and Walsworth (2014) examine the direct impact of incentives and benefits on individual innovation, limited evidence is available at the firm level for the direct effect of incentives and benefits on new product performance. This study is among the first to investigate and find a negative interaction effect between incentives and benefits on new product performance at the firm level.

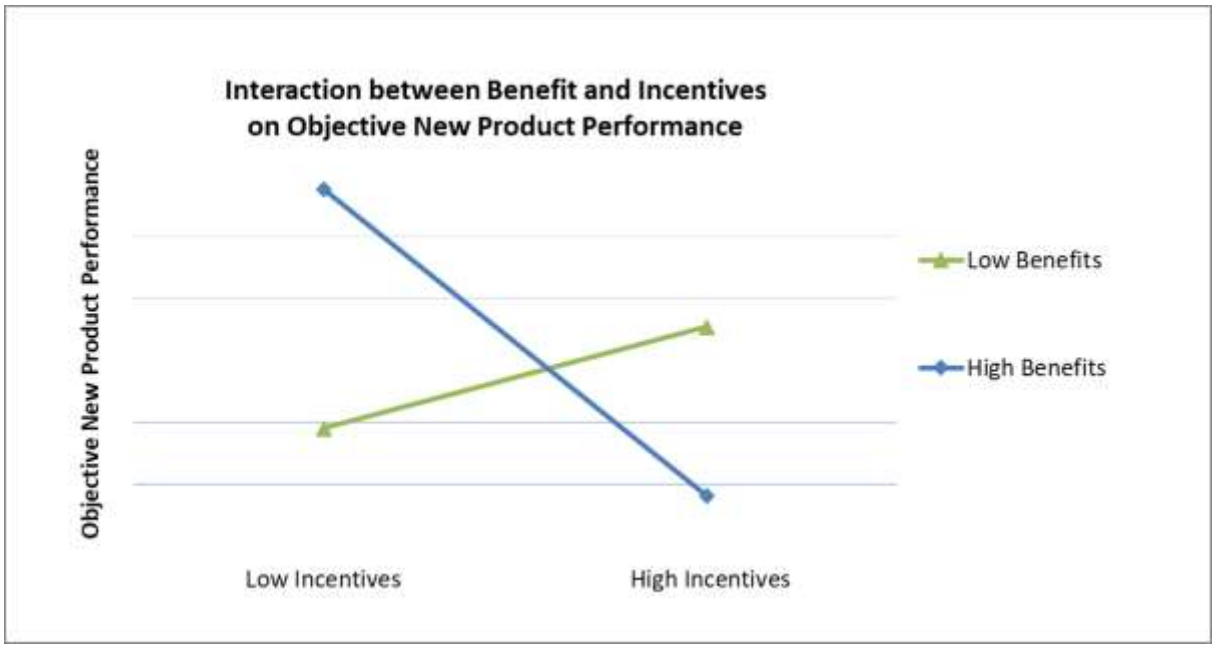
Table 3: Structural Equetion Modeling Results

Hypotheses	Model 1 Standard Coeffient	Model 1 Standard Error	Model 1 T-value	Model 1 *p*	Model 2 Standand Coeffient	Model 2 Standand Error	Model 2 T-value	Model 2 *p*
Control Variables								
NP Dep Size (Log) → NPD Program	-0.01	0.50	-0.09		-0.04	0.51	-0.22	
Firm age (Log) → NPD Program	-0.01	1.31	-0.09		-0.03	1.33	-0.23	
Firm size (Log) → NPD Program	0.05	0.73	0.32		0.05	0.73	0.33	
Ownership → NPD Program	**0.18**	**0.19**	**1.63**	#	0.17	0.20	1.55	
Industry Type → NPD Program	0.04	0.15	0.36		0.03	0.15	0.26	
Market Potential → NPD Program	-0.06	0.13	-0.41		-0.07	0.13	-0.47	
Competitive Intensity → NPD Program	-0.07	0.12	-0.70		-0.05	0.12	-0.50	
NP Dep Size (Log) → Objective NP Contribution to Sales	0.19	26.79	-0.16		0.11	18.14	0.73	
Firm age (Log) → Objective NP Contribution to Sales	**0.20**	**48.62**	**1.60**	#	0.16	47.86	1.28	
Firm size (Log) → Objective NP Contribution to Sales	-0.02	18.38	1.28		-0.01	26.06	-0.09	
Ownership → Objective NP Contribution to Sales	-0.01	7.31	-0.06		-0.05	7.08	-0.51	
Industry Type → Objective NP Contribution to Sales	-0.08	5.62	-0.74		-0.13	5.48	-1.31	
Market Potential → Objective NP Contribution to Sales	0.03	4.80	0.21		0.02	4.67	0.13	
Competitive Intensity → Objective NP Contribution to Sales	0.10	4.33	1.05		**0.14**	**4.25**	**1.62**	#
Simple Effects:								
Incentives → Subjective NPD Program	**0.32**	**0.11**	**3.00**	b	**0.32**	**0.11**	**2.89**	b
Benefits → Subjective NPD Program	0.06	0.08	0.56		0.08	0.08	0.70	
Incentives → Objective NP Contribution to Sales	-0.12	3.70	-1.29		**-0.16**	**3.77**	**-1.57**	#
Benefits → Objective NP Contribution to Sales	-0.03	2.73	-0.34		0.05	2.84	0.48	
Subective NPD Program → Objective NP Contribution to Sales	**0.46**	**4.12**	**4.32**	c	**0.46**	**4.06**	**4.38**	c
Moderating Effect								
Incentives X Benefits → Subjective NPD Program	--	--	--		-0.09	0.05	-0.87	
Incentives X Benefits → Objective NP Contribution to Sales	--	--	--		**-0.28**	**1.89**	**-2.84**	b
Explained Variance and Model Fits	R^2(Subj)=16%, R^2(Obj)=25%, Chi-square(df)=196.33(122); IFI=0.93; CFI=0.92; RMSEA=0.072				R^2(Subj)=18%, R^2(Obj)=31%, Chi-square(df)=207.91(131); IFI=0.93; CFI=0.92; RMSEA=0.070			

Notes: #p < .05; ap < .05; bp < 0.01; cp < .001.

The interaction effect is plotted in Figure 2. The graph shows that the relationship between incentives and objective new product innovation performance is negative in firms with high benefits. In contrast, it becomes positive in firms with low benefits, reflecting a negative interaction effect between incentives and benefits. This negative relationship implies a trade-off effect: simultaneously investing in incentives and benefits does not lead to optimal objective new product performance. As shown in Figure 2, firms are more likely to maximize objective new product performance by implementing a compensation strategy that combines high benefits with low incentives. This new insight represents the key discovery introduced by this study. The combination of low incentives and high benefits may echo the negative interaction between intrinsic and extrinsic reward strategies on new product innovation performance, as found in Wei (2024). High incentives may represent a type of extrinsic reward that triggers pressure and discourages employees from risk-taking in the new product development process. Jenkins et al. (1998) also found that short-term economic incentives may positively affect quantity but not quality of performance. Therefore, low incentives and high benefits are more likely to induce intrinsic motivation, which can enhance the sales contribution of new products.

Figure 2.



5. Conclusion

5.1 Theoretical contributions and managerial implications

This study explores how firms can effectively configure the components of incentives and benefits in their compensation strategy to achieve superior new product performance. The findings make significant contributions to the innovation management literature. While incentives may substantially and directly boost the manager's belief in subjective new product program performance, they may also reduce objective new product performance. To maximize the new product program's contribution to sales, the firms should combine high benefits with low incentives. The unique insights provided to managers are that concurrent investment in incentives and benefits may reduce the sales contribution of the new product program. Although benefits do not directly impact new product performance, using benefits with low incentives may significantly improve objective new product performance. These results also offer valuable new empirical support for resource orchestration theory.

5.2 Limitations and directions for future research

The limitations of this study prsent opportunities for future research. First, the small sample size from China may limit the generalizability of the findings. Future research should replicate this research with larger sample sizes from other countries. Second, while the impact of incentives appears to be short term and benefits more long-term effect, this research utilized a cross-sectional design. A longitudinal approach would better capture the dynamic nature of incentives and benefits and test causaility. Third, this study focused solely on objective new product performance. Future research should explore the interaction of incentives and benefits on other depenent variables, such as cost- and risk-related firm performance, growth, and profitability, which Katsikeas et al. (2016) identified as signficant areas for further investigation.

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