

Balancing Extrinsic and Intrinsic Rewards for Employee Performance in China's EV Industry

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Abstract: Employee performance is widely regarded as a cornerstone of organizational success, and in fast-changing industries it becomes even more critical. China's electric vehicle (EV) sector exemplifies this challenge, where rapid innovation and intense competition require companies to motivate employees for both immediate efficiency and long-term commitment. This study explores how extrinsic rewards include bonuses, gifts, promotions, benefits, and intrinsic rewards, including recognition, career development, learning opportunities, and responsibility, influence task and contextual performance. A quantitative design was employed, using survey data and statistical analyses to test the proposed framework. The findings show that both extrinsic and intrinsic rewards significantly enhance performance but operate differently. Extrinsic rewards are more closely linked to short-term improvements, while intrinsic rewards foster deeper engagement and sustained contributions. By combining Herzberg's Two-Factor Theory and Self-Determination Theory, the study demonstrates that effective reward systems must balance financial incentives with psychological motivators. The results provide theoretical contributions and practical guidance for managers seeking to strengthen motivation, build resilience, and promote sustainable performance.

Keywords: extrinsic rewards; intrinsic rewards; employee performance; task

performance; EV industry

1. Introduction

Employee performance is widely recognized as a central driver of organizational success, and in industries shaped by rapid technological change it becomes even more critical^[23]. As global markets move toward sustainability and digital transformation, firms must not only innovate in products and processes but also cultivate a workforce capable of sustaining competitiveness^[19]. China's electric vehicle (EV) industry illustrates this challenge clearly. The sector is marked by short innovation cycles, rising consumer expectations, and intense competition. While firms continue to invest in advanced technologies, their long-term growth often depends on how effectively they manage and motivate human capital^{[8][11]}.

Traditional models of performance management and reward systems, developed in stable manufacturing or knowledge-based settings, provide limited guidance for hybrid industries such as EV manufacturing^{[1][18]}. Employees in this field face dual pressure: they must deliver immediate efficiency while continuously adapting to technological change. Prior research has examined extrinsic incentives such as financial compensation and intrinsic motivators such as recognition and job satisfaction, yet relatively few studies have investigated how these mechanisms interact to enhance both task and contextual performance in dynamic contexts^{[7][13]}.

This study seeks to address this gap by analyzing the influence of extrinsic and intrinsic rewards on employee performance in Kunming X Center, a leading enterprise in China's EV sector. Drawing on Herzberg's Two-Factor Theory and Self-Determination Theory, it develops an integrated framework that captures the balance between immediate incentives and long-term motivators. The study contributes to performance management scholarships by extending motivation theory to a rapidly evolving industry and provides practical guidance for managers seeking to design reward systems that strengthen both productivity and sustainable engagement.

1.1. Research Questions

1. How do extrinsic rewards affect employee performance (task and contextual) in China's EV industry?
2. How do intrinsic rewards affect employee performance (task and contextual) in China's EV industry?

1.2. Research Objectives

1. To analyze the effects of extrinsic rewards on employee performance (task and contextual), thereby assessing their role in short-term performance

enhancement within China's EV sector.

2. To investigate the influence of intrinsic rewards on employee performance (task and contextual), with a focus on their contribution to sustainable employee motivation and long-term organizational competitiveness in China's EV industry.

2. Literature Review

2.1. Employee Performance: Concept and Dimensions

Employee performance has long been a central theme in organizational behavior and human resource management research, as it reflects both the efficiency of individuals in completing tasks and their overall contribution to organizational success. Pulakos (2009) emphasized that performance management should not be limited to evaluating output but should also capture behaviors that support long-term organizational goals. Similarly, Richard (2003) argued that assessing employee performance requires considering both the immediate results of task completion and the broader value employees create for their organizations.

Campbell (1990) developed a performance model that highlighted the role of knowledge, skills, and motivation in shaping employee outcomes. Building on this foundation, Borman and Motowidlo (1997) introduced a widely accepted distinction between task performance and contextual performance. This framework has since become essential in understanding the multidimensional nature of performance, and more recent studies continue to validate its relevance in dynamic business environments^[16].

Task performance refers to behaviors directly related to an employee's formal role and responsibilities, including the quantity, quality, and efficiency of completed work. In the electric vehicle (EV) industry, this is often reflected in an employee's ability to assemble components efficiently on the production line, which directly influences productivity and delivery schedules^[2]. Contextual performance, in contrast, includes discretionary behaviors that go beyond formal job duties and contribute to the social and psychological environment of the organization. Such behaviors include cooperation, organizational citizenship, adherence to norms, and proactive problem-solving^[5]. Within the EV sector, contextual performance may be observed in employees' willingness to share knowledge, support team learning, and adapt to rapid technological changes, all of which are critical for sustaining innovation and competitiveness^[29].

Taken together, tasks and contextual performance provide a comprehensive understanding of employee contributions. Task performance ensures that short-term operational and financial targets are achieved, whereas contextual performance reinforces organizational learning, adaptability, and strategic growth^[20]. Consequently, this study incorporates both dimensions to assess the holistic impact of extrinsic and intrinsic rewards on employee performance in

China's evolving EV industry.

2.2. Extrinsic and Intrinsic Rewards and Employee Performance

Employee performance is strongly shaped by the reward systems organizations adopt, and scholars commonly distinguish between extrinsic and intrinsic rewards. Extrinsic rewards typically include financial compensation, bonuses, promotions, and benefits, whereas intrinsic rewards emphasize recognition, career development opportunities, learning, and responsibility^[10]. Understanding how these two forms of rewards influence task and contextual performance is essential for organizations operating in fast-changing industries such as electric vehicles (EVs).

Extrinsic rewards are widely recognized for their effectiveness in driving short-term productivity. In manufacturing contexts, tangible incentives are often directly linked to employee efficiency and output quality. Alonso and García (2024) found that financial and promotional incentives significantly improved operational performance in high-tech industries, while Wah and Nathaniel (2025) reported that extrinsic rewards had a strong positive effect on task performance in Malaysian organizations. Beyond task outcomes, extrinsic rewards may also foster contextual performance indirectly. Malak et al. (2025) demonstrated that when employees perceive fairness and consistency in extrinsic rewards, their organizational commitment rises, which subsequently promotes discretionary behaviors such as cooperation and compliance. In the EV sector, where cross-functional collaboration is critical, extrinsic incentives may therefore contribute to both immediate task efficiency and broader organizational cohesion.

Intrinsic rewards, by contrast, are closely tied to sustained engagement, adaptability, and innovation. Research shows that recognition, career development, and learning opportunities often motivate employees to go beyond formal job requirements. Hoxha et al. (2024) highlighted that intrinsic motivation significantly enhances contextual performance by promoting employee engagement and proactive problem-solving. Similarly, Figueiredo et al. (2025) emphasized that in knowledge-intensive and innovation-driven industries, intrinsic rewards such as opportunities for growth and responsibility predict long-term creativity, knowledge sharing, and resilience. Within the EV industry, where rapid technological cycles demand continuous learning, intrinsic rewards are particularly relevant for building employee adaptability and innovation capacity.

Taken together, the evidence suggests that extrinsic and intrinsic rewards influence employee performance in complementary ways. Extrinsic rewards are most effective in enhancing task performance and achieving short-term operational targets, while intrinsic rewards play a stronger role in fostering contextual performance and ensuring long-term commitment. This study therefore integrates both Herzberg's Two-Factor Theory and Self-Determination Theory to examine how balanced reward systems contribute to task and

contextual performance in China's EV industry.

In the EV industry, these dynamics take on particular significance. The sector is characterized by rapid technological iteration, long R&D cycles, and extensive cross-functional collaboration. Under such conditions, extrinsic rewards such as bonuses and promotions are crucial for attracting and retaining skilled employees in the short term, while intrinsic rewards such as recognition, career development, and responsibility are essential for maintaining long-term motivation. For example, in multi-year innovation projects, intrinsic rewards can compensate for the limitations of extrinsic incentives that are often tied to immediate outcomes, thereby sustaining employee engagement and performance over time.

2.3. Theoretical Foundations

The relationship between reward systems and employee performance can be systematically explained through motivational theories. For the purposes of this study, Herzberg's Two-Factor Theory and Self-Determination Theory (SDT) are adopted as the primary theoretical lenses. Together, these frameworks illuminate how extrinsic and intrinsic rewards influence both task and contextual performance.

Herzberg's Two-Factor Theory posits that job satisfaction and dissatisfaction arise from two distinct sets of factors: hygiene factors and motivators. Hygiene factors, such as salary, benefits, and working conditions, are necessary to prevent dissatisfaction but are insufficient to generate enduring motivation or higher levels of performance. Motivators, including recognition, responsibility, and opportunities for career growth, are more closely linked to satisfaction and long-term engagement^[15]. In the context of the EV industry, this theory suggests that extrinsic rewards may ensure baseline compliance and productivity, particularly in task-oriented domains, while intrinsic rewards play a more decisive role in stimulating contextual performance and sustaining commitment in a highly innovative environment.

Self-Determination Theory (SDT) complements this framework by providing a psychological explanation of how rewards affect motivation. Deci and Ryan (2000) emphasize that motivation quality depends on the fulfillment of three basic psychological needs: autonomy, competence, and relatedness. When extrinsic rewards are perceived as supportive rather than controlling, they can enhance rather than undermine intrinsic motivation. Contemporary studies affirm the relevance of SDT in dynamic industries. For example, Hoxha et al. (2024) demonstrated that intrinsic motivators such as responsibility and learning opportunities significantly increase contextual performance through employee engagement, while Figueiredo et al. (2025) highlighted that in innovation-driven sectors, intrinsic rewards are critical for fostering knowledge sharing and resilience.

By integrating Herzberg's distinction between hygiene and motivating factors with SDT's focus on psychological needs, this study establishes a comprehensive theoretical basis for analyzing reward-performance linkages. Specifically, extrinsic rewards are expected to exert a stronger influence on task performance, while intrinsic rewards are expected to play a greater role in contextual performance. This dual theoretical foundation supports the study's hypotheses and guides the empirical investigation within China's EV industry.

Beyond their independent effects, extrinsic and intrinsic rewards may also interact in shaping employee performance. Self-Determination Theory (Deci & Ryan, 2000) suggests that extrinsic incentives perceived as autonomy-supportive can complement rather than undermine intrinsic motivation. Empirical studies support this complementarity: Cerasoli, Nicklin, and Ford (2014) found that intrinsic motivation and extrinsic rewards jointly predict performance outcomes, while Fulmer and Li (2022) highlighted that reward systems integrating both financial and non-financial incentives yield stronger and more sustainable results. This perspective reinforces the central argument of the present study that extrinsic and intrinsic rewards should not be regarded as isolated mechanisms but as interdependent drivers of task and contextual performance, particularly within the EV industry context.

2.4. Related Studies: Rewards and Employee Performance

The relationship between reward systems and employee performance has been the subject of extensive empirical investigation. Scholars generally agree that extrinsic and intrinsic rewards affect performance outcomes in distinct but complementary ways.

Extrinsic rewards such as financial compensation, bonuses, promotions, and benefits remain central in motivating employees to achieve short-term productivity goals. Recent evidence suggests that these rewards not only enhance efficiency but also increase employee satisfaction and commitment. Alonso and García (2024) found that financial and promotional incentives significantly improved task performance in high-tech manufacturing industries. Similarly, Wah and Nathaniel (2025) confirmed that extrinsic motivators strongly predict productivity in competitive organizational contexts. These findings suggest that in sectors such as the EV industry, extrinsic rewards play a decisive role in reinforcing effort and ensuring operational efficiency.

H1a: Extrinsic rewards have a significant positive impact on task performance.

In addition to task-related outcomes, extrinsic rewards also influence discretionary behaviors that contribute to the broader organizational environment. Malak et al. (2025) demonstrated that when employees perceive extrinsic rewards as fair and consistent, their organizational commitment increases, which in turn encourages collaboration and organizational citizenship behaviors. Shahzad and

Adil (2024) further emphasized that transparent compensation structures foster prosocial behaviors, trust, and contextual performance. These findings highlight the broader role of extrinsic incentives in strengthening cooperation and organizational alignment.

H1b: Extrinsic rewards have a significant positive impact on contextual performance.

Intrinsic rewards such as recognition, career development, learning opportunities, and responsibility are increasingly viewed as critical for sustaining long-term engagement and innovation. Self-Determination Theory highlights that intrinsic motivators fulfill employees' psychological needs for autonomy, competence, and relatedness, thereby enhancing performance quality^[10]. Recent studies confirm this link. Hoxha et al. (2024) found that intrinsic motivators including responsibility and learning opportunities significantly improve task performance by enhancing employee engagement. Figueiredo et al. (2025) further noted that intrinsic rewards in innovation-driven industries stimulate creativity and knowledge sharing, thereby strengthening both task-oriented outcomes and adaptive capacities.

H2a: Intrinsic rewards have a significant positive impact on task performance.

Intrinsic rewards are also strongly associated with contextual performance. By promoting a sense of purpose and long-term organizational identification, they encourage employees to go beyond formal job requirements. Empirical findings show that intrinsic rewards such as recognition and meaningful work foster prosocial behaviors, collaboration, and cultural alignment^[16]. Within the EV industry, where adaptability and innovation depend on collective effort, intrinsic rewards play an important role in building cooperative and resilient teams.

H2b: Intrinsic rewards have a significant positive impact on contextual performance.

2.5. Conceptual Framework

Conceptual framework as show in Figure 1.

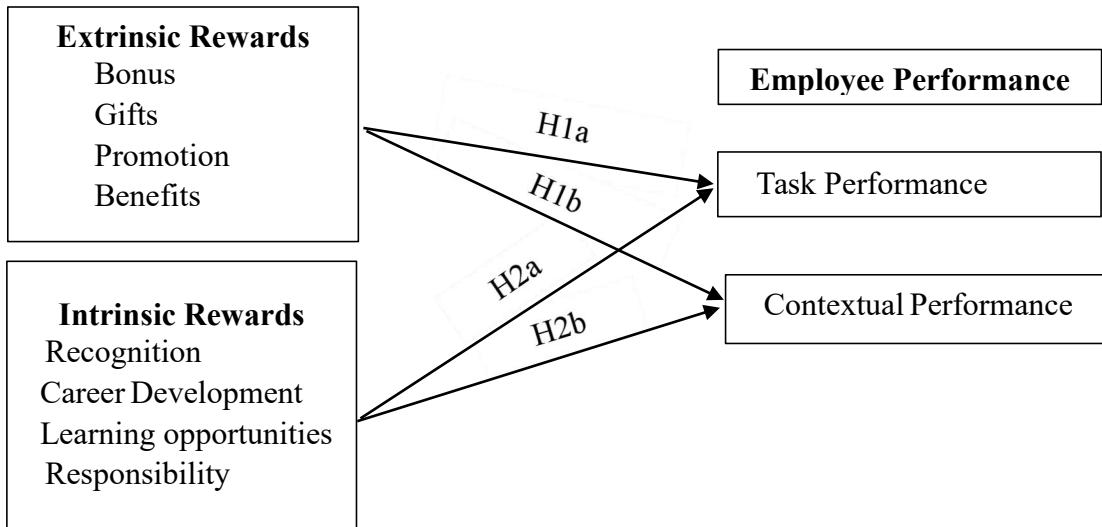


Figure 1. Conceptual Framework

Extrinsic and intrinsic rewards serve as the core independent variables in this study, each influencing the two dimensions of employee performance through different mechanisms. Extrinsic rewards are more directly associated with task performance, as they enhance employee efficiency and output. At the same time, when supported by perceptions of fairness and organizational alignment, extrinsic rewards can also indirectly contribute to contextual performance. Intrinsic rewards, on the other hand, focus on fulfilling employees' psychological needs, thereby fostering long-term engagement and creativity. Their influence on contextual performance is particularly strong, while they also improve task performance by strengthening employees' sense of responsibility and opportunities for career development. Based on this reasoning, the study proposes four hypotheses and develops a conceptual framework in which extrinsic and intrinsic rewards jointly influence task and contextual performance.

3. Research Methodology

This chapter outlines the methodological framework adopted in the study, which was designed to examine the influence of extrinsic and intrinsic rewards on employee performance in China's electric vehicle (EV) industry. The methodology encompasses the research design, site and population, sample size determination, research instrument, reliability and validity, and data analysis

techniques. The structured approach ensures methodological rigor and strengthens the credibility of the findings.

3.1. Research Design

The study employed a quantitative research design to investigate the hypothesized relationships between extrinsic rewards, intrinsic rewards, and the two dimensions of employee performance, namely task performance and contextual performance. A quantitative approach was considered appropriate because it allows for the use of standardized measurement instruments, facilitates objective comparisons, and enables statistical testing of hypotheses with precision^[9].

The research process followed five sequential stages:

1. Development of a structured questionnaire based on the conceptual framework and prior literature.
2. Determination of sample size using Yamane's (1967) formula.
3. Data collection through a structured survey administered to employees.
4. Application of descriptive and inferential statistical methods, including multiple regression, to examine hypothesized relationships.
5. Interpretation of the findings considering theoretical and managerial implications.

To minimize potential response bias inherent in self-reported data, several control measures were incorporated into the survey design and data processing. The questionnaire was administered anonymously to ensure confidentiality and encourage honest responses. Reverse-coded items were included to detect acquiescence bias, and an attention check item was added to identify inattentive responses. During the data analysis stage, outlier detection and logical consistency checks were conducted to filter extreme or patterned answers, thereby reducing the influence of response bias on the study's findings.

3.2. Research Site and Population

The research site was Kunming X Center, located in Yunnan Province, China. The center functions as a regional headquarters for EV production, technology development, and customer services, integrating upstream and downstream segments of the EV value chain. It was selected due to its geographic significance as a bridge between China's inland provinces and Southeast Asian markets, as well as its economic role in supporting regional industrial upgrading.

Kunming X Center can also be considered representative of China's EV industry. Its organizational structure includes engineering, manufacturing, sales, after-sales service, management, and support functions, which mirrors the composition of large-scale EV enterprises nationwide. The heterogeneous workforce enhanced the representativeness of the sample and allowed the

findings to be generalized across diverse organizational contexts. Furthermore, the center combines advanced production facilities, ongoing R&D initiatives, and standardized performance management practices, providing an appropriate setting for examining how reward systems influence employee outcomes.

3.3. Sample Size Determination

The selection of Kunming X Center as the research site carries a certain degree of representativeness. As a major regional headquarters in China's electric vehicle (EV) industry, the center not only integrates multiple functions such as R&D, manufacturing, sales, and services, but also plays a demonstrative role in regional supply chain collaboration and technological innovation. Its workforce includes a diverse range of positions, such as technical staff, production workers, sales and service personnel, and managerial employees, which to some extent reflects the heterogeneity of employee groups and reward systems within the broader EV industry.

The sample size for this study was determined using Yamane's (1967) sample size formula, which provides a systematic method for estimating appropriate sample sizes from finite populations at a specified margin of error. The formula is written as:

$$n = \frac{N}{1+Ne^2}$$

where n is the required sample size, N is the population size, and e is the margin of error. For this study, the population consisted of 250 employees at Kunming X Center, with the margin of error set at 5 percent (0.05). Substituting these values into the formula yields:

$$(n) = \frac{250}{1+250*0.05^2} = 154 \text{ respondents.}$$

Thus, a total of 154 respondents was determined as the minimum sample size necessary to ensure statistical validity. While Kunming X Center is considered representative due to its integrated functions and diverse workforce, the reliance on a single enterprise inevitably limits the external validity and generalizability of the findings across the entire EV industry.

3.4. Measurement of Variables

All constructs in this study were measured using a structured questionnaire developed from the conceptual framework and prior literature. A five-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree) was applied.

- Extrinsic Rewards were measured across four dimensions: Bonus (3 items), Gifts (4 items), Promotion (3 items), and Benefits (3 items, including one reverse-coded).
- Intrinsic Rewards were measured across four dimensions: Recognition (4 items, including one reverse-coded), Career Development (3 items), Learning Opportunities (3 items), and Responsibility (3 items).
- Employee Performance was measured in two dimensions: Task Performance (5 items) and Contextual Performance (6 items).
- To ensure data quality, an attention check item was also included.

The detailed measurement items are presented in Appendix A. Reliability and validity tests confirmed good internal consistency (Cronbach's alpha values > 0.70) and construct validity ($KMO > 0.80$; Bartlett's Test of Sphericity, $p < 0.001$).

4. Results

The regression models for both task performance and contextual performance were found to be statistically significant. For task performance, extrinsic and intrinsic rewards jointly explained approximately 43% of the variance, $F(2,151) = 57.39$, $p < 0.001$. For contextual performance, the predictors accounted for about 45% of the variance, $F(2,151) = 62.25$, $p < 0.001$. These results indicate that the proposed models provide strong explanatory power and confirm the theoretical expectation that both extrinsic and intrinsic rewards are critical determinants of employee performance. The detailed ANOVA results are presented in Table 1 and Table 2.

Table 1. ANOVA for Regression Model of Task Performance with Extrinsic and Intrinsic Rewards

Model	Sum of Squares	Df	Mean Square	F	Sig.
3	Regression	2.015	2	1.0075	57.39
	Residual	2.650	151	0.01755	
	Total	4.665	153		

Source: Statistics Software

Note: ** indicates statistical significance at the 0.01 level.

Table 2. ANOVA for Regression Model of Contextual Performance with Extrinsic and Intrinsic Rewards

Model	Sum of Squares	Df	Mean Square	F	Sig.
3	Regression	2.124	2	1.062	62.25
	Residual	2.576	151	0.01706	
	Total	4.700	153		

Source: Statistics Software

Note: ** indicates statistical significance at the 0.01 level.

Table 3 presents the variables employed in the analysis. The independent variables consist of extrinsic rewards (X1)—bonuses (X11), gifts (X12), promotions (X13), and benefits (X14)—and intrinsic rewards (X2)—recognition (X21), career development (X22), learning opportunities (X23), and responsibility (X24). The dependent variable (Y) is employee performance, which is further divided into two dimensions: task performance (Y1) and contextual performance (Y2). Statistical significance is reported at two levels, with * denoting $p < 0.05$ and ** denoting $p < 0.01$, thereby illustrating the strength of the relationships between the reward variables and employee performance outcomes.

Table 3. Correlation Analysis of Independent and Dependent Variables

	x_1	x_11	x_12	x_13	x_14	x_2	x_21	x_22	x_23	x_24	Y	Y_1	Y_2
x_1	1												
x_11		0.878**	1										
x_12			0.901**	0.769**	1								
x_13				0.891**	0.766**	0.790**	1						
x_14					0.875**	0.713**	0.781**	0.737**	1				
x_2						-0.054	-0.023	-0.092	-0.054	-0.090	1		
x_21							-0.102	-0.068	-0.113	-0.093	-0.106	0.877**	1
x_22								-0.070	-0.031	-0.084	-0.057	-0.088	0.866**
x_23									-0.098	-0.056	-0.107	-0.083	-0.126
x_24										0.015	0.070	-0.037	0.034
Y											0.576**	0.559**	0.585**
Y_1												0.502**	0.490**
Y_2													0.538**

Significance levels: $p < 0.01$: Marked as ** (highly significant); ** $p < 0.05$: Marked as * (significant).

Source: Prepared by the authors themselves.

The results support H1a, H1b, H2a, and H2b, confirming that both extrinsic and intrinsic rewards exert significant positive effects on employee performance. Extrinsic rewards (bonuses, gifts, promotions, and benefits) are positively correlated with task performance ($r = 0.514$) and contextual performance ($r = 0.546$), with gifts showing the strongest effect. Intrinsic rewards (recognition, career development, learning opportunities, and responsibility) also display significant positive associations, with responsibility most strongly related to task ($r = 0.451$) and contextual performance ($r = 0.523$). These findings align with theoretical expectations: extrinsic rewards enhance short-term efficiency, while intrinsic rewards foster collaboration and organizational citizenship behaviors.

A weak negative correlation between extrinsic and intrinsic rewards ($r = -0.054$) suggests that the two systems operate relatively independently. Such negative associations may arise from substitution effects, role-specific preferences, or shortcomings in reward system design. Consequently, the study emphasizes the importance of a balanced reward structure that ensures fairness and transparency in extrinsic incentives while strengthening intrinsic motivators such as recognition and development opportunities. This integrated approach maximizes the complementary effects of rewards and enhances overall employee performance.

Table 4. Regression Analysis of Task and Contextual Performance in Relation to Intrinsic and Extrinsic Rewards

Variable	Intercept	Coefficient (a/b)	Standard Error	Beta	t	VIF	R ²	Adjusted R ²	F	P
Task (Extrinsic)	2.365	0.411	0.152	0.515	7.407	1.265	0.265	0.260	54.867	< 0.001*
Contextual (Extrinsic)	2.252	0.441	0.147	0.558	8.298	1.312	0.312	0.307	68.849	< 0.001*
Task (Intrinsic)	2.535	0.367	0.157	0.466	6.498	1.200	0.217	0.212	42.223	< 0.001*
Contextual (Intrinsic)	2.469	0.386	0.154	0.494	7.014	1.250	0.245	0.240	49.198	< 0.001*

Source: Statistics Software

Note: ** indicates statistical significance at the 0.01 level.

Table 5. Regression coefficients for the impact of intrinsic and extrinsic rewards on employee performance

	x_{11}	x_{12}	x_{13}	x_{14}	x_1	x_{21}	x_{22}	x_{23}	x_{24}	x_2
Y_1	0.490	0.514	0.438	0.425	0.502	0.393	0.405	0.413	0.451	0.456
Y_2	0.523	0.546	0.491	0.465	0.538	0.415	0.414	0.407	0.523	0.482

5. Conclusions

This study examined the relationship between extrinsic and intrinsic rewards and employee performance at Kunming X Center. The findings demonstrated that both task performance (Mean = 3.975) and contextual performance (Mean = 3.981) were at high levels, reflecting the competence, teamwork, and adaptability of employees. Regression results confirmed that extrinsic rewards such as gifts and bonuses significantly influenced employee outcomes, explaining 26.0 percent of the variance in task performance and 30.7 percent in contextual performance. Intrinsic rewards such as recognition and responsibility also had a significant impact, accounting for 21.2 percent of task performance and 24.0 percent of contextual performance. Taken together, the two reward categories explained over 40 percent of the variance, providing strong empirical support for the hypotheses.

Crucially, the results highlight the importance of balancing extrinsic and intrinsic rewards. Extrinsic incentives drive immediate productivity and operational efficiency, while intrinsic motivators sustain long-term engagement, adaptability, and organizational citizenship behavior. The evidence suggests that over-reliance on one type of reward risks creating either short-lived motivation (if only extrinsic rewards are emphasized) or insufficient immediate performance gains (if only intrinsic motivators are relied upon). By integrating short-term extrinsic incentives with long-term intrinsic motivators, organizations in the EV industry can design reward systems that not only enhance task efficiency but also strengthen contextual performance, thereby achieving sustainable competitiveness.

6. Discussions

The findings of this study demonstrate that both extrinsic and intrinsic rewards play significant roles in enhancing employee performance. Extrinsic rewards such as bonuses, gifts, promotions, and benefits showed a strong positive impact on task and contextual performance, supporting the argument that tangible incentives are effective in achieving immediate productivity gains [2] [29]. At the same time, intrinsic rewards including recognition, career development, learning

opportunities, and responsibility also exhibited meaningful positive effects, indicating their importance in fostering long-term engagement, innovation, and organizational citizenship behavior^{[12][16]}.

The combination of high tasks and contextual performance levels observed at Kunming X Center reflects the complementary influence of these reward systems. Extrinsic rewards provide short-term efficiency by motivating employees to achieve operational targets, while intrinsic rewards strengthen adaptability, innovation, and sustained commitment over time. This complementarity echoes Herzberg's Two-Factor Theory, which highlights the need to integrate hygiene factors (e.g., financial incentives) with motivators (e.g., recognition and responsibility) to sustain both satisfaction and performance^[15]. Similarly, Self-Determination Theory suggests that rewards are most effective when they balance external incentives with the fulfillment of autonomy, competence, and related needs, thereby enhancing both task and contextual performance^[10].

Taken together, the results confirm the hypotheses of this study and emphasize the importance of designing a balanced and strategically aligned reward system that addresses both immediate performance needs and long-term organizational objectives. Over-reliance on extrinsic rewards may generate only temporary motivation, whereas relying solely on intrinsic motivators could limit short-term productivity. By deliberately balancing the two, organizations in the EV industry can create integrated systems that not only boost efficiency but also build resilience, innovation, and sustainable employee engagement. This insight extends prior studies that stress the complementary rather than substitutive nature of extrinsic and intrinsic motivators^{[7][14]} and underscores that balance is the key to achieving holistic and enduring employee performance outcomes.

A notable finding of this study is the weak negative correlation between extrinsic and intrinsic rewards ($r = -0.054$). While general explanations such as substitution effects, role-specific preferences, or deficiencies in reward system design may partly account for this relationship, the unique context of the EV industry offers additional insights. The sector is characterized by high R&D investment, intensive innovation demands, and a reliance on employees with specialized technical expertise. In such an environment, employees may prioritize intrinsic rewards such as career development, recognition, and responsibility over extrinsic incentives, particularly when the latter are tied to short-term outputs that do not align with the long-term nature of innovation projects. This misalignment may explain why extrinsic and intrinsic rewards appear to compete rather than reinforce each other in some cases.

Comparing the results with prior studies further highlights the distinctiveness of these findings. For example, Cerasoli et al. (2014) reported that intrinsic motivation and extrinsic incentives jointly predict performance outcomes in general organizational settings, often complementing each other. Similarly,

Kuvaas et al. (2017) found that intrinsic rewards can amplify the motivational effects of extrinsic rewards when employees perceive organizational support. In contrast, the weak negative relationship observed in this study suggests that, in the EV industry, reward systems may not yet be fully optimized to integrate both forms of motivation. This divergence underscores the need for context-specific reward strategies tailored to industries with long innovation cycles and complex technical demands.

These findings contribute to theory by demonstrating that the interaction between extrinsic and intrinsic rewards may vary depending on industry characteristics, thereby extending the generalizability of Self-Determination Theory and related frameworks. Practically, the results suggest that EV companies should carefully balance short-term extrinsic incentives with long-term intrinsic motivators, ensuring that compensation systems align with the strategic demands of sustained innovation.

7. Recommendations

7.1. Practical Recommendations

To strengthen employee performance, China's EV industry should adopt a more integrated reward system that combines both extrinsic and intrinsic incentives. AI-driven performance tracking and real-time feedback mechanisms can improve transparency and responsiveness, while personalized training programs will enhance individual growth. Clear career progression opportunities, flexible work arrangements, and well-designed recognition initiatives can further boost engagement. Performance-based incentives supported by continuous managerial guidance, mentoring, and constructive feedback will help maintain high productivity over time.

7.2. Limitations

This study has several limitations that should be acknowledged. First, the data were collected exclusively from employees of Kunming X Center. Although this organization represents an important regional hub in the EV industry, the reliance on a single firm inevitably limits the external validity of the findings. The results may not be fully generalizable to other firms across different regions or to other segments of the EV value chain, such as upstream component manufacturing or downstream sales and service. This narrow focus reduces the extent to which the conclusions can be applied to the industry as a whole.

Second, while the study systematically examined the independent effects of extrinsic and intrinsic rewards, it did not empirically test their interaction. As highlighted in the theoretical review, extrinsic and intrinsic motivators may function in complementary or even substitutive ways. The absence of such analysis constrains the explanatory depth of the theoretical framework and may

oversimplify the complex dynamics of the reward–performance relationship. Future research could employ moderation or mediation models, such as structural equation modeling, to more fully capture these mechanisms.

Third, the study relied on self-reported survey data, which are subject to biases such as social desirability and memory recall. Although anonymity, reverse-coded items, attention checks, and outlier screening were applied to reduce these risks, these measures cannot fully eliminate them. Moreover, the cross-sectional design only provides a snapshot of employee perceptions at one point in time, making it difficult to draw causal conclusions or assess the sustainability of reward effects over the longer term. A longitudinal or mixed-method design would provide stronger insights into how reward systems shape performance trajectories.

Finally, the analysis did not incorporate broader contextual influences such as macroeconomic conditions, labor market competition, or organizational policy shifts. Given that the EV industry is highly dynamic and sensitive to both government regulation and global technological trends, overlooking these factors may have constrained the explanatory power of the study. Future research should therefore adopt a more holistic design that integrates micro-level employee data with macro-level contextual drivers to build a more comprehensive understanding of reward systems in the EV sector.

7.3. Future Research Suggestions

Future research should address these limitations to strengthen the validity and applicability of findings. First, expanding the scope of analysis to include employees from multiple organizations and industries would enhance the generalizability of the results beyond Kunming X Center. Second, to overcome the reliance on self-reported data, future studies could adopt mixed method approaches or incorporate objective performance indicators to reduce potential response bias. Third, longitudinal designs are recommended to capture the long-term effects of reward systems and to examine how changes in extrinsic and intrinsic incentives influence employee retention and sustained performance over time. Finally, future research should incorporate external contextual factors, such as macroeconomic conditions, labor market dynamics, and organizational policy environments, to provide a more comprehensive understanding of how reward systems operate in complex and dynamic settings. In addition, exploring how leadership styles and advanced technologies such as artificial intelligence interact with reward systems may offer valuable insights for designing adaptive and personalized reward strategies.

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Row.

Appendix A. Questionnaire

Title: Factors that Influence Employee Performance at Kunming X Center

Purpose: This questionnaire was designed to examine the impact of extrinsic rewards (e.g., bonuses, gifts, promotions, benefits) and intrinsic rewards (e.g., recognition, career development, learning opportunities, responsibility) on employee performance (task performance and contextual performance) at Kunming X Center. The purpose is to identify key motivational drivers and provide measures to improve employee performance in the context of China's EV industry. The items were adapted from prior validated studies (e.g., Deci & Ryan, 2000; Cerasoli et al., 2014) and modified to fit the EV industry context."

Part I. Demographic Information

1. Gender

Male Female

2. Age

Below 30 years old 30–39 years old
 40–49 years old 50–60 years old

3. Education

Diploma High Diploma
 Bachelor's Master's Doctorate or Higher

4. Income (per month)

¥4,000–¥6,000 ¥6,001–¥8,000
 ¥8,001–¥10,000 ¥10,001–¥15,000
 Above ¥15,001

5. Years working at Kunming X Center

Less than 1 year 1–3 years
 4–6 years 7–10 years
 More than 10 years

6. Department

Engineering Manufacturing Sales
 After-sales Service Management
 Other (please specify): _____

7. Position

- Executive Management (e.g., CEO, CFO, COO)
- Middle Management (e.g., Department/Project Manager)
- Professional Staff (e.g., Engineer, R&D, Finance)
- Employee (e.g., Sales, Customer Service, Production)

Part II. Measurement Items

Instruction: Please indicate your level of agreement with each statement.

(1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree)

8. Extrinsic Rewards

8.1 Bonus

8.1.1 The bonuses offered by the company have a positive impact on my work performance.

8.1.2 The frequency of bonus payment has a significant impact on my work motivation.

8.1.3 The amount of bonus is directly related to my work performance.

8.2 Gifts

8.2.1 The gifts issued by the company have a positive impact on my job satisfaction.

8.2.2 The type and usefulness of gifts have a significant effect on my job motivation.

8.2.3 Gifts play an important role in employee performance management.

8.2.4 The value of gifts plays a key role in influencing my job satisfaction and motivation.

8.3 Promotion

8.3.1 Promotion opportunities have a significant positive impact on my job performance.

8.3.2 I am satisfied with the fair promotion path offered by the company, which influences my job performance.

8.3.3 The opportunity for promotion can effectively motivate me to perform better.

8.4 Benefits

8.4.1 The company's benefit system does not motivate me to improve my performance.

8.4.2 The variety of benefits has a significant effect on my motivation at work.

8.4.3 Improvements in benefits can help improve my overall job performance.

9. Intrinsic Rewards

9.1 Recognition

9.1.1 Recognition of my work (e.g., praise, rewards) has a positive impact on my motivation.

9.1.2 The type of recognition provided by the company significantly impacts my work attitude.

9.1.3 The frequency of recognition has a significant effect on improving my performance.

9.1.4 Even when recognition is given, it does not affect my motivation at work.

9.2 Career Development

9.2.1 Career development opportunities have a significant positive impact on my performance.

9.2.2 I am satisfied with the career development support provided by the company, which affects my job performance.

9.2.3 The increase in career development opportunities has improved my efficiency.

9.3 Learning Opportunities

9.3.1 Learning opportunities provided by the company significantly improve my job performance.

9.3.2 I am satisfied with the learning opportunities provided, which positively affect my work.

9.3.3 The increase in learning opportunities has helped me improve efficiency.

9.4 Responsibility

9.4.1 The sense of responsibility given by the company has a significant impact on my performance.

9.4.2 An increased sense of responsibility positively affects my work attitude and performance.

9.4.3 An increased sense of responsibility increases my motivation and efficiency.

10. Employee Performance

10.1 Task Performance

10.1.1 I have the competencies that my job requires.

10.1.2 I work effectively and efficiently.

10.1.3 I understand and carry out work-related procedures.

10.1.4 I work in a planned and organized manner to complete tasks fully and on time.

10.1.5 I am eager to acquire new skills related to my job.

10.2 Contextual Performance

10.2.1 I take extra care and responsibility while performing my duties.

10.2.2 I contribute to creating a positive working environment.

10.2.3 If I encounter a situation preventing task completion, I try to resolve it.

10.2.4 I help and encourage colleagues to complete their work.

10.2.5 Even when criticized, I defend my organization.

10.2.6 I am proud to be part of this organization.

10.3 Attention Check (Logic Validation)

10.3.1 For quality control, please select “Agree” for this item.