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Differential Effects of Intrinsic and Extrinsic Motivation on Multidimensional Employee Performance in a Chinese Manufacturing Firm

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Abstract

This study investigated the effects of intrinsic and extrinsic motivation on multidimensional employee performance in a Chinese manufacturing firm. Data were collected from 129 employees of Hebei Jinqiao Cable Co., Ltd. using a structured questionnaire and analyzed through descriptive statistics and multiple regression analysis. Both intrinsic and extrinsic motivation significantly influenced overall employee performance, with intrinsic motivation demonstrating a stronger effect than extrinsic motivation. At the dimensional level, task performance was significantly predicted by achievement, recognition, compensation, and working conditions. Contextual performance was primarily driven by responsibility and achievement, whereas adaptive performance depended on responsibility and employment relationships. These findings demonstrate that motivational factors do not affect all dimensions of employee performance in the same way. The study highlights the need for manufacturing organizations to adopt targeted motivation strategies that align with specific performance outcomes rather than relying on a single, generalized approach.

Keywords: Intrinsic Motivation; Extrinsic Motivation; Multidimensional Employee Performance; Chinese Manufacturing Firm

Introduction

In recent years, China's manufacturing sector has shifted toward high-quality economic development, increasing pressure on firms to improve productivity, efficiency, and product quality (Zeng, 2021). Industries like cable and wire manufacturing remain important to industrial development, yet many firms continue to face problems in labor productivity, employee stability, and organizational performance (Ivanov & Dolgui, 2021). This suggests that technology alone may not sustain competitiveness and that employee motivation remains important.

Employee performance in manufacturing extends beyond routine task completion to include cooperation, adaptability, and responses to operational and technological change (Koopmans *et al.*, 2014). Employees are increasingly expected to maintain efficiency while showing initiative and flexibility, making motivation important to engagement, persistence, and work effectiveness (Park *et al.*, 2020).

Herzberg's Two-Factor Theory distinguishes intrinsic motivators, including achievement, recognition, and responsibility, from extrinsic factors such as compensation, employment relationships, and working conditions (Herzberg, 1987). Recent research also separates intrinsic motivation, based on interest and satisfaction, from extrinsic motivation, shaped by external rewards (Morris *et al.*, 2022). Self-Determination Theory further links motivation to autonomy, competence, and relatedness (Ryan & Deci, 2020). These perspectives suggest that intrinsic and extrinsic motivation may influence performance differently.

However, intrinsic and extrinsic motivation are often examined separately, while employee performance is frequently treated as a single outcome. Less is known about how achievement, recognition, responsibility, compensation, employment relationships, and working conditions affect task,



contextual, and adaptive performance, especially in Chinese manufacturing firms. Hebei Jinqiao Cable Co., Ltd. was selected because its production structure requires task efficiency, cross-unit cooperation, and adaptation to operational and technological change, while the organization sought evidence to improve motivation and performance management. The study examines intrinsic and extrinsic motivation within one framework and assesses their effects on overall, task, contextual, and adaptive performance.

Research Objectives

1. To examine the effects of intrinsic and extrinsic motivation on overall employee performance.
2. To analyze the effects of motivational dimensions on overall employee performance.
3. To examine the effects of motivational dimensions on task, contextual, and adaptive performance.

Literature Review

The relationship between employee motivation and performance has been widely studied, with Herzberg's Two-Factor Theory remaining an important foundation (Herzberg *et al.*, 1959; Herzberg, 1987). The theory distinguishes intrinsic motivators, including achievement, recognition, and responsibility, from extrinsic hygiene factors such as compensation, working conditions, and interpersonal relationships. Recent research continues to separate intrinsic and extrinsic work motivation (Van den Broeck *et al.*, 2021; Morris *et al.*, 2022). Intrinsic factors tend to support engagement, commitment, initiative, and adaptability, while extrinsic factors help maintain stability, reduce dissatisfaction, and support task efficiency (Gagné & Deci, 2005; Ryan & Deci, 2020; Griffin *et al.*, 2007). However, it remains unclear whether these motivational dimensions affect different forms of performance in the same way, especially in Chinese manufacturing firms.

Intrinsic motivation has been linked to sustained performance, persistence, creativity, and retention, while extrinsic factors such as compensation and working conditions remain important for operational consistency and routine task performance (Van den Broeck *et al.*, 2016; Ryan & Deci, 2020). This distinction is relevant in manufacturing, where employees must perform assigned duties efficiently while also responding to changing work demands.

Employee performance is commonly viewed as comprising task, contextual, and adaptive performance (Koopmans *et al.*, 2014). Task performance concerns core job duties, contextual performance covers supportive and discretionary behavior, and adaptive performance reflects adjustment to change (Griffin *et al.*, 2007). In manufacturing, these dimensions capture efficiency, cooperation, and responses to technological and organizational change. Task performance may depend on both intrinsic and extrinsic factors, contextual performance may rely more on intrinsic motivation, and adaptive performance may be associated with responsibility and supportive employment relationships.

Although research generally supports a positive motivation-performance relationship (Van den Broeck *et al.*, 2016; Ryan & Deci, 2020), intrinsic and extrinsic motivation are often studied



separately, and employee performance is frequently treated as a single outcome. Evidence from manufacturing firms, especially in China, also remains limited. The present study therefore examines achievement, recognition, responsibility, compensation, employment relationships, and working conditions within one framework to assess their effects on overall, task, contextual, and adaptive performance.

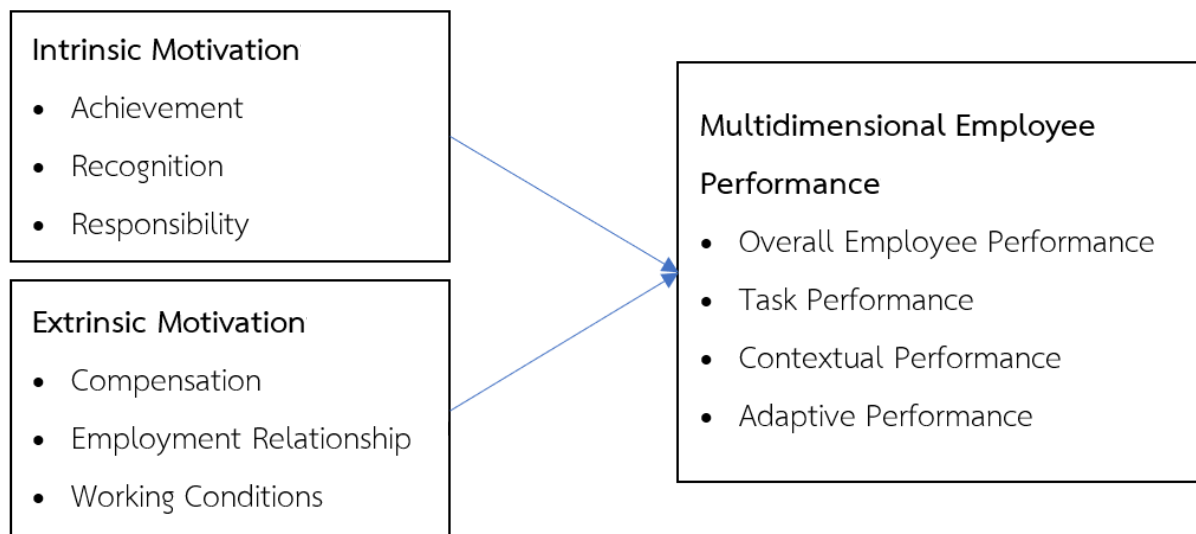


Figure 1 Conceptual Framework

Figure 1 presents the study's conceptual framework. Intrinsic motivation comprises achievement, recognition, and responsibility, while extrinsic motivation comprises compensation, employment relationships, and working conditions. The study examines the effects of intrinsic and extrinsic motivation on overall employee performance and whether their dimensions have different effects on overall, task, contextual, and adaptive performance. This framework therefore assesses whether motivational effects vary across performance outcomes in the Chinese manufacturing context.

Accordingly, the following hypotheses are proposed:

H1: Intrinsic motivation and extrinsic motivation positively influence overall employee performance at Hebei Jinqiao Cable Co., Ltd.

H2: The dimensions of intrinsic and extrinsic motivation differentially influence overall employee performance at Hebei Jinqiao Cable Co., Ltd.

H3: The dimensions of intrinsic and extrinsic motivation differentially influence task performance at Hebei Jinqiao Cable Co., Ltd.

H4: The dimensions of intrinsic and extrinsic motivation differentially influence contextual performance at Hebei Jinqiao Cable Co., Ltd.

H5: The dimensions of intrinsic and extrinsic motivation differentially influence adaptive performance at Hebei Jinqiao Cable Co., Ltd.



Research Methodology

Research Design

This study employed a quantitative research design to examine the effects of intrinsic and extrinsic motivation on multidimensional employee performance at Hebei Jinqiao Cable Co., Ltd.

Population and Sample

The population comprised 209 employees of Hebei Jinqiao Cable Co., Ltd. G*Power 3.1 indicated a minimum sample of 98 for multiple regression, based on a medium effect size ($f^2 = 0.15$), $\alpha = .05$, and power = .80 (Cohen, 1988; Faul *et al.*, 2009). In April 2026, an online questionnaire was distributed to all employees across departments. Participation was voluntary, and 129 complete responses were retained. Respondents were informed of the study purpose and assured of confidentiality.

Research Instrument

The questionnaire comprised 45 items across nine dimensions. Intrinsic motivation covered achievement, recognition, and responsibility (15 items; Herzberg, 1987; Gagné & Deci, 2005), extrinsic motivation covered compensation, employment relationships, and working conditions (15 items; Van den Broeck *et al.*, 2016), and employee performance covered task, contextual, and adaptive performance (15 items; Koopmans *et al.*, 2014). These dimensions reflect internal and external work conditions and key performance behaviors in manufacturing settings. All items used a five-point Likert scale (Likert, 1932) and were translated into Chinese and back-translated into English. IOC values from three experts ranged from .67 to 1.00 (Rovinelli & Hambleton, 1977). Cronbach's alpha ranged from .758 to .815 for motivation and .798 to .842 for performance, exceeding .70 (Cronbach, 1951).

Data Analysis

Data analysis employed both descriptive and inferential statistics. Descriptive statistics were used to summarize intrinsic motivation, extrinsic motivation, and employee performance, while multiple regression analysis examined the effects of intrinsic motivation, extrinsic motivation, and their dimensions on overall, task, contextual, and adaptive performance. Multivariate outliers were assessed using Mahalanobis distance, with cases exceeding the critical chi-square value at $p < .001$ considered potential outliers. Multicollinearity was examined using variance inflation factor (VIF) and tolerance values, with VIF below 5 and tolerance above .20 considered acceptable. Linearity and homoscedasticity were assessed through scatterplots and residual plots. Residual normality was examined using the Shapiro-Wilk test, with a non-significant result indicating no significant departure from normality.



Results

Table 1 Descriptive Statistics of Intrinsic and Extrinsic Motivation

Motivation	N	$\bar{X}$	S.D.
1. Intrinsic Motivation	129	3.264	0.670
2. Extrinsic Motivation	129	3.188	0.647
Total	129	3.226	0.552

The results indicate moderate levels of motivation overall ($\bar{X}$ = 3.226, S.D. = 0.552). Intrinsic motivation ($\bar{X}$ = 3.264, S.D. = 0.670) is slightly higher than extrinsic motivation ($\bar{X}$ = 3.188, S.D. = 0.647).

Table 2 Descriptive Statistics of Employee Performance and Its Dimensions

Employee Performance	N	$\bar{X}$	S.D.
1. Task Performance	129	3.231	0.944
2. Contextual Performance	129	3.242	0.850
3. Adaptive Performance	129	3.132	0.869
Total	129	3.202	0.747

The results further show that overall employee performance was moderate ($\bar{X}$ = 3.202, S.D. = 0.747). Contextual performance had the highest mean ($\bar{X}$ = 3.242), followed by task performance ($\bar{X}$ = 3.231), while adaptive performance was lowest ($\bar{X}$ = 3.132). This lower adaptive performance may reflect greater difficulty in responding to technological, procedural, or organizational changes than in completing routine tasks or cooperative workplace behaviors.

Before hypothesis testing, multiple regression assumptions were examined. Mahalanobis distance identified no multivariate outliers at $p < .001$ (Hair *et al.*, 2019). VIF values ranged from 1.445 to 1.540, with tolerance values above 0.60, indicating no multicollinearity. Scatterplots and residual plots supported linearity and homoscedasticity, while the Shapiro-Wilk test confirmed residual normality ($p = 0.602$) (Field, 2013). Overall, the regression assumptions were satisfied.

Multiple Regression Results

Multiple regression analysis examined the effects of intrinsic and extrinsic motivation on overall, task, contextual, and adaptive employee performance.

Table 3 Regression Results for Intrinsic and Extrinsic Motivation on Employee Performance

Predictor	B	SE	t	p	β
Intercept	-0.025	0.265	-0.096	0.924	
Intrinsic Motivation	0.534	0.073	7.317	<.001	0.479
Extrinsic Motivation	0.466	0.076	6.157	<.001	0.403
R=0.741; R²=0.549; Adjusted R²=0.542					

Note. B = unstandardized regression coefficient; SE = standard error; β = standardized regression coefficient.



The model explained 54.90% of the variance in overall employee performance ($R^2 = 0.549$; Adjusted $R^2 = 0.542$) and was significant ($p < .001$). Both intrinsic and extrinsic motivation had positive effects, with intrinsic motivation showing a stronger effect ($\beta = 0.479$, $p < .001$) than extrinsic motivation ($\beta = 0.403$, $p < .001$). This suggests that internal motivational factors, including achievement, recognition, and responsibility, may play a stronger role in supporting sustained employee performance. Therefore, H1 was supported.

Table 4 Regression Results for Motivational Dimensions on Employee Performance

Predictor	B	SE	t	p	β
Intercept	-0.025	0.270	-0.092	0.927	
Achievement	0.228	0.069	3.298	<.001	0.247
Recognition	0.131	0.071	1.846	0.067	0.139
Responsibility	0.173	0.064	2.693	0.008	0.202
Compensation	0.175	0.073	2.415	0.017	0.176
Employment Relationship	0.130	0.066	1.977	0.050	0.147
Working Conditions	0.164	0.067	2.433	0.016	0.180
R=0.743; $R^2=0.553$; Adjusted $R^2=0.531$					

Note. B = unstandardized regression coefficient; SE = standard error; β = standardized regression coefficient.

The model explained 55.3% of the variance in overall employee performance ($R^2 = 0.553$; Adjusted $R^2 = 0.531$) and was significant ($p < .001$). Achievement, responsibility, compensation, and working conditions had significant positive effects, while recognition and employment relationships were not significant. This pattern shows that intrinsic and extrinsic motivational dimensions contribute differently to employee performance rather than exerting uniform effects. Therefore, H2 was partially supported.

Table 5 Regression Results for Motivational Dimensions on Task Performance

Predictor	B	SE	t	p	β
Intercept	-0.445	0.379	-1.174	0.243	
Achievement	0.294	0.097	3.025	0.003	0.251
Recognition	0.201	0.099	2.025	0.045	0.169
Responsibility	0.052	0.090	0.579	0.564	0.048
Compensation	0.285	0.102	2.800	0.006	0.226
Employment Relationship	0.085	0.092	0.924	0.357	0.076
Working Conditions	0.222	0.094	2.350	0.020	0.193
R=0.669; $R^2=0.448$; Adjusted $R^2=0.420$					

Note. B = unstandardized regression coefficient; SE = standard error; β = standardized regression coefficient.



The model explained 44.8% of the variance in task performance ($R^2 = 0.448$; Adjusted $R^2 = 0.420$) and was significant ($p < .001$). Achievement, recognition, compensation, and working conditions had significant positive effects, while responsibility and employment relationships were not significant. This indicates that task performance depends on both intrinsic and extrinsic motivational factors, including accomplishment, recognition, rewards, and supportive working conditions. Therefore, H3 was partially supported.

Table 6 Regression Results for Motivational Dimensions on Contextual Performance

Predictor	B	SE	t	p	β
Intercept	0.308	0.365	0.844	0.401	
Achievement	0.230	0.094	2.461	0.015	0.218
Recognition	0.078	0.096	0.815	0.417	0.073
Responsibility	0.228	0.087	2.630	0.010	0.235
Compensation	0.134	0.098	1.362	0.176	0.118
Employment Relationship	0.112	0.089	1.265	0.208	0.112
Working Conditions	0.128	0.091	1.413	0.160	0.124
R=0.608; $R^2=0.370$; Adjusted $R^2=0.339$					

Note. B = unstandardized regression coefficient; SE = standard error; β = standardized regression coefficient.

The model explained 37.0% of the variance in contextual performance ($R^2 = 0.370$; Adjusted $R^2 = 0.339$) and was significant ($p < .001$). Achievement and responsibility had significant positive effects, while recognition, compensation, employment relationships, and working conditions were not significant. This suggests that contextual performance depends more on intrinsic motivation, especially accomplishment and autonomy, than on external workplace conditions. Therefore, H4 was partially supported.

Table 7 Regression Results for Motivational Dimensions on Adaptive Performance

Predictor	B	SE	t	p	β
Intercept	0.062	0.370	0.169	0.866	
Achievement	0.161	0.095	1.696	0.092	0.149
Recognition	0.113	0.097	1.164	0.247	0.103
Responsibility	0.238	0.088	2.712	0.008	0.240
Compensation	0.107	0.099	1.077	0.284	0.092
Employment Relationship	0.192	0.090	2.135	0.035	0.187
Working Conditions	0.140	0.092	1.526	0.130	0.133
R=0.617; $R^2=0.381$; Adjusted $R^2=0.350$					

Note. B = unstandardized regression coefficient; SE = standard error; β = standardized regression coefficient.



The model explained 38.1% of the variance in adaptive performance ($R^2 = 0.381$; Adjusted $R^2 = 0.350$) and was significant ($p < .001$). Responsibility and employment relationships had significant positive effects, while achievement, recognition, compensation, and working conditions were not significant. This suggests that adaptive performance depends more on autonomy and supportive workplace relationships than on external reward conditions, especially when employees must adjust to operational and technological change. Therefore, H5 was partially supported.

Across the models, motivation significantly influenced employee performance, but its effects differed across performance dimensions. Both intrinsic and extrinsic motivation positively affected overall performance, with intrinsic motivation showing the stronger effect. Task performance was influenced by achievement, recognition, compensation, and working conditions; contextual performance mainly by achievement and responsibility; and adaptive performance by responsibility and employment relationships. These differences show that motivational dimensions do not affect all forms of performance uniformly and support treating employee performance as a multidimensional construct rather than relying only on an aggregated measure.

Table 8 Summary of Hypothesis Testing Results

Hypothesis	Decision
H1: Intrinsic motivation and extrinsic motivation positively influence overall employee performance at Hebei Jinqiao Cable Co., Ltd.	Supported
H2: The dimensions of intrinsic and extrinsic motivation differentially influence overall employee performance at Hebei Jinqiao Cable Co., Ltd.	Partially Supported
H3: The dimensions of intrinsic and extrinsic motivation differentially influence task performance at Hebei Jinqiao Cable Co., Ltd.	Partially Supported
H4: The dimensions of intrinsic and extrinsic motivation differentially influence contextual performance at Hebei Jinqiao Cable Co., Ltd.	Partially Supported
H5: The dimensions of intrinsic and extrinsic motivation differentially influence adaptive performance at Hebei Jinqiao Cable Co., Ltd.	Partially Supported

Note. Hypotheses were evaluated at the significance level of $p < .05$.

Discussion

The findings show that both intrinsic and extrinsic motivation significantly influence overall employee performance, which is consistent with Herzberg's Two-Factor Theory (Herzberg, 1987; Van den Broeck *et al.*, 2016). Intrinsic motivation had the stronger effect, suggesting that achievement, recognition, and responsibility may contribute more to sustained performance than external conditions alone. This interpretation is consistent with evidence that self-determined forms of motivation are positively related to employee behavior and performance (Van den Broeck *et al.*, 2021). At the dimensional level, achievement and responsibility significantly influenced overall employee performance, supporting earlier research that links intrinsic motivation with



engagement, initiative, autonomy, and sustained work behavior (Ryan & Deci, 2020; Gagné *et al.*, 2022).

Task performance was influenced by both intrinsic and extrinsic factors. Achievement and recognition had significant positive effects, together with compensation and working conditions. This suggests that employees may perform core duties more effectively when personal accomplishment and appreciation are supported by adequate rewards and favorable working conditions. Such a pattern is relevant to manufacturing settings where efficiency and consistency are central. Recognition, however, showed a narrower effect. It influenced task performance but not overall, contextual, or adaptive performance. One possible explanation is that recognition may be more closely associated with successful completion of assigned duties than with discretionary or adaptive behaviors. Its influence may therefore depend on the type of performance being encouraged.

Contextual performance was influenced mainly by achievement and responsibility, while extrinsic factors were not significant. Employees who experience accomplishment and autonomy may be more willing to cooperate and contribute beyond formal job requirements, which is consistent with evidence linking autonomous motivation with organizational citizenship behavior (Van den Broeck *et al.*, 2021). Adaptive performance showed a different pattern. Responsibility and employment relationships were significant predictors, suggesting that employees adapt more effectively when they have both autonomy and supportive workplace relationships. This interpretation is consistent with research emphasizing autonomy, competence, and relatedness under changing work conditions (Gagné *et al.*, 2022).

Evidence from other settings also suggests that motivational effects depend on job and organizational context. Morris *et al.* (2022) distinguish autonomous motivation from externally controlled motivation, while Roos *et al.* (2021) found that financial incentives do not always strengthen cooperative behavior. Medina-Garrido *et al.* (2023) and Park *et al.* (2020) further show the value of organizational support for employee well-being and adaptive performance. Compared with these settings, the present findings suggest that Chinese manufacturing work may place greater importance on compensation and working conditions for task performance, while achievement, responsibility, and employment relationships matter more for contextual and adaptive performance. Overall, the results support a multidimensional view of employee performance and show that motivational dimensions do not affect all performance outcomes uniformly. Future research may examine work engagement, job satisfaction, or organizational commitment as mediating mechanisms. Figure 2 summarizes these empirical relationships.



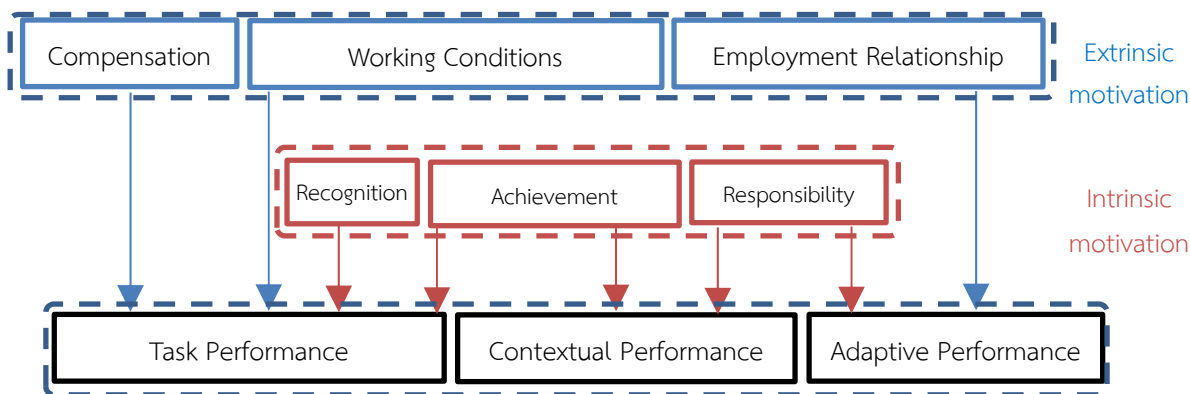


Figure 2 Empirical model of the effects of motivational dimensions on multidimensional employee performance

The empirical model illustrates that different motivational dimensions exert varying effects across performance outcomes. Achievement, recognition, compensation, and working conditions significantly predicted task performance, whereas achievement and responsibility significantly predicted contextual performance. Adaptive performance was significantly predicted by responsibility and employment relationships. These findings further support the multidimensional nature of employee performance and demonstrate that motivational factors do not exert uniform effects across different performance outcomes.

Implications of the Study

This study contributes to motivation-performance research by showing intrinsic and extrinsic motivational factors affect task, contextual, and adaptive performance differently rather than exerting uniform effects. This supports a multidimensional view of employee performance and suggests that achievement and responsibility are more relevant to contextual and adaptive performance, while task performance depends on both intrinsic and extrinsic factors. The findings also have practical value for manufacturing organizations. Rather than relying on a single reward system, firms may use more targeted motivational approaches linked to specific performance goals. Intrinsic motivation can support cooperation and adaptability, while external support can help maintain task efficiency and operational performance.

Recommendations for Implementation

1. Manufacturing firms should adopt differentiated motivation policies rather than applying a single reward system to all performance outcomes.
2. Human resource policies should incorporate intrinsic motivation, supportive employment relationships, and adaptability into performance-management systems.
3. Organizations should periodically review compensation, recognition, and working-condition policies using employee feedback and performance evidence.
4. Supervisor-development policies should emphasize delegation, feedback, interpersonal support, and employees' participation in workplace change.

Recommendations for Future Research

1. Future studies should examine employees from multiple manufacturing firms and regions to enhance the applicability of the findings.
2. Longitudinal research should be conducted to examine how employee motivation and performance change over time.
3. Future research should examine mediating variables such as work engagement, job satisfaction, and organizational commitment.
4. Comparative studies should investigate whether motivational factors exert different effects in manufacturing and service-sector organizations.

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