



THE ROLE OF TRANSACTIONAL LEADERSHIP IN EMPLOYEE PERFORMANCE: THE MEDIATING ROLE PSYCHOLOGICAL EMPOWERMENT

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Abstract

This research focuses on the impact of "Transactional leader's behaviour on job performance of knowledge employees". Taking enterprise knowledge employees as the research object and by introducing the psychological empowerment as the mediating variable, this research explores the impact of transactional leadership style on the job performance of knowledge employees. The first part is the introduction, which introduces the background of the study, research gap, problem statement, research questions, research objectives, and significance of the study, assumptions and delimitations, definition of key words. The second part is the literature review, which reviews the previous researches on the concepts, affecting factors and dimensions of research variables such as transactional leadership style, employee work performance and psychological empowerment. These laid a solid theoretical foundation for this research. The third part is the research design. On the basis of the previous research, the research model of this paper is constructed, there search hypothesis proposed and the research questionnaire designed by referring to the mature scale studied by the previous researchers. The fourth part is empirical research, which takes knowledge employees of state-owned enterprises in Pakistan as the research object. A total of 662 respondents data were obtained by means of questionnaire survey, and the reliability and validity analysis, difference analysis, correlation analysis, main hypothesis test and adjustment effect test were conducted on the collected data using SmartPLS V.3 and SPSS 25.0, partly verifying the theoretical model and research hypothesis. The fifth part is conclusion and prospect. This study draws research conclusions through the empirical research data results. Based on results, this research offers some suggestions to the managers of the state owned enterprise for the actual management of knowledge employees from the aspect of leadership style.

Keywords: Transactional Leadership, Employee Performance, Knowledge Employees, Job Performance, Psychological Empowerment.



1. Introduction

A strong and clear leadership is required to fulfil stakeholder expectations and the present complex environmental issues because leaders may act as a bridge to accomplish company goals and objectives.(Johannessen, 2021). Due to the organization's changing nature and the complexity of the environment, leaders are now confronted with more challenges than ever before. Organizational procedures, regulations, and employee attitudes may all be influenced by leadership to change how an organisation operates. Setting a vision, specific goals, and objectives are also essential.

It is fundamental that leaders be capable of eliciting adjustments in response to environmental pressures. Although some individuals equate management with leadership, the two have quite different characteristics. While leadership is focused on the people inside an organisation, management works with the company's organizational structure(Lin et al., 2020). Numerous researchers have analysed leadership throughout the years, but none have been able to provide a specific and unambiguous definition of it. (Fu et al., 2022). Psychological empowerment is a significant internal motivation since it primarily represents a person's self-worth and sense of self-efficacy. Psychological empowerment is also an integral mediating variable. (Ambad et al., 2021).

We are interested in researching how transactional leadership affect employee performance since some scholars have highlighted the importance of transactional leadership and others have emphasised the importance of transactional leadership.(Jaroliya & Gyanchandani, 2021). Aside from the type of organisation, the techniques leaders adopt according to their own talents and observation, transactional style is more appropriate than transactional style (Baskoro, 2021). According to Bass (1994), transactional leadership has a detrimental impact on an organization's production. When faced with an unforeseen event, leaders must adopt a transactional stance in order to identify important variables and the best approach to use. Some advantages of transactional leadership include increased self-awareness, raising performance expectations, and improving team financial success (Antonopoulou et al., 2021).

The purpose of this study is to address a gap in previous studies by exploring the effects of transactional leadership styles on knowledge employees work performance by suggesting the usage of psychological empowerment. Many studies have pointed out that psychological empowerment plays a mediating role in transactional leadership and employees' work attitudes (Iqbal et al., 2022). In this research by introducing the mediation variable of psychological empowerment, on the one hand, we will explore and verify the influence of psychological empowerment on the job performance of knowledge employees, and on the other hand, it is also worth further testing the mediating role of psychological empowerment in the leadership styles transactional leadership and transactional leadership on job performance of employees.



Knowledge centric firms are considered as the firms that can bring scientific and technical progress. In order to stay successful in a dynamic business environment, firms have to constantly upgrade themselves (Teoh Yi Zhe & Keikhosrokiani, 2021). Successful knowledge-intensive enterprises gain competitive advantage from knowledge workers through bolstering their creative input. Owing to a strong need for minor improvements in products, services, and processes, the critical role of knowledge workers keep pace with rapid changes has become pivotal (Siachou et al., 2021). Knowledge employees, as a new and special group, have strong learning and innovation ability, they are the wealth of the self-development of modern enterprises and become the core resources for the competition and rapid development of enterprises (Sahibzada et al., 2022).

Employee extra role performance are high on the agenda of contemporary knowledge-intensive firms due to intangible, heterogeneous, and perishable nature of the services. How to effectively lead knowledge employees is the key to successful management of knowledge employees, it is also an important condition to improve their job performance (Lin et al., 2020). Among the many factors that influence the performance of knowledge employees, leadership style is a very important factor. Compared with manual workers, the knowledge employees are often engaged in creative work, so their work process often does not have fixed procedures and steps and their work results often appear in the form of certain ideas, creativity, technical inventions, and management innovations, resulting in features of their own, such as autonomy, creativity and a sense of accomplishment (Hosseini et al., 2022). Enterprises should fully understand the characteristics of knowledge employees and strive to improve their working environment and their overall job performance, so that enterprises will have a good competitive advantage (Muliati et al., 2022).

Knowledge-intensive enterprises by their nature have to be more creative and innovative in order to survive in this environment. In order to cope with necessary changes by stimulating creativity and innovation, knowledge-intensive enterprises need to rely on an effective style of leadership (Fu et al., 2022). Knowledge economy have to adapt certain leadership strategies that allow them to achieve necessary outcomes and provide constant organizational changes. Moreover, compared to non-knowledge companies, Knowledge intensive firms need a different approach of management and style of leadership (Leitão et al., 2022). The knowledge workers are more intrinsically motivated than the manual workers. In a context of skills shortage and “war for talent”, it is important to highlight what style of leadership in KIFs that is likely to boost employee performance. In addition, the Pakistani context may provide a rich context for the study of effective leadership (Baskoro, 2021).

This research explores the mechanism of transactional leadership on the job performance of knowledge employees. It’s not only provides empirical evidence for understanding the influence of leadership behaviour on subordinates' job performance, but also enriches relevant research results. This also offers useful enlightenment for enterprises to carry out human resource



management. It provides some basis and suggestions for enterprises to improve the job performance of knowledge employees.

2. Literature Review

Job performance is a very important concept in management. In terms of objects, performance can be divided into organizational performance and employee performance. Organizational performance and employees' job performance are two concepts at different levels, which are different and related to each other. The two have different emphases, one on the organizational level of behaviour and output, and the other on the individual level. At the same time, they are related to each other and they will influence and promote each other. The unreasonable setting of organizational mechanism and structure may also reduce employees' job performance, which will also affect the performance of the whole organization.

Job performance of an individual level refers to the behaviour that employees accomplish by helping others better undertake their work in order to achieve organizational goals and from this perspective, job performance can also be distinguished accordingly (Leitão et al., 2022). Therefore, some scholars proposed a two-dimensional measurement model of job performance which was divided into task performance and contextual performance (Bhardwaj & Kalia, 2021). Task performance refers to the completion of tasks specified in the job description (Van Zyl et al., 2021). Contextual performance, on the other hand, is a kind of interpersonal behaviour related to psychological and social relations that can promote the smooth completion of organizational work (Qasim et al., 2021). Specifically, it can be expressed as helping colleagues enthusiastically, cooperating with colleagues to complete work tasks, and volunteering to undertake work that does not fall within the scope of one's responsibilities. According to the needs of this study, this article shall adopt a two-dimensional model of job performance which includes task performance and contextual performance.

Leadership style, in most cases, refers to the behaviour pattern or behaviour characteristics of the leader in the process of leadership activities. Corporate leadership style is a variety of characteristics of the customary leadership style. When leaders influence others, they will adopt different behaviour patterns to achieve their goals (Asif et al., 2019; Fu et al., 2022). Each leader has a style that is different from other leaders, which is related to the work environment, experience and personality. The theoretical value and practical significance of leadership style research lies in that it can better reflect the actual leadership activities and explain the differences in leadership effectiveness (Lin et al., 2020).

Burns proposed not only the concept of transformational leadership, but also transactional leadership in his book "Leadership". He pointed out that transactional leadership refers to the way in which leaders encourage subordinates to achieve the common goal of both sides by rewarding their contributions to the organization (Baskoro, 2021). Bass has developed transactional leadership theory. He believes that in order to motivate employees to work hard and set clear goals



and directions, leaders should clarify and clarify employees' work content and roles (Kyei-Frimpong et al., 2022). Transactional leadership is a kind of bartering leadership in which the leader and the subordinate achieve their respective interests and goals in accordance with the prior contract. (Chuang et al., 2022).

Transactional leadership consists of two dimensions, three dimensions and four dimensions. Bass believes that transactional leaders set and define goals and motivate followers by promising rewards for required performance. Transactional leadership mainly adopts two methods: "contingency reward" and "exception management". Later, some scholars further developed the behavioural characteristics of transactional leadership and the exception management in transactional leadership was divided into positive exception management and negative exception management. The specific explanation of the three dimensions of transactional leadership is as follows: The power change award includes not only the recognition of the tasks completed by the leader, the promise and fulfilment of the bonus, but also the trust, giving the subordinates more opportunities and room for improvement. In positive exception management, in which leaders observe and look for deviations from organizational rules and standards, and take measures to actively correct them in advance. Negative exception management is a style of leadership that intervenes only after a violation or error has occurred.

The concept of psychological empowerment developed from the theory of authorization, and its original definition was based on the theory of participatory management and employee involvement. Employee involvement theory emphasizes the empowerment, information resources, rewards, and training of junior employees. With the deepening of the research, scholars have found that the effectiveness of empowerment depends not only on how the enterprise should be authorized, but also on how employees perceive the authorization of the enterprise (Asif, 2021; Ilyas et al., 2021).

As a result, the focus of empowerment theory shifted from organization to employee, and the traditional empowerment theory developed into psychological empowerment theory. Psychological empowerment is the synthesis of individual experience, which includes four aspects, namely, work meaning, self-efficacy, work autonomy and work influence (Soleimani et al., 2022). It reflects the tendency of individuals to perceive in work. Currently, the concept of psychological empowerment proposed by Thomas et al. is accepted by most organizational behaviourists and psychologists (Aurangzeb et al., 2021; Gong et al., 2021; Mumtaz et al., 2023).

From the above research analysis, it can be seen that scholars from various countries have a lot of research results on leadership styles, psychological empowerment and job performance. Although a lot of achievements have been made in this field and there are more and more researches on the influence of various leadership styles on job performance, especially on the job performance of knowledge employees, the researches in recent years are mainly focused on transactional leadership style, and few comprehensive and comparative studies on various



leadership behaviors are conducted (Bass & Riggio, 2006; Sun, 2016). At present, the research conclusions on the association between psychological empowerment and job performance are not completely analyzed, especially on the structure of psychological empowerment. Moreover, the research on the relationship between leadership style, psychological empowerment and job performance is relatively lacking (Ölçer & Florescu, 2015). The four variables involved in the study are all constantly changing in the process of work and there are many factors involved in and influencing them.

This study considers from the perspective of knowledge employees, mainly because in modern enterprises, there are more and more knowledge employees who play a decisive role in the interests of enterprises, so we need to better manage knowledge employees. Therefore, through the research, we hope to find ways and means to better manage and lead knowledge employees, so as to lay a foundation for the long-term development of the enterprise. The key of this research is to find out the main factors that affect the job performance of knowledge employees, investigate the internal relationship of four different variables, and on this basis, find the most suitable leadership style for the management of knowledge employees and find the leadership style that can improve their job performance.

3. Research Methodology

The research methodology of the current study is as under:

3.1 Conceptual Framework

The proposed study is quantitative in nature following positivist paradigm of research. The study has explored different dimensions of leadership's styles and its relationship with work related outcomes in the context of knowledge intensive industries. The study has used survey strategy to collect responses from knowledge workers using questionnaires [Scientists, Engineers, architects, contractors involved in knowledge intensive organizations in Islamabad and Wahh Cantt region] using convenience sampling technique.

Based on the induction and analysis of the existing theories and studies, this research proposes a mechanism model of the relationship between leadership style, psychological empowerment and job performance. Leadership style will affect the performance of employees; Psychological empowerment mediates the relationship between leadership style and job performance. In this study, transactional leadership were used as independent variables, knowledge employees' job performance was used as the dependent variable, and employees' psychological empowerment was used as the mediating variable. The research model shown in Figure 1 was constructed.

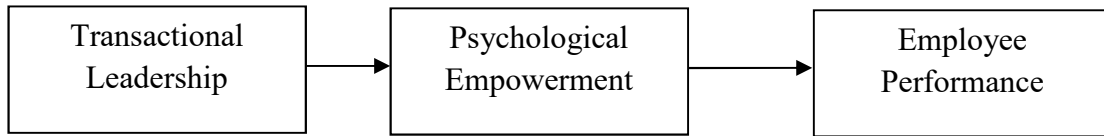


Figure 1: Theoretical Framework

Dependent Variable

Dependent Variables are those variables which are being controlled and explained by the other variables. Work Performance is dependent variable of this study.

Independent Variable

Independent variables are those variables which explain other variables and if they change, they affect the other variables which depend on them. In this study, independent variables is Transactional leadership.

Mediating Variable

Mediating variables are those variables which create bridge or link among the independent and dependent variables. Psychological empowerment in this study is taken as mediating variable.

3.2 Research Hypotheses

H₁: Transactional leadership style is positively related with job performance

The influence of transactional leadership style on the performance of employees can also be analysed from its characteristics and the characteristics of employees. In transactional leadership style, the relationship between the leader and the subordinate is usually based on a series of exchanges and contracts (Shah & Hamid, 2015).

The leader satisfies the needs of the subordinate by using reward power or allocating resources to the subordinate. Transactional leaders put more emphasis on tasks, work standards and outputs, among which the rewards and punishments adopted by enterprises will affect the completion of work tasks and their own behaviors (Kalsoom et al., 2018). Therefore, the style of transactional leadership is dominant, and the working atmosphere tends to have clear rules and orderly order. So we hypothesized that transactional leadership style has a significant impact on the job performance of employees.

H₂: Psychological empowerment mediates the relationship between Transactional leadership style and employee performance

Psychological empowerment can be a very important mediating variable, which can constantly change with the change of the organizational environment, and from another perspective, psychological empowerment is essentially an incentive-oriented psychological mechanism that



can influence the individual behaviors of employees (Dust et al., 2014). Psychological empowerment should be one of the most important variables to reveal the mechanism of transactional leadership.

Psychological empowerment is likely to be one of the important mediating variables between transactional leadership and organizational outcome variables. It is found that the work meaning dimension in psychological empowerment plays a completely mediating role between the charismatic behavior characteristics of transactional leaders and employees' job satisfaction and organizational commitment. For the special group of knowledge employees, from the analysis of their many characteristics, each dimension of psychological empowerment can just meet the psychological needs of knowledge employees. For example, knowledge employees have high creativity and autonomy, and they are more inclined to self-guidance and self-management in work, while the work autonomy dimension of psychological empowerment can make employees have full autonomy in work (Wang et al., 2019). Therefore, the work self-determination should have a significant positive impact on the job performance of knowledge employees. In addition, the work meaning, self-efficacy and impact of psychological empowerment are three dimensions. From the perspective of the characteristics of knowledge employees, the influence on their job performance should also be positively correlated.

H₃: Transactional leadership style is positively correlated with employee psychological empowerment

In the past, scholars of various countries have studied the relationship between leadership style and psychological empowerment, but there are few studies on the relationship between transactional leadership and Psychological empowerment. However, we can try to analyse the relationship between transactional leadership and psychological empowerment based on the concept of several variables. The outstanding feature of transactional leadership is to give subordinates rewards in the form of exchanges (Bian et al., 2019). By negotiating and clarifying the common goals of individuals and organizations, employees can feel the meaning of work for themselves more directly. The "emphasis on fair exchange" performance in the transactional leadership style allows the members of the organization to have higher work enthusiasm and autonomy in a highly empowered context, resulting in higher psychological empowerment. It can be seen that transactional leadership can promote the psychological empowerment of employees (Zhu et al., 2012).

3.3 List of Hypotheses

1. Transactional leadership style is positively related with job performance.
2. Psychological empowerment mediates the relationship between Transactional leadership style and employee performance.
3. Transactional leadership style is positively related with employee psychological empowerment.



4. Psychological empowerment is positively related to job performance.

3.4. Study variable measurements

3.4.1. Leadership style scale

Transactional leadership style includes contingent rewards, positive exception management and negative exception management, with a total of 11 items. The design of the questionnaire will be based in Likert five-level scale, with the "strongly disagree", "disagree", "not sure", "agree", and "strongly agree", corresponding to 1 to 5 points respectively. The higher the score is, the greater degree of perception of the corresponding leadership behaviour.

3.4.2. Psychological empowerment scale

As for the measurement scale of psychological empowerment variables, this paper will adopt the psychological empowerment questionnaire compiled by Spreitzer (Spreitzer, 1995) and revised by Li, C. P. et al (Li-Chaoping, 2006). The whole scale is divided into four dimensions: work meaning, self-efficacy, self-determination and work impact, and there are 12 questions in total. The questionnaire uses Likert's five-point points, "strongly disagree", "disagree", "not sure", "agree", and "strongly agree", corresponding to 1 ~ 5 points, the higher the score, the higher the level of Psychological empowerment is, while the smaller the score is, the lower the level of Psychological empowerment.

3.4.3. Job performance scale

Two dimensions of job performance i.e. task performance and contextual performance scale will be adopted from previous studies, the scale for task performance will adopted from (Koopmans et al., 2013) and (Kiker & Motowidlo, 2020) having four items. The contextual performance scale will be adopted from Van Scott & Motowidlo (1996), which contains 6 questions. This scale has been proved by many scholars to have high reliability and validity, the contents of both the scales are consistent with job related performance of knowledge workers in similar industries, A five-point Likert scoring scale will be used to measure variation in responses.

3.4.4. Study Population and unit of Analysis

Data was collected from knowledge employees of different knowledge state owned intensive organizations in twin cities, Taxila and Wahh Cantt, involved in creative and innovative projects. Data was collected from Scientists, Engineers, architects, contractor in these organizations.

3.4.5. Data Collection Strategy

Data was collected from 662 respondents by means of questionnaire survey, and the reliability and validity analysis, difference analysis, correlation analysis, regression analysis, hypothesis testing was performed using SmartPLS V.3 and SPSS 25.0.

3.4.6. Population Detail and Sample Size



A total of 1000 questionnaires were distributed to the employee in state owned knowledge intensive organizations. Consequently 700 responses were received from which 662 valid responses were subjected for data analysis.

4. Results

4.1 Description of Sample and Investigation Procedures

The data collection section of this study was mainly through questionnaire distribution from target respondents. The sample was comprised knowledge employees working in different organizations. This type of employees was chosen due to their work performance, plays a crucial role in the development of the enterprise, and they are more likely to be influenced by the supervisor's leadership style.

A total of 1000 questionnaires were distributed during the survey, with invalid questionnaires eliminated and 700 valid questionnaires collected. Thus for hypothesis validation, 662 participants' data was entered in SmartPLS V.3 and SPSS 25.0 for formal analysis. Participants were required to fill in demographic variables including gender, age, education, working years, and department size and enterprise nature, as shown in Table 1.

Table 1: Demographics

Project	Style	Number	Percent (%)	Project	Style	Number	Percent (%)
Gender	Male	530	80	Age	<30 years	238	3
	Female	132	20		31-40 years	131	19.8
Marriage	Unmarried	291	44.0		41-50 years	150	22.7
	Married	357	53.9		>50 years	143	21.6
	Other	14	2.1	Metric & below	38	5.7	
Working Time with Leaders	1-5 years	190	28.7	Educational Background	Intermediate	176	26.6
	6-10 years	275	41.5		Graduation	275	41.5
	>10 years	153	23.1		Post-Graduation	161	24.3
					Doctor	12	1.8



Project	Style	Number	Percent (%)	Project	Style	Number	Percent (%)
Enterprise Nature	State owned Organization 1	206	31.2	Working years	<1 year	80	12.1
	State owned Organization 2	148	22.4		1-5 years	201	30.4
	State owned Organization 3	126	19.0		6-10 years	215	32.5
	State owned Organization 4	182	27.4		11-20 years	81	12.2
					>20 years	85	12.8
Total		662		Total		662	

As can be seen from Table 1, among the 662 employees who participated in the survey, 530 were males and 132 were females, indicating that the ratio between males and females was basically not equal, with males are more than females on the whole. In terms of age choice, there are 238 people under the age of 30, 131 people between 31 and 40, 150 people between 41 and 50, and 143 people above 50. In terms of educational level, the number of students Metric & below is 38, accounting for only 5.7%, the number of intermediate students is 176, accounting for 26.6% the number of people with graduate degrees reached 41.5%, the number of people with post graduate degrees reached 24.3 percent, and the number of people with doctoral degrees reached 1.8 percent. In terms of marital status, unmarried people accounted for 44.0%, married people accounted for 53.9%, and other people accounted for 2.1%. In terms of working time, the group with less than 1 year is 80 people, the group with 1-5 years is 201 people, the group with 5-10 years which is the largest is 215 people, the group with 10-20 years is 81 people, and the group with more than 20 years is 85 people. In terms of working time distribution with leaders, 44 people worked for less than 1 year, 190 people worked for 1-5 years, 275 people worked for 5-10 years, and 153 people worked for more than 10 years.



In terms of the nature of the enterprise, there are total 668 employees in state-owned enterprises, 206 employees in State owned Organization 1, 148 employees in State owned Organization 2, 126 employees in State owned Organization 3, 182 employees in State owned Organization 4. On the whole, the distribution of samples is suitable for subsequent data analysis.

4.2 Reliability test of transactional leadership style scale

As can be seen from the results from Table 2, the reliability results of transactional leadership in all dimensions are above 0.8, which shows that both the dimension reliability result and the reliability quality of the questions are pretty good, and so the questionnaire is credible and effective.

Table 2: Reliability Test of Transactional Leadership Scale

Variable	Cronbach's α	Number of items
Contingent reward	0.848	4
Positive exception management	0.878	4
Negative exception management	0.918	3

4.3.1.3. Reliability test of job performance scale

The Cronbach's α of the job performance scale is carried out, and the results are shown in Table 3.

Table 3: Reliability test of Job Performance scale

Variable	Cronbach's α	Number of items
Task performance	0.938	4
Contextual performance	0.951	6

As can be seen from the results, the reliability results of job performance in all dimensions are above 0.9, which indicates that the internal consistency of the job performance scale for knowledge employees is relatively good, and that the data of the job performance of this survey has a high internal consistency and the reliability of the scale is relatively high.



4.3.1.4. Reliability test of psychological empowerment

The Cronbach’s α of the psychological empowerment is carried out, and the results are shown in Table 4.

Table 4: Reliability Test of Psychological Empowerment Scale

Variable	Cronbach’s α	Number of items
Working meaning	0.990	3
Self-efficacy	0.933	3
Autonomy	0.934	3
Working effect	0.947	3

As can be seen from the results, the reliability results of psychological empowerment in all dimensions are above 0.9, this indicates that the internal consistency of the scale is good, and the data of psychological empowerment of employees in this survey has a high internal consistency.

Validity test of transactional leadership scale

Exploratory factor analysis was conducted on the 11 items of the transactional leadership scale. The test value of KMO was 0.857, which was larger than 0.8, indicating a high correlation between the questions. The significance of Sig<0.001 was obtained through the comparison between chi-square value and degree of freedom by Bartlett sphericity test, which indicated that the validity structure of the scale was good and the questionnaire was suitable for factor analysis and subsequent test, as shown in Table 5.

Table 5: KMO and Bartlett Tests of Transactional Leadership Scale

The number of KMO Sampling Appropriateness		0.857
Bartlett test of Spheri City	Approximate Chi-square	4234.492
	Degrees of freedom	55
	Significance	0.000

After passing the KMO and Bartlett tests, the questionnaire questions were subject to principal component analysis, and the specific results are shown in Table 6.



Table 6: Validity Test of Transactional Leadership Scale

Factor	Variable	λ	C	EV	VE
Contingent Reward	CR1	0.770	0.618	4.829	43.904
	CR2	0.817	0.718		
	CR3	0.829	0.715		
	CR4	0.800	0.710		
Positive exception management	PEM1	0.824	0.740	1.829	18.823
	PEM2	0.774	0.724		
	PEM3	0.837	0.740		
	PEM4	0.856	0.768		
Negative exception management	NEM1	0.891	0.846	1.647	14.975
	NEM2	0.914	0.884		
	NEM3	0.895	0.842		

Note: C(correlation) EV(Eigen value) VE(Variance Explained)

The study extracted principal components with eigenvalues greater than 1, and a total of 3 components were extracted. The interpretation rate of the cumulative variance of the three components reached 75.502%, which was higher than the basic standard of 60%, so it can be proved that the extraction effect of the components is relatively good.

Validity test of job performance scale

Through the validity analysis of the job performance scale, the KMO test value was 0.926, and the approximate chi-square value of Bartlett sphericity test was 6511.664, with a significance of 0.000, indicating that the scale has a good structural validity and is suitable for factor analysis, as shown in Table 7.



Table 7: KMO Tests of Job Performance Scale

The number of KMO Sampling Appropriateness		0.926
Bartlett test of Spheri City	Approximate Chi-square	6511.664
	Degrees of freedom	45
	Significance	0.000

Principal Factor Analysis was used to extract factors with eigenvalues greater than 1 from which two factors were extracted. The total variance interpretation rate of the two factors is 82.022%, indicating that the job performance scale has a good convergent validity. The rotated factor load matrix divides the 10 items into two factors, named task performance and contextual performance. The specific results are shown in Table 8.

Table 8: Validity Test of Job Performance Scale

Factor	Variable	λ	C	EV	VE
Task Performance	TP1	0.877	0.833	6.663	63.635
	TP2	0.873	0.859		
	TP3	0.907	0.880		
	TP4	0.871	0.806		
Contextual Performance	CP1	0.866	0.806	1.839	18.387
	CP2	0.882	0.837		
	CP3	0.885	0.855		
	CP4	0.852	0.792		
	CP5	0.890	0.830		
	CP6	0.787	0.705		



Validity test of psychological empowerment scale

Exploratory factor analysis was carried out on 12 items of psychological empowerment. The KMO test value was 0.897, the approximate chi-square value of Bartlett sphericity test was 11017.616, and the significance Sig was 0.000, indicating that the validity structure of the scale was good and suitable for factor analysis. The results are shown in Table 9.

Table 9: KMO Tests of Psychological Empowerment Scales

The number of KMO Sampling Appropriateness		0.897
Bartlett test of Spheri City	Approximate Chi-square	11017.616
	Degrees of freedom	66
	Significance	0.000

Principal Factor Analysis was used to extract common factors with eigenvalues greater than 1. It can be seen from Table 10 that a total of four factors have been extracted, and the total variance interpretation rate of the four factors is 91.499%, indicating that the psychological empowerment scale has a good convergent validity.



Table 10: Validity Tests of Psychological Empowerment Scales

Factor	Variable	λ	C	EV	VE
Meaning	ME1	0.859	0.967		
	ME2	0.895	0.990	7.602	63.346
	ME3	0.893	0.988		
Self -efficacy	SE1	0.848	0.875		
	SE2	0.859	0.903		
	SE3	0.848	0.867	1.188	9.897
Self determination	SD1	0.840	0.898		
	SD2	0.811	0.873	1.176	9.798
	SD3	0.844	0.897		
Impact	IM1	0.861	0.905		
	IM2	0.833	0.891	1.105	8.458
	IMS3	0.873	0.926		

4.5. Difference Tests

One-way analysis of variance (ANOVA) is a method used to test the comparison between the mean Numbers of randomly selected samples and whether the factors have significant influence on the experimental results.

The empirical research method adopted in this research is questionnaire survey, in which the sample of the survey includes employees from different places of state owned enterprises. Although they belong to the same group of knowledge employees, they are diverse in specific personal characteristics, such as educational background and marital status. And that diversity could lead to differences in their specific emotional perceptions. Based on this, one-way analysis of variance can be used to discuss whether employees with different personal attributes have different influences on the research conclusions. Meanwhile, it can also serve as a good reference for subsequent studies on relevant variables. Therefore, one-way analysis of variance for the data of this study can enhance the persuasive power of the conclusions.



4.4.1. Gender

The independent sample T-test is applicable to the case where there are only two samples and there is no relationship between the two samples. Therefore, the independent sample T-test has used to examine the different performance of the data of the two independent samples of male and female in five variables. The results are shown in Table 11.

Table 11: One-way Analysis of Variance- Gender

	Gender	Mean Value	Standard Deviation	T	P
Transactional Leadership	Male	3.0965	0.82923	1.380	0.108
	Female	3.0135	0.68086		
Psychological Empowerment	Male	3.6544	0.98255	-1.502	0.133
	Female	3.7656	0.89281		
Task performance	Male	3.7656	1.04306	-0.481	0.360
	Female	2.4637	0.92067		
Contextual Performance	Male	2.5920	0.98806	0.583	0.559
	Female	2.5473	0.96189		

The independent sample T-test was conducted for transactional leadership, psychological empowerment, task performance and contextual performance based on gender. As can be seen from the analysis results, there was no significant difference between male and female in other dimensions ($p > 0.05$). This result is also in line with the actual situation.

4.5.2. Age

One-way analysis of variance was conducted for transactional leadership, psychological empowerment, task performance and contextual performance by age group, and the results are shown in Table 12.



Table 12: One-way Analysis of Variance-Age

	Age	Mean Value	Standard Deviation	F	P	LSD
Transactional Leadership	<20 years	2.8871	0.75673	2.283	0.059	
	20-30 years	3.0715	0.85767			
	31- 40 years	3.0638	0.75865			
	41-50 years	3.0628	0.76564			
	>50 years	3.1787	0.68809			
Psychological Empowerment	<20 years	3.4092	1.00983	6.376	0.000	Over 50years, 41-50 years 31-40 years> 21-30 years, under 20
	20 – 30years	3.5210	1.05477			
	31 – 40years	3.7678	0.89210			
	41-50 years	3.8433	0.87576			
	>50 years	3.8858	0.83308			
Task Performance	< 20 years	2.2140	0.90632	2.060	0.085	
	20-30 years	2.439	0.96759			
	31-40 years	2.4447	0.98756			
	41-50years	2.5267	1.01546			
	> 50 years	2.5332	1.03556			
Contextual Performance	<20 years	2.4279	0.90666	2.151	0.073	
	20-30years	2.5013	1.00253			
	31-40 years	2.4987	0.91579			
	41-50 years	2.6578	0.99697			
	> 50 years	2.7261	1.01964			



As can be seen from the analysis results ($F=6.376$, $p<0.001$), there was a significant difference among different age groups in the total score of psychological empowerment. Specifically, the scores of the age above 50, the age from 41 to 50 and the age from 31 to 40 were significantly higher than those of the age from 21 to 30 and the age below 20. However, there was no significant difference in other dimensions, and $p>0.05$. This indicates that the older you get, the more importance you attach to the meaning, autonomy and influence of work, and the stronger your sense of self-efficacy is.

Marriage

The marriage group was used to test One-way analysis of variance of transactional leadership, psychological empowerment, task performance and contextual performance, and the results were shown in Table 13.

Table 13: One way Analysis of Variance – Marriage

	Marriage	Mean Value	Standard deviation	F	P	LSD
Transactional Leadership	Unmarried	3.0196	0.75446	4.480	0.012	Other< Married, unmarried
	Married	3.1137	0.77798			
	Others	2.5437	0.59812			
Psychological Empowerment	Unmarried	3.6681	0.95759	17.627	0.000	Married> Unmarried > other
	Married	3.8859	0.89939			
	Others	2.8095	0.72459			
Task Performance	Unmarried	2.4115	0.92505	2.711	0.067	
	Married	2.4895	1.04988			
	Others	1.8929	0.49725			
Contextual performance	Unmarried	2.5630	0.99185	0.258	0.772	
	Married	2.5868	0.97835			
	Others	2.4048	0.51355			



As can be seen from the analysis results, the total score of transactional leadership, there were significant differences between groups with different marital status ($F=4.480$, $p=0.012$). Specifically, the mean score of other groups was significantly lower than that of married and unmarried groups. There is a significant difference in the total score of psychological empowerment among groups with different marital status $F = 17.627$, $p < 0.001$, specifically the score of married group is significantly higher than that of unmarried and other two groups. Other variables showed no significant difference in the marriage group ($p > 0.05$). This indicates that marital status has an impact on the cognition of leadership style and psychological empowerment, but has no significant impact on job performance.

Education

One-way analysis of variance was carried out for transactional leadership, psychological empowerment, task performance and contextual performance by grouping academic qualifications, and the results are shown in Table 14.

Table 14: One-way Analysis of Variance – Education

	Education	Mean Value	Standard deviation	F	P	LSD
Transactional Leadership	Metric & below	3.2614	0.77827	1.988	0.095	
	Intermediate	2.9486	0.84046			
	Graduation	3.0739	0.67242			
	Post-Graduation	3.1237	0.82382			
	Doctor	2.9841	0.67051			
Psychological Empowerment	Metric & below	3.5449	3.99814	2.425	0.047	Doctor/ Post-Graduation > Graduation > Intermediate > Metric & below
	Intermediate	3.5603	1.00224			
	Graduation	3.7998	0.94566			
	Post-Graduation	3.7721	0.87413			
	Doctor	3.9722	0.71070			



Task Performance	Metric & below	2.2949	1.07433		
	Intermediate	2.2956	0.93708		
	Graduation	2.5449	1.01891	1.972	0.097
	Post-Graduation	2.4818	0.97592		
	Doctor	2.4286	0.96223		
Contextual Performance	Metric & below	2.6325	0.79947		
	Graduation	2.4144	0.91887		
	Graduation	2.6289	0.96997	1.692	0.150
	Post-Graduation	2.6475	1.07642		
	Doctor	2.5476	0.93116		

As can be seen from the analysis results, the total score of psychological empowerment, there were significant differences between groups with different degrees ($F=2.425$, $p=0.047$) specifically, the mean score of the doctoral group was significant in Post-graduate, graduate, intermediate and metric & below groups. The other variables showed no significant difference in the educational background group ($p>0.05$).

4.5.5. Working years

One-way analysis of variance was conducted for transactional leadership, psychological empowerment, task performance and contextual performance based on working time grouping, and the results are shown in Table 15.

Table 15: One-way Analysis of Variance – Education

	Working Years	Mean Value	Standard deviation	F	P	LSD
	<1 year	2.9430	0.84047			



Transactional Leadership	1-5 years	2.9085	0.78285	4.097	0.003	More than 20 years 10-20 years 5 -10 years > 1-5 years
	6-10 years	3.1837	0.72952			
	11-20 years	3.1287	0.71339			
	> 20 years	3.1301	0.76300			
Psychological Empowerment	<1 year	3.5000	1.10771	5.773	0.000	More than 20 years 10-20 years 5 -10 years > 1-5 years
	1-5 years	3.5227	1.00117			
	6-10 years	3.7341	0.89979			
	11-20 years	3.9491	0.84734			
	> 20 years	3.9275	0.75484			
Task Performance	<1 year	2.4937	1.04389	0.886	0.472	
	1-5 years	2.3429	0.92740			
	6-10 years	2.5232	1.00172			
	11-20 years	2.4211	1.02901			
	> 20 years	2.4484	1.01062			
Contextual Performance	<1 year	2.5844	0.99029	1.775	0.132	
	1-5 years	2.4206	2.91412			
	6-10 years	2.6228	0.98323			
	11-20 years	2.6439	1.04271			
	> 20 years	2.6920	0.98646			

As can be seen from the analysis results, the total score of transactional leadership, there was a significant difference between groups with different working years, $F=4.097$, $p=0.003$. In particular, the scores of the three groups of more than 20 years, 10-20 years and 5-10 years were



significantly higher than those of the groups of 1-5 years. With $F=5.773$ and $p < 0.001$ in the total score of Psychological empowerment, there were significant differences among the groups with different working years. Specifically, the group scores of those with more than 20 years of working experience and those with 10-20 years were significantly higher than those with 5-10 years and 1-5 years of working experience. There was no significant difference in work performance in the working years group ($p>0.05$). It can be seen that the longer the working years, the greater the knowledge employees' perception of leadership style and the higher their psychological empowerment. The longer the working years, the more the employee accepts the leadership style of the leader. The longer the working time is, generally speaking, the more value employees attach to their own value in the enterprise, and thus the more importance they attach to the significance of their work and the influence they have on the enterprise, and the more obvious their overall perception of psychological empowerment is.

Working time with leader

According to the working time with the leader, one-way analysis of variance was conducted for transactional leadership, psychological empowerment, task performance and contextual performance. The results are shown in Table 16.

Table 16: *One-way Analysis of Variance - Working time with leader*

	Working time with Leaders	Mean Value	Standard deviation	F	P
Transactional Leadership	<1 year	3.2373	0.77710	1.888	0.130
	1-5 years	3.0206	0.84527		
	6-10 years	3.0128	0.69238		
	> 10 years	3.1374	0.79168		
Psychological Empowerment	<1 year	3.7535	0.39018	5.773	0.000
	1-5 years	3.6775	0.99061		
	6-10 years	3.6742	0.95101		
	> 10 years	3.7689	0.88759		



Task Performance	<1 year	2.6094	1.04029	0.886	0.472
	1-5 years	2.4216	1.08845		
	6-10 years	2.4209	0.92135		
	> 10 years	2.4545	0.97705		
Contextual Performance	<1 year	2.8646	0.95009	2.118	0.097
	1-5 years	2.6243	0.96192		
	6-10 years	2.5042	0.99801		
	> 10 years	2.5411	0.95092		

As can be seen from the analysis results, there is no significant difference in the working time with leaders, with $p > 0.05$. In other words, the length of time working with the leader did not affect the perception of leadership style, psychological empowerment and job performance.

Enterprise nature

The one-way variance test of transactional leadership, psychological empowerment, task performance and contextual performance was conducted according to the nature of the enterprise. The results are shown in Table 17.

Table 17: One-way Analysis of Variance – Enterprise Nature

	Enterprise Nature	Mean Value	Standard deviation	F	P	LSD
Transactional Leadership	State owned Organization 3	3.2754	0.75617	7.961	0.000	State owned Organization 3 >
	State owned Organization 1	3.1688	0.78223			State owned Organization 1 >
	State owned Organization 4	3.1688	0.78223			State owned Organization 4 >



	State owned Organization 2	2.8338	0.72089			State owned Organization 2
Psychological Empowerment	State owned Organization 3	3.6380	0.99013			State owned Organization 1>
	State owned Organization 1	3.8452	0.89516	3.381	0.005	State owned Organization 4
	State owned Organization 4	3.9059	0.76309			> State owned Organization 3>
	State owned Organization 2	3.6492	0.93794			State owned Organization 2
Task Performance	State owned Organization 3	2.4746	1.0089			
	State owned Organization 1	2.5659	1.40180	1.701	0.132	
	State owned Organization 2	2.5366	0.97259			
	State owned Organization 4	2.2655	0.94825			
Contextual Performance	State owned Organization 3	2.4701	0.92889			
	State owned Organization 1	2.7072	1.03115	1.089	0.365	
	State owned Organization 4	2.5891	1.03290			
	State owned Organization 2	2.5956	0.97890			



As can be seen from the analysis results, the total score of transactional leadership, there was a significant difference between groups of different types of enterprises ($F=7.961, p<0.001$). Specifically, the scores of groups of Atomic energy Commission, State owned Organization 1 and State owned Organization 4 were significantly higher than those of State owned Organization 2. In terms of the total score of psychological empowerment, there were significant differences among different groups of enterprise types ($F=3.381, p=0.005$). Specifically, the scores of State owned Organization 3, State owned Organization 4 and State owned Organization 1 were significantly higher than those of State owned Organization 2. There was no significant difference in the group of enterprise types in job performance ($p>0.05$).

The results of the comprehensive difference analysis show that there was no significant difference between male and female in any dimensions ($p>0.05$).

4.6. Correlation Analysis

The results of correlation analysis of variables in this study are shown in Table 18.

Table 18: Correlation Analysis of Variables

	TL	PE	TP	CP	JP
TL	1				
PE	.456**	1			
TP	.397**	.527**	1		
CP	.369**	.550**	.533**	1	
JP	.438**	.615**	.879**	.872**	1

** .01 (double tail), the correlation is significant

Where,

TL : Transactional Leadership PE : Psychological Empowerment
 JP : Job Performance TP : Task Performance
 CP : Contextual Performance



It can be seen from the analysis results that transactional leadership is positively correlated with job performance. $r=0.438$, the correlation coefficient between psychological empowerment and job performance was 0.615. There is a significant correlation between the variables, so subsequent regression tests can be carried out on the research variables.

Analysis of Regression

Based on relevant theoretical research basis, research hypothesis and established research model, this section demonstrates the influence of leadership style, psychological empowerment and job performance of knowledge, and conducts multiple regression analysis and single regression analysis. The analysis results are shown in Table 19.

Table 19: Result Regression Analysis

Hypothesis	Path	B	Standard Deviation	T Statistics	P Values
H_1	TL-> JP	0.186	0.026	7.075	0.000
F=142.663($p<0.001$) $R^2=0.33$, Adj. $R^2=0.327$					
H_2	TL-> PE -> JP	0.126	0.019	6.562	0.000
F=478.243($p<0.001$) $R^2=0.588$, Adj. $R^2=0.586$					
H_3	TL -> PE	0.236	0.034	6.902	0.000
F=313.125 ($p<0.001$) $R^2=0.127$, Adj. $R^2=0.125$					
H_4	PE -> JP	0.535	0.026	20.97	0.000
F=472.23 ($p<0.001$) $R^2=0.25$, Adj. $R^2=0.256$					

*Note: TL: Transactional Leadership

PE : Psychological Empowerment

JP : Job Performance

It can be seen that in terms of in terms of H1. The regression analysis results of transactional leadership on job performance showed that the predictive coefficients of transactional leadership



on job performance were $\beta = 0.186$, $p < 0.001$, which is statistically significant and H1 was verified. So the H1 is valid.

In term of H3, The analysis results of transactional leadership on psychological empowerment show that the predictive coefficients of transactional leaders on psychological empowerment were $\beta = 0.236$, $F = 313.125$ ($p < 0.001$) and the results are statistically significant. It shows that the test is valid and H3 has been verified. So H3 is valid.

In term of H4, The analysis results of psychological empowerment on job performance show that the predictive coefficients of psychological empowerment on job performance were $\beta = 0.535$, $F = 472.23$ ($p < 0.001$) $R^2 = 0.25$, $Adj.R^2 = 0.256$ and the results are statistically significant. It shows that the test is valid and H4 has been verified. So H4 is valid.

Mediation Effect Test

On the basis of the above studies, this section has tested the mediation effect in the research model. The research mainly uses structural equation modelling software such as SmartPLS V.3 to set model relations in accordance with the established model in advance and substitute existing data into the model for reverse matching. If the data in the established model can maintain a good model fitting result, it can be proved that the result obtained by exploratory factor analysis is stable. Usually, the judgment criteria are divided into two sets. The first is to judge by the standardized load value of the problem and the dimension. If the loading values of every item in its construct and its dimension is greater than 0.5, it means that the construct is closely related to the dimension. The second is to judge the overall fitting of the model. If the fitting result is good, it means that the whole model matches the data.

SmartPLS V.3 software was used to verify factor analysis to ensure the stability and validity of the questionnaire. When SmartPLS V.3 software performs SEM modelling and analysis, the evaluation indicators of the model include SRMR, d_{ULS} , d_G , Chi-Square, NFI and other fitting indicators. In this paper, the above indicators are mainly used for model discrimination, and the specific criteria are shown in Table 21. The mediation results reported in Table 20 indicates a significant mediating relationship of psychological empowerment demonstrated a significant indirect effect between transactional leadership and employee's job performance (H_2) as the corresponding $p < 0.001$ and $\beta = 0.126$ also suggesting a partial mediating effect. It can also be shown that the mediating effect is stronger for transactional leadership. Taken together a combined the indirect effect of psychological empowerment significantly improved the overall model predictive power (from $R^2 = 0.33$ to $R^2 = 0.588$) suggesting that not only strong leadership influences employees job performance but also leaders should work on improving employees psychological empowerment to get optimal job performance outcomes.



Table 20: Mediation Results

Hypothesis	Path	B	Standard Deviation	T Statistics	P Values
H ₂	TL-> PE -> JP	0.126	0.019	6.562	0.000

Table 21: Model Index Judgment Standard

	Saturated Model	Estimated Model
SRMR	0.086	0.086
d_ ULS	1.552	1.552
d_ G	0.364	0.364
Chi-Square	1643.871	1643.871
NFI	0.713	0.713

Hypothesis Test Results

SmartPLS V.3 software was used to test the direct and indirect path relationships between variables in the above hypothesis, in addition difference test was conducted by using SPSS 25.0 software to support the objective of the study. The test results are shown in Table 22.



Table 22: Hypothesis Test Results

Research Hypothesis	Decision
H1: Transactional leadership style is positively related to job performance.	Accepted
H2: Psychological empowerment mediates the relationship between Transactional leadership style and employee performance.	Accepted
H3: Transactional leadership style is positively related to employee psychological empowerment.	Accepted
H4: Psychological empowerment is positively related to job performance.	Accepted

Research Conclusion

From the analysis results of leadership style on psychological empowerment, the regression coefficients of transactional leadership is significant, indicating that transactional leadership have a significant positive predictive effect on psychological empowerment. The results of this research has shown that psychological empowerment is positively related with job performance. Which indicates that psychological empowerment has a positive impact on job performance. This result also supports some previous research conclusions.

According to the results of regression analysis, each dimension of psychological empowerment is an important predictor of the performance of knowledge employees. Employee psychological empowerment has played an intermediary role between transactional leadership style and job performance of knowledge employees. For example, in the regression model of transactional leadership style and task performance, when psychological empowerment mediation variables are added, the significance is greatly improved, indicating that psychological empowerment has played a role of complete mediation at this time. After adding psychological empowerment mediation variable, the regression coefficient increases and the significance increases. At this time, psychological empowerment has played an intermediary role. This research has taken the influence of leadership style on job performance as the main line, and has introduced psychological empowerment, which has helped for to broaden our perspective to study the relationship between the two.



According to the results of single regression and multiple tests, it has found that when conducting a single regression on the influence of leadership style on job performance, both leadership styles have a positive impact on job performance. The organization is in a changeable and complex environment. It has seen that transactional leadership style has helped enterprises or employees improve their work performance.

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