

The Effects Of Transformational Leadership On Leaders' Behavior Performance In A Chinese University Of Physical Education

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ABSTRACT

Transformational leadership has received considerable attention in management research due to its unique style and high efficiency in the development of the times. In this field of management, the impact of transformational leadership on the performance of leaders' own behavior is an important research branch. Recent studies have shown that transformational leadership can have a multifaceted impact on the performance of leaders' behavior, mainly concentrated in Western countries, enterprise management, and industrial management. However, the study of transformational leadership in the leadership behavior performance of higher education institutions is still a blank. In view of this background, this paper takes the leaders of public higher schools in China as the research object and adopts a quota sampling method (N = 399 leaders) to conduct a survey of the 399 leaders of sports majors in public higher schools in China. A total of 399 valid questionnaires were collected, and the analysis was conducted through structural equation modeling. The research results show that the performance of leaders' behavior is positively influenced by transformational leadership.

Keywords: transformational leadership; behavior performance; structural equation modeling; Chinese university of physical education

1.Introduction

Currently, many factors affect in the Organizational performance of university, such as leadership, leaders intention, Cultural atmosphere, Quality of life at work, Organizational Effectiveness, organizational structure, leadership effectiveness and so on, Transformational leadership and planning behavior play an critical role in organizational performance(Samad, 2012). Therefore, the university organization needs to continuously develop and update its structure and improve the performance level of leaders, so that the university can play its function well, realize social services and promote the sustainable and effective development of human society(Danişman et al., 2015). Hence, It is necessary to analyze the causal relationship between the transformation leadership theory and The planned behavior theory.

In 1970, the Carnegie Foundation of the United States proposed to classify the organizational performance in universities(Edmondson, 2003). In recent years, the research mainly focused on the relationship in university performance, the relationship between Perception of pressure and university organizational performance, information technology platform and organizational performance, knowledge sharing and organizational performance(Wei et al., 2023). Recent research on this topic mainly includes in the field of information technology, sales service and management, social service media(Liu et al., 2023).

Chinese universities are divided into public institutions and private institutions according to their educational nature(Marginson, 2007). Public institutions are directly affected by government policies and regulations, owned by the government, owned and funded by the central, provincial or local governments, and receive financial support from the government budget, while private institutions are owned and funded by individuals,

companies, organizations and other non-governmental entities (Meyer, 2003). Financial support comes mainly from tuition fees, donations and other private sources. China's public colleges and universities are larger than private institutions, have student enrollment rates, and offer students a wide range of disciplines and majors. Public colleges offer comprehensive academic programs and disciplines covering engineering, arts, medicine, and sciences, while private colleges focus on specific fields and focus on market needs and industry developments. Public institutions give priority to scientific research, innovation and knowledge production, while private institutions are entrepreneurial-oriented and give priority to the development of practical skills, practical abilities and employment services to enhance the employment rate of students (Niu et al., 2010). Public institutions generally have lower tuition fees, which helps to achieve educational equity and provide access to courses for students from low-income backgrounds. Public universities generally have a long history and profound academic tradition, and their development plans and initiatives are highly consistent with national priorities and development plans, which contribute to the realization of scientific and technological progress, cultural inheritance, and economic and social development goals (Lou & Wang, 2008). Private institutions prioritize making a profit and building their own brand and reputation. To sum up, research on public colleges and universities is more valuable to economic and social development.

The transformational leadership theory, first developed by James V. Downton in the 1970s and later further developed by James McGregor Burns, is characterized by creating and articulating an organizational vision, generating a compelling sense of purpose, and promoting organizational effectiveness (Bass & Riggio, 2006). Its research focuses on the concept and definition of leadership, leadership behavior and practice (Dedaj, 2017), leadership development and training, the influence of followers and organizations (Deschamps et al., 2016), leadership and organizational performance (Bass & Avolio, 1994), and leadership research in specific fields to understand the characteristics of this leadership style, its role in social practice and its influence mechanism (Zhuravleva & Poliak, 2022).

2. Literature Review and Concept of transformational leadership

In terms of transformational leadership, I will review three aspects: the definition of transformational leadership concept, the development of leadership theory, The Components of transformational leadership

2.1 The definition of transformational leadership concept

James V. Downton is the first person to propose transformational leadership in 1973, who first proposed it in his book *Rebel Leadership*. In 1978, transformational Leadership on the basis of James V. Downton and conceptualized it for the first time in his book *Leadership*. His understanding of transformational leadership emphasizes that leaders need to have a clear vision and personal charm to encourage team members to follow them, and at the same time change team members' expectations and opinions through communication, thus being invited to a higher level of moral motivation. At the same time, he also describes that transformational leadership can make followers feel that they are elevating their status in Maslow's hierarchy. At the same time can be a person who feels beyond their own use (Bass & Riggio, 2006). He believes that transformational leadership is completely different from transactional leadership. Transformational leadership is based on personal characteristics, emotions and abilities, and changes through personal moral performance, noble and clear vision setting, and challenging goal setting. Bernard M. Bass (1990) extended Burns' core thought of leadership, saying that transformational leaders must win the trust, respect and admiration of their followers to achieve the desired leadership performance, and create a mission and self-identity beyond self-interest for their followers.

Bass (1985), based on the psychological mechanism, explained how to measure transformational leadership. And how transformational leadership affects follower motivation and performance. To measure the level of change of a leader, the first indicator to be observed is his influence on his subordinates, which can be seen from their admiration, respect, trust and loyalty to the leader. The leader makes his followers feel supported and encouraged through idealized influence, inspirational motivation, intellectual stimulation and personalized consideration.

In 1985, transformational leadership was clearly developed and defined, and presented its own typical characteristics, idealized influence, inspiring motivation, and productive commitment (Warner, 2009). Bass conceptualized the concept of transformational Leadership in his book *Leadership and Performance Beyond Expectation*. He believed that transformational leadership is "leadership that motivates and satisfies the tasks.

Table 1 The Definition of transformational leadership

Authors	Definitions
Burns, 1978	By improving personal morality and ability, leaders seek and stimulate the potential motivation of subordinates, urge subordinates to devote themselves to their work, encourage and promote subordinates through higher-level values, and promote reform.
Bernard Bass,1985	Leaders formulate a clear vision for organizational development, explain the significance of work tasks to subordinates, motivate subordinates' intrinsic needs and attach importance to collective interests, and produce work results that exceed expectations.
Yukl, 1989	Leaders strengthen their sense of mission by influencing the attitudes and behaviors of their members, and empower their
Sergiovanni,1990	Transformational leadership behavior is moral. Leaders motivate their subordinates by emphasizing high-level internal needsImprove the potential of subordinates to improve their own requirements, so as to complete the work with high quality.
Leithwood,1992	By articulating the organizational vision, leaders encourage subordinates' enthusiasm and commitment to work, and make subordinates full of hope for the future.And through practical actions to achieve organizational goals.
Waddell,1996	Leaders strive to create a mutually learning, growth, respect, friendly work environment, enhance the self-worth of subordinates, and ultimately achieve organizational goals
Pillai et al,1999	By stimulating the internal needs of subordinates, leaders enable subordinates to build organizational interests on their own interests and establish,A work environment of mutual trust, which encourages subordinates to perform better than expected
Robbins,2001	Leaders make subordinates willing to contribute to the organization through intrinsic motivation and care, and through their own personal characteristics,Motivate subordinates to make efforts and sacrifices for the good of the organization in order to achieve organizational goals
Waldman et al,2001	The leader describes the organizational vision and relationship to the subordinates High performance expectations, and establish a friendly interpersonal relationship with subordinates, so that subordinates enhance respect and respect for the leader.Work with confidence and demonstrate a determination to work hard and a sense of mission to achieve organizational goals
Ackoff,2007	By describing the vision of the organization to subordinates, transformational leaders make subordinates feel that they can achieve the organization through their own effortsVision, willingness to sacrifice personal interests for the benefit of the organization, by creating an organizational atmosphere to make subordinates feel happy at work.And generate a sense of self-realization, and ultimately promote the members of the organization to achieve organizational goals
Li Chaoping, Shi Kan,2005	By describing the organizational vision to subordinates, transformational leaders can awaken the intrinsic motivation of subordinates, motivate employees to elevate their needs to the level of self-realization, and then go beyond the "ordinary self" to achieve "more self", strive to improve work commitment, and finally achieve organizational goals.

Source: the study from fubo(2017)

2.2 The development of leadership theory

The development of leadership theory has been mentioned as early as the beginning of the 20th century, but no systematic demonstration has been presented. The theory is also based on the explanation of a certain phenomenon in a specific situation of The Times.The role of theory is to systematically explain some of the emergence and guide the practice of colleges and universities. To understand the application of the theory, we should fully understand the historical context of the development of the theory and understand its core value. In this paper, the leadership theory is mainly sorted out from the perspective of time, showing the initiator, origin, core value and application of the leadership theory. This study will analyze and evaluate various leadership theories, There are many theories, such as great man theory and trait theory, to explain the transformative leadership theory.(Gentsoudi, 2022).

The Great Man theory was put forward by Thomas Carlyle in 1840, and he compared various heroes in his book on Heroes theory, and promoted it through various speeches(Jalilvand & Samiei, 2012) According to the Great Man theory, Quality is inherited, so the qualities and characteristics they have are born with, and they do not need to be perfected by participating in social work, but mainly through their influence on the development of history and society whether they are alive or after death, so as to promote the development of society(Spies et al., 2018).

The trait theory of leadership was developed from the great man theory in the 19th century. At that time, some theorists believed that the difference between leaders and non-leaders was the difference in personality traits, and that some people were born with personality traits, physical factors, intellectual factors, and psychological factors that might make a person a leader. The literature review (1984) on leadership, Stogdill said that leadership is a positive identity trait and the expression of a comprehensive trait (Stogdill, 1948). Kirkpatrick and Locke proposed a new approach to trait theory, which argued that the key to leadership is not trait, but merely a precondition (Kirkpatrick & Locke, 1991). Judge et al. combined leadership traits with leadership cognition, behavior and influence and other factors to explain leadership performance (Judge et al., 2002). Ultimately, both the theory of scenic spots and the new qualitative approach emphasize the central position of the leader (Herman & Chiu, 2014).

In the 1960s, Fred Fielder put forward contingency theory and believed that the leadership style influence on the effectiveness of leadership and realistic situation (Mohamad et al., 2009). In the process of organizing team members to carry out activities, the leader's style showed two categories: relationship-driven and task-driven. House's path goal theory emphasizes that situational adjustment factors are the potential trajectory of leadership (House, 1971). Hersey and Blanchard also put forward the theory of practitioner-oriented situational rights. Leaders need to adjust their leadership style according to the maturity level of their practitioners. If the maturity level of the practitioners is low, the leaders need to participate in specific activities and plan, guide and supervise. Leaders can delegate tasks and practices (Hersey & Blanchard, 1969). Leadership effectiveness depends on the degree to which leadership style is integrated with context and follower attributes.

2.3 The Components of transformational leadership

According to Bass, B. M., & Riggio, R. E. (2006), the composition of transformational leadership involves two parts: conceptualization and measurement. The conceptualization level indicates that leadership is charismatic, followers actively model their moral and behavioral ways of doing things, and leaders encourage followers to innovate and challenge. Empower them and make him feel responsible. In the process of the development of individual needs, leaders give irregular guidance, help to followers, and adopt the factor leadership assessment scale can realize the test of leadership. The force composition of transformational leadership mainly includes 4 aspects, including idealized influence, inspirational motivation, intellectual stimulation, individualized consideration (Bass & Riggio, 2006) idealized influence (II). The idealized influence of transformational leadership mainly refers to the process who motivative and encourage followers to pursue a common organizational vision and goal by following the example of his own actions and values. Leaders must first have noble moral values and exemplary moral behavior. They motivate their followers with honesty, trustworthiness and integrity, and show positive moral example. The second is the guidance of vision and goals. By clarifying and stimulating followers' identification and pursuit of organizational vision and goals, followers take active actions under the common vision and strive to achieve the goals of the organization. By encouraging and motivating followers, the transformational leadership enables followers to build up their ability to achieve higher goals, and encourages them to develop their potential, which cannot achieve the improvement and development of personal abilities. Finally, establish a positive working atmosphere. Transformational leaders create a positive working atmosphere. When employees encounter difficulties and risks, they share risks with them, make them feel a sense of belonging and identity, and increase the cohesion and satisfaction of the team (Bass &

Riggio, 2006; Stewart, 2006)

Inspirational Motivation (IM). Leaders of transformational leadership have strong ideals and beliefs, which demonstrate confidence and charisma while explaining personal ideals and beliefs and the long-term goals of the organization to employees, entrusting them with challenging work and technical learning, and inspiring their inner driving force to complete the work with all their strength. It is manifested in setting challenging and stimulating goals, stimulating the motivation and efforts of followers, making them actively engaged in work and pursuing success and excellence. Convey passion and motivation, express your love and commitment to your work and organization in a passionate and inspiring way, and inspire your followers' passion through positive words and actions. Convey an exciting and engaging and inspiring vision that leads followers beyond their current state and inspires their expectations and aspirations for the future. Transformational leaders encourage their followers to be innovative and drive change and development in the organization. encourage followers to try new ideas and methods, and promote the organization's ability to innovate.

Intellectual Stimulation (IS). Transformational leadership stimulates the creative or innovative ability of followers by envisioning the problem, setting the problem framework, and encouraging the adoption ways to solve the problem. In the process, the leader encourages the creativity of others, without openly criticizing and correcting their mistakes. The specific performance is to stimulate followers to show creative thinking, challenge conventional thinking concepts, and put forward new plans and ideas to promote followers to expand the perspective of thinking. Encourage the individual learning and development of followers and provide them with training and development opportunities in order to continuously improve their own knowledge and skills. Help followers challenge and support their autonomy, encourage them to find new ways to solve problems at work, and overcome difficulties in the development of personal abilities. Foster an open and supportive work environment that fosters knowledge sharing and collaboration (Bass & Riggio, 2006; Davies et al., 2001).

Individualized Consideration(IC). The role of transformational leaders extends to coaching and mentoring their followers in order to facilitate personal development and foster growth. Followers and colleagues are inspired to have a high potential, and pay attention to and insist on encouraging interaction with followers. This is demonstrated by showing care and attention to each follower, understanding their individual needs, interests, and goals, and establishing individualized care and assistance for them. Provide support and guidance to encourage followers to develop their personal potential and help them achieve their personal and professional goals. Transformational leaders have a full understanding of the abilities and interests of their followers, and assign tasks and responsibilities according to their personal characteristics, so that they feel valued and feel the use of their talents. Give followers enough respect, give them decision-making power and decision-making power, show trust to followers, and give followers autonomy and autonomy.

To sum up, clarifying the components of transformational leadership theory is of great value to the research of achieving good organizational performance. It can stimulate the enthusiasm and enthusiasm of the members of the organization, encourage the members to think about new ideas, challenge the traditional concepts to promote the innovation of the organization, establish positive interpersonal relations and team cooperation, establish mutual trust, and provide guidance and methods for the future development of leaders.

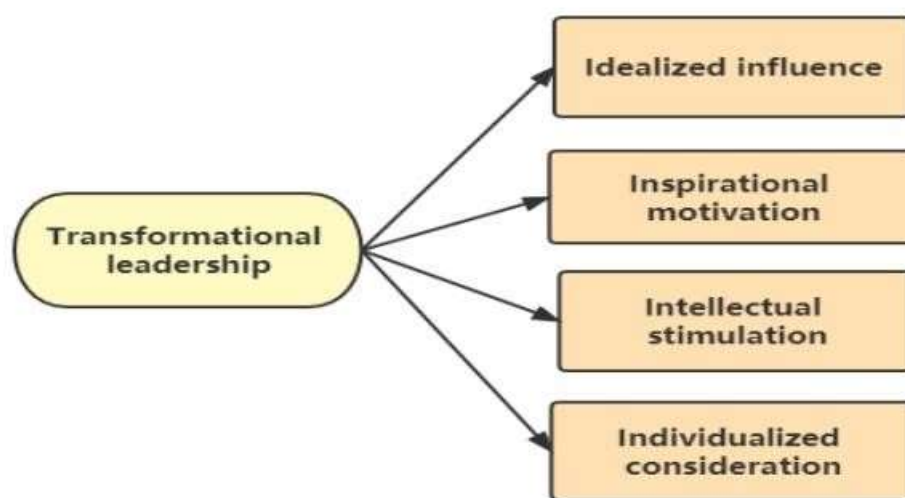


Figure 1 . A model of transformational leadership elements

3. Research method

Quantitative method is used as the data acquisition method in this paper. The tools used include questionnaires that pass reliability and validity tests. Quantitative research applies to the topic of this article, which is to analyze the development status and correlation between transformational leadership and planned behavior theory in a Chinese universities of physical education through research questions. Construction of causal relationship model of transformational leadership model and the planned behavior theory in a Chinese university. The nature of physical education depends on many things. The results of this study can be widely applied to physical education in Chinese universities.

3.1 Population

The survey population is selected from 399 physical education disciplines in public institutions of higher learning registered by the Ministry of Higher Education of China. According to the general principle of the number of leadership posts set by the Chinese Ministry of Education, the leadership team of the teaching unit consists of at least four people: one president, one secretary and two vice presidents, so the total number of population who can be surveyed is 1596. In terms of the subject nature and service influence of public colleges and universities, they account for the largest proportion and have great development potential in China's higher education, and are related to the era and future health. (China Education Online,2023)

3.2 Study sample

The research samples were by Quota sampling, and the analysis units were divided into university or college categories. Determining the sample size using calculation formulas.(Yamane,1973 quoted in Chaokromthong 2021), The survey was conducted among 1,596 people from 399 Chinese public universities' sports discipline leadership teams, with a margin of error of 5 percent. According to the formula calculation, at least 320 respondents should be selected for the study. In actual operation, the data are collected from online

questionnaires, and the actual sample may be reduced. In order to ensure the overall effectiveness of the study, the number of respondents by 40% will be increased. The final number of respondents was $320 + (320 \times 0.4) = 448$ (Kanlaya, 2006).

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

Which n = sample size

N = population size = 1596

e = error (0.05) reliability level 95%

4. Research results

4.1 The result of basic information display from Sample group

This study mainly surveyed 448 leaders of sports colleges in China by means of quota sampling, and described the basic information of the samples, which is helpful for more specific interpretation of data characteristics in the analysis. Specific statistical results are shown in Table 2

Table 2 Description of basic characteristics of respondents (N=448)

Characteristic		Number	Percentage(%)
Gende	Male	379	84.6
	Female	69	15.4
Age	31 - 40 years old	97	21.7
	41 - 50 years old	270	60.3
	51 - 60 years old	81	18.1
The category of the work unit	University	224	50.0
	College	224	50.0
The name of the leader in your position	The dean of the college	224	50.0
	Secretary of the General Party Branch	224	50.0
How long have you been working in your current leadership position	Under 3years	36	8.0
	3-5years	85	19.0
	6-10years	204	45.5
	Over10 years	123	27.5
Categories of sports that you participated in before you started working	Ball	226	50.4
	Dance	15	3.3
	Track and field	160	35.7
	Martial arts	35	7.8
	other categories	12	2.7

4.2 Descriptive statistics of relevant variables

The observed variables in this study are mainly composed of two sections. The scales, dimensions and levels of measurement items such as transformational leadership, behavior performance are described and statistically by means of mean value and standard deviation. The description results of scales and dimensions are shown in Table 3

Table 3 Descriptive statistics of mean and standard deviation of variables (N=448)

Second-order latent variable	First order latent variable	Number of Questions	Mean	Standard Deviation	Interpretation
Transformational leadership	Idealization influence	4	3.72	0.81	High
	Inspirational motivation	4	3.21	0.85	medium
	Intellectual stimulation	4	3.15	0.86	medium
	Individual consideration	4	3.33	0.84	medium
	Transformational leadership	16	3.35	0.58	medium
Behavioral performance	Task-self-efficacy	3	3.55	0.78	High
	Domain-self-efficacy	3	3.53	0.82	High
	Situation-self-efficacy	3	3.55	0.85	High
	Execution-self-efficacy	3	3.07	0.86	medium
	Behavioral performance	12	3.43	0.67	High

4.3 Reliability analysis of scale

Reliability mainly measures the reliability of the scale measurement. The higher the reliability of the scale measurement, the lower the standard error of the measurement and the higher the internal consistency and stability of the measurement. The reliability of the scale and dimension is measured by Cronbach's Alpha coefficient. Reliability is acceptable, and when Cronbach's Alpha is higher than 0.8, reliability is ideal. The reliability of the item is measured by the correlation between the revised item and the total. When the correlation between the item and the total is higher than 0.5, it indicates that the reliability of the item is good.

4.3.1 The reliability test of transformational leadership scale

The reliability test results of transformational leadership scale are shown in Table 4 Cronbach's Alpha of the scale is 0.880, indicating that the overall reliability of the scale is ideal. Cronbach's Alpha of the idealized influence is 0.853, and the correlation between the corrected term and the total is within the range of 0.617~0.783. Cronbach's Alpha of inspirational motivation was 0.895, and the correlation between the corrected items and the total was within the range of 0.747~0.777.

Table4 Discriminatory Power and Reliability of the Measurement of the Transformational leadership

latent variable	Observable Variable	Corrected Item Total Correlation	Cronbach's Alpha	Scale Cronbach's Alpha
Idealization influence (II)	II1	0.769	0.853	0.880
	II2	0.617		
	II3	0.783		
	II4	0.619		
Inspirational motivation (IM)	IM1	0.777	0.895	0.880
	IM2	0.770		
	IM3	0.774		
	IM4	0.747		
Intellectual stimulation (IS)	IS1	0.723	0.866	

	IS2	0.732	
	IS3	0.695	
	IS4	0.712	
	IC1	0.755	
Individual consideration (IC)	IC2	0.780	0.891
	IC3	0.790	
	IC4	0.720	

Cronbach's Alpha for intellectual stimulation was 0.866, and the correlation between the corrected items and the total was within the range of 0.695~0.732. Cronbach's Alpha for individual consideration was 0.891, and the correlation between corrected items and total was within the range of 0.720~0.790. The above tests show that the transformational leadership scale has ideal reliability and high reliability and stability.

4.3.2 Reliability Test of the Behavioral Performance Scale

The reliability test results of the behavioral performance scale are shown in Table 5 Cronbach's Alpha of the behavioral performance scale is 0.918, indicating that the overall reliability of the scale is ideal. Cronbach's Alpha for attitude of Task-self-efficacy was 0.892, and the correlation between corrected items and total value was within the range of 0.750~0.816. Cronbach's Alpha for Domain-self-efficacy was 0.861, and the correlation between corrected items and total was within the range of 0.665~0.812. Cronbach's Alpha of Situation-self-efficacy was 0.928, and the correlation between corrected items and total was within the range of 0.823~0.876. Cronbach's Alpha of the execution-self-efficacy was 0.869, and the correlation between the revised items and the total was within the range of 0.706~0.825. The above tests indicated that the measurement of behavioral performance scale had ideal reliability and high measurement reliability.

Table 5 Discriminatory Power and Reliability of the Measurement of the Behavioral performance

latent variable	Observable Variable	Corrected Item Total Correlation	Cronbach's Alpha	Scale Cronbach's Alpha
Task-self-efficacy (TSE)	TSE1	0.802	0.892	0.918
	TSE2	0.816		
	TSE3	0.750		
Domain-self-efficacy (DSE)	DSE1	0.665	0.861	
	DSE2	0.812		
	DSE3	0.748		
Situation-self-efficacy (SSE)	SSE1	0.823	0.928	
	SSE2	0.859		
	SSE3	0.876		
Execution-self-efficacy (ESE)	ESE1	0.723	0.869	
	ESE2	0.825		
	ESE3	0.706		

4.4 Confirmatory factor analysis

A confirmatory factor analysis model was used to test the structural validity of each scale measurement, and a confirmatory factor analysis model was built through Advance statistics program software. If the fitting parameters of the model met the test criteria, it indicated that the scale had a good measurement effect. The structural validity of factor measurement is assessed through two main aspects: convergence validity and discriminant validity. Convergence validity primarily evaluates the extent to which observed variables accurately represent underlying constructs. The Standard Regression Weight (λ) > 0.6, Average Variance Extracted(AVE) > 0.5, combined reliability (Construct) were obtained Reliability(CR) > 0.7) for testing; Discriminant validity mainly measures the degree to which a factor in the scale is different from other factor

dimensions. Based on the Fornell-Larcker criterion evaluation, if the mean extraction variance (AVE) arithmetic square root of the factor dimension is greater than the correlation coefficient between the dimension and other dimensions, it indicates that the factor has good discriminant validity.

4.4.1 First order confirmatory factor analysis of transformational leadership scale

The transformational leadership scale contains 4 first-order potential variables and 16 observed variables. A 4-factor first-order confirmatory factor analysis model was constructed through Advance statistics program, and the observed variables were brought in and fitted. The fitting results of the confirmatory factor analysis model are shown in Figure 2. The goodness of fit test of the model was shown in Table 6. The χ^2/df of the model was 1.202, lower than 3. The RMSEA and SRMR values were 0.021 and 0.027 respectively, both lower than 0.08. The values of GFI, CFI, NFI, and RFI were 0.969, 0.995, 0.971, and 0.964, respectively, all higher than 0.9. The first-order confirmatory factor analysis model of transformational leadership had better goodness of fit and better effect of factor measurement.

Table6 Confirmatory Factor Analysis Model Fit Test for Transformational Leadership

Index	χ^2	df	χ^2/df	GFI	CFI	RMSEA	SRMR	NFI	RFI
Standard criteria	117.824	98	1.202	0.969	0.995	0.021	0.027	0.971	0.964
Results			<3	>0.9	>0.9	<0.08	<0.08	>0.9	>0.9

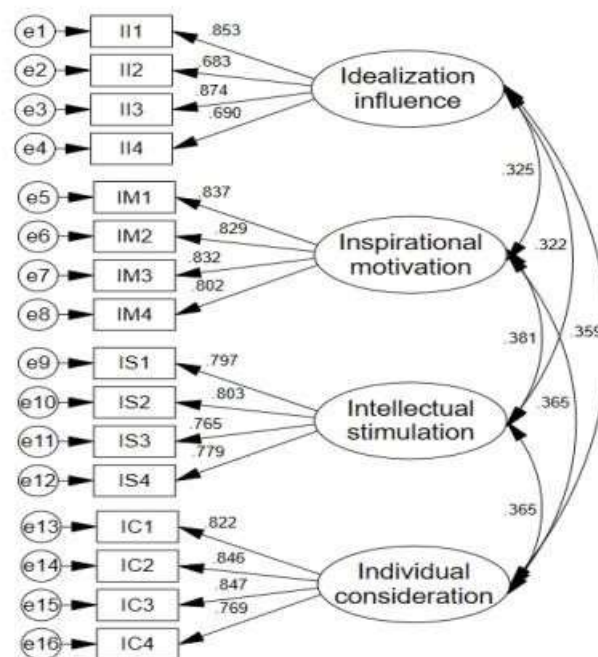


Figure2 Figure of fitting results of the transformational leadership first-order confirmatory factor analysis model

4.4.2 Confirmatory factor analysis of behavior performance

The behavioral performance scale contains 4 first-order potential variables and 12 observed variables. A 4-factor first-order confirmatory factor analysis model was constructed by Advance statistics program, and the observed variables were brought in and fitted. The fitting results of the confirmatory factor analysis model are shown in Figure 3. The goodness of fit test of the model was shown in Table 7. The χ^2/df of the model was 2.080, lower than 3. The RMSEA and SRMR values were 0.049 and 0.036 respectively, both lower than 0.08. The values of GFI, CFI, NFI and RFI were 0.965, 0.987, 0.975 and 0.965 respectively, all higher than 0.9. The first-order confirmatory factor analysis model of behavioral performance had good goodness of fit and good effect of factor measurement.

Table 7 Confirmatory Factor Analysis Model Fit Test for Behavioral performance

Index	χ^2	df	χ^2/df	GFI	CFI	RMSEA	SRMR	NFI	RFI
Standard criteria	99.849	48	2.080	0.965	0.987	0.049	0.036	0.975	0.965
Results			1~3	> 0.9	> 0.9	< 0.08	< 0.08	> 0.9	> 0.9

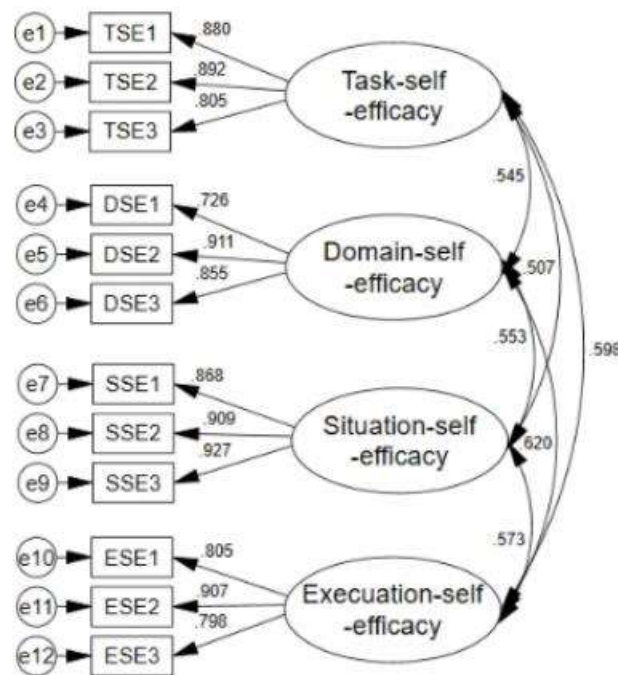


Figure3 Figure of fitting results of the Behavioral performance first-order confirmatory factor analysis model

4.5 Comprehensive confirmatory factor analysis model

According to the comprehensive confirmatory factor analysis model, the correlation among the potential variables in the study was obtained, and the results were shown in Table 8. There was a significant positive correlation between the factors of transformational leadership and the factors of planning behavior, and the correlation coefficient r was 0.402~0.493, $P < 0.001$; There was also significant positive correlation between behavioral performance and transformational leadership and planning behavior, and the correlation coefficient r was 0.559~0.646, $P < 0.001$; The establishment of the relationship between the above factors proves that the theoretical model studied in this paper is possible to be established, and the structural equation model will be studied in the following. In addition, the correlation coefficient among the factors of transformational leadership was 0.323~0.380, $P < 0.001$, and the correlation coefficient r was lower than 0.7. The correlation coefficient between all factors of behavioral intention is 0.225~0.363, $P < 0.001$ correlation coefficient r is also lower than 0.7, indicating that there is no multicollinearity influence in the study of the model.

Table 8 Correlation between variables

	BP	II	IM	IS	IC
BP	1.000				
II	0.56***	1.000			
IM	0.591***	0.325***	1.000		
IS	0.589***	0.323***	0.38***	1.000	
IC	0.559***	0.36***	0.365***	0.364***	1.000

Note : *** $P < 0.001$, II= Idealization influence, IM= Inspirational motivation, IS=Intellectual stimulation, IC=Individual consideration, BP: Behavioral performance

Table9 shows the results of the main research influence relationships of structural equation model. the influence of transformational leadership on behavioral performance, in which idealized influence positively affects behavioral performance

($\beta=0.132$, C.R.=2.902, $P < 0.01$)

Table9 Structural Model Regression Analysis

Impact Path	Regression Weights	S.E.	C.R.	P	R ²
II→BP	0.132	0.031	2.902	0.004	
IM→BP	0.134	0.032	2.858	0.004	
IS→BP	0.134	0.034	2.811	0.005	0.725
IC→BP	0.093	0.033	2.004	0.045	

Note : ***P < 0.001,II= Idealization influence, IM= Inspirational motivation,

IS=Intellectual stimulation, IC=Individual consideration, BP=Behavioral performance

The total effect of idealized influence on behavior performance was 0.276, 95%CI was [0.199, 0.354]. The total mediating effect of idealized influence on behavior performance was 0.144,95%CI was [0.084, 0.204], idealized influence can direct effect on behavior performance is 0.132,

The total effect of Inspirational motivation on behavior performance was 0.295, 95%CI was [0.211, 0.384]. The total mediating effect of Inspirational motivation on behavior performance was 0.161,95%CI was [0.101, 0.235], Inspirational motivation are direct effect on behavior performance was 0.134,95%CI was [0.033, 0.241].

The total effect of Intellectual stimulation on behavior performance was 0.290, 95%CI was 0.195, 0.376. The total mediating effect of Intellectual stimulation on behavior performance was 0.156,95%CI was [0.099, 0.224], and the direct effect of Intellectual stimulation on behavior performance was 0.134,95%CI was [0.034, 0.232].

The total effect of individual consideration on behavior performance was 0.238, 95%CI was [0.156, 0.32]. The total mediating effect of individual consideration on behavior performance was 0.145,95%CI was [0.089, 0.211], Individual consideration direct effect on behavior performance was 0.093,95%CI was [0.013, 0.177].

5. Conclusion and suggestion

The most valuable indirect effect variable in behavioral performance is transformative leadership through personalized care. Idealized influence has the lowest value of influencing behavior performance through planned behavior. Quantitative data analysis is used to discuss the results of this study, and the specific results are analyzed as follows:

5.1 The level of behavioral performance

The results show that all the factors of leadership behavior performance are high in higher education physical education colleges in China. Leaders showed higher control ability in task effectiveness, domain effectiveness, situation effectiveness and executive effectiveness, which showed similar behavior performance level compared with other countries' college leaders in the world. According to the analysis of the influence degree of transformative leadership level on behavioral performance, intellectual support has the lowest influence level on behavioral performance, but throughout the situation of transformative leadership level, conscious planned behavioral intervention can better influence behavioral performance level.

5.2 The Factors Effecting Behavior Performance

The analysis shows that the level of behavior performance is greatly affected by behavior intention. Therefore, in the process of cultivating behavioral performance level, it is necessary to pay attention to the leader's personal charm, personalized motivation, intellectual support, and personalized consideration ability. At the same time, on the basis of these factors, attention should be paid to the leader's attitude toward a certain thing, the degree of subjective norms in the process of dealing with problems, and the ability to feel and control in the face of problems. At the same time, the level of behavioral performance is affected by the regional education policy, the overall economic level, and the degree of attention and investment of higher education authorities in education. These factors jointly affect the play of behavioral performance. Through the analysis, it is shown that shaping the leader's personal feeling control in management can well promote the play of leadership level, and realize the improvement of leadership behavior performance by using the complementary combination of external and internal factors.

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References

1. Bass, B. M., & Avolio, B. J. (1994). *Improving organizational effectiveness through transformational leadership*. sage.
2. Bass, B. M., & Riggio, R. E. (2006). Transformational leadership.
3. Danişman, Ş., Tosuntaş, Ş. B., & Karadağ, E. (2015). The effect of leadership on organizational performance. *Leadership and organizational outcomes: Metaanalysis of empirical studies*, 143-168.
4. Davies, J., Hides, M., & Casey, S. (2001). Leadership in higher education. *Total Quality Management*, 12(7-8), 1025-1030.
5. Dedaj, Z. (2017). The effect of transformational leadership approach in organizations. *Econ. Bus. J*, 11, 191-199.
6. Deschamps, C., Rinfret, N., Lagacé, M. C., & Privé, C. (2016). Transformational leadership and change: How leaders influence their followers' motivation through organizational justice. *Journal of Healthcare Management*, 61(3), 194-213.
7. Edmondson, A. C. (2003). Speaking up in the operating room: How team leaders promote learning in interdisciplinary action teams. *Journal of Management Studies*, 40(6), 1419-1452.
8. Herman, H., & Chiu, W. C. (2014). Transformational leadership and job performance: A social identity perspective. *Journal of Business Research*, 67(1), 2827-2835.
9. Hersey, P., & Blanchard, K. H. (1969). Life cycle theory of leadership. *Training & Development Journal*.
10. Jalilvand, M. R., & Samiei, N. (2012). The impact of electronic word of mouth on a tourism destination choice: Testing the theory of planned behavior (TPB). *Internet research*, 22(5), 591-612.
12. Kirkpatrick, S. A., & Locke, E. A. (1991). Leadership: do traits matter? *Academy of management perspectives*, 5(2), 48-60.
13. Liu, Z., Geng, R., Tse, Y. K., & Han, S. (2023). Mapping the relationship between social media usage and organizational performance: A meta-analysis. *Technological Forecasting and Social Change*, 187, 122253. <https://doi.org/https://doi.org/10.1016/j.techfore.2022.122253>
14. Lou, J., & Wang, S. (2008). *Public finance in China: reform and growth for a harmonious society*. World Bank Publications.
15. Marginson, S. (2007). Global university rankings. In *Prospects of higher education* (pp. 79-100). Brill.
16. Meyer, M. (2003). Academic entrepreneurs or entrepreneurial academics? Research-based ventures and public support mechanisms. *R&D Management*, 33(2), 107-115.
17. Niu, D., Jiang, D., & Li, F. (2010). Higher education for sustainable development in China. *International Journal of Sustainability in Higher Education*, 11(2), 153-162.
18. Samad, S. (2012). The influence of innovation and transformational leadership on organizational performance. *Procedia-Social and behavioral sciences*, 57, 486-493.
19. Spies, L. A., Gray, J., Opollo, J. G., Mbalinda, S., Nabirye, R., & Asher, C. A. (2018).
20. Transformational leadership as a framework for nurse education about hypertension in Uganda. *Nurse Education Today*, 64, 172-174.
21. <https://doi.org/https://doi.org/10.1016/j.nedt.2018.02.009>
22. Stewart, J. (2006). Transformational leadership: An evolving concept examined through the works of Burns, Bass, Avolio, and Leithwood. *Canadian Journal of Educational Administration and Policy*(54).
23. Stogdill, R. M. (1948). Personal factors associated with leadership: A survey of the literature. *the Journal of Psychology*, 25(1), 35-71.
24. Warner, M. (2009). The SAGE Handbook of Organisational Behavior: Vol 1 MicroApproaches. In: SAGE PUBLICATIONS LTD 1 OLIVERS YARD, 55 CITY ROAD, LONDON EC1Y 1SP, ENGLAND.
25. Wei, F., Abbas, J., Alarifi, G., Zhang, Z., Adam, N. A., & Queiroz, M. J. d. (2023). Role of green intellectual capital and top management commitment in organizational environmental performance and reputation: Moderating role of pro-environmental behavior. *Journal of Cleaner Production*, 405, 136847.
26. <https://doi.org/https://doi.org/10.1016/j.jclepro.2023.136847>
27. Zhuravleva, N. A., & Poliak, M. (2022). *Green transformational leadership and green growth*. IntechOpen London, UK.