

# Coaches' leadership behavior, motivational atmosphere and athletes' motivational internalization: the perspective of self-determination theory

Haizhen Huang<sup>1</sup>, Qian Zhang<sup>2</sup>, Maozhu Jin<sup>1\*</sup>

## Abstract

**Objective:** The objective of this study is to examine the leadership behaviour of coaches and the relationship between the mastery motivational atmosphere and the respective sub-dimensions of basic psychological needs. This is done with a view to better solve the path selection and optimization problem noted in coaches' leadership behaviour's effectiveness based on the self-determination theory.

**Methods:** This research focuses on volleyball players and uses the maximum likelihood method to estimate the hypothetical model by carrying out the path coefficient significance test.

**Results:** In the incentive atmosphere of cooperative learning, athletes will continue to find problems, correct mistakes, and improve their understanding of training and competition. Therefore, it is reasonable to assume that the training-related guidance of coaches plays a key role in the construction of an incentive atmosphere of cooperative learning.

**Conclusion:** The coaches' positive behaviours, tolerance of failure, and encouragement of attempts can help build a task-oriented motivational atmosphere, and through the transfer of athletes to realize the internalization of external incentives, athletes show a positive behaviour orientation.

**Keywords:** leadership behaviour; motivational atmosphere; self-determination theory perspective.

## Introduction

Coaches of various sports teams are not only training players, but they are also playing the role of a leader. Their leadership role has key importance for players (López-Gajardo et al., 2021) because it is important to promote players performance. Along with training activities, coaches lead the players through stimulating positive intention and passion to achieve success in a competition. In the recent decade, competition in the sports is increasing (Li, 2022) because of the increase in the number of teams and performance of teams is also improving which requires the players to be more motivated as well as to develop superior skills to win the competition. In this direction, the role of coaches has vital importance in terms of training team players and generating motivation to win tough competitions. This is important in the context of sports because the motivation of individual players is essential to winning any competition.

In this scenario, the coaches' behavior holds most importance with the team players (Rodrigues et al., 2020). Most importantly, the coaches' leadership behavior has key influence on players (Perera, 2019). Volleyball is one of the most popular games worldwide with competition held globally. In volleyball, the role of coaches is essential to

better and improved performance. A positive behaviour of coaches with the players is important for quality performance. However, negative or rude behaviour of coaches cannot or is less likely to yield better results in terms of performance. The role of coaches in relation to leadership is important which is primarily based on behaviour. Various coaches do not behave according to the players' requirements or expectations which limits the learning of players. Similarly, in other games, the leadership role of coaches is key to get success in competitions.

The single most important factor which lead to the failure of teams in competition is lack of a motivational atmosphere. The motivational atmosphere (Keegan et al., 2010) is particularly lacking among volleyball teams. The lack of motivational atmosphere leads to lower levels of performance among players in any competition which causes a decrease in overall performance. A motivational atmosphere is an atmosphere (Slåttsveen et al., 2018) which instils confidence among the players, ensuring their better performance in ground. This type of atmosphere always leads to team success during matches. Motivation is a real force which promotes higher performance in any field; however, low level of motivation among individuals causes a decrease in performance. Therefore, the coaches must

<sup>1</sup> Business School, Sichuan University, Chengdu, 610064, China

<sup>2</sup> Economic and Management School, Chengdu Agricultural College, Chengdu 610064, China

\* Corresponding Author's Email: jinmaozhu@scu.edu.cn.

show better leadership behaviour to create a motivational atmosphere for athletes. Additionally, athlete motivation internationalization is also important. The "internalization of motivation" refers to the realization of the basic psychological needs of athletes through the perception. Therefore, this study examined the relationship between coaches' leadership behavior, motivational atmosphere and motivational internationalization which is connected with the self-determination theory. Finally, the objective of this study is to examine the leadership behavior of coaches and the relationship between the mastery motivational atmosphere and the respective sub-dimensions of basic psychological needs with a view to better solve the path selection and optimization problem of coaches' leadership behavior's effectiveness based on the self-determination theory.

## Literature Review

Coaches leadership in sports holds key importance (Solomon & Malik, 2022) as the leadership of coaches is the most important link in modern sports competition (González-García et al., 2021). Some people even think that the competition of modern sports team events is not so much the competition of athletes as it is the embodiment of the leadership roles/values of coaches. Former US President John F. Kennedy once described leadership in this way: Leadership is to make others be willing to work for you. Therefore, the performance of coaches' leadership (Ekstrand et al., 2018) depends on athletes' perception of leadership, and the incentive atmosphere created by coaches in training competitions is the filter and catalyst linking coaches' leadership and athletes' perception of leadership behaviour, and an important factor influencing coaches' coaching ability and team effectiveness. In the practice of team sports, coaches often lament why the performance of coaches' leadership varies greatly when the innate conditions, technical and tactical training content and time of players are almost the same. Although different coaches often have different attributions to their problems, they ultimately point to the athletes. Athletes' "let me practice", "should practice" and "I want to practice", as well as their desire to participate in the competition are some of the key factors affecting the effectiveness of coaching styles. All coaches want their players to increase their motivation to participate (Mertens et al., 2018) and show an "I want to practice" state. All coaches try to influence athletes through their own behaviours, so that athletes can improve their participation in sports and present a state of "I want to practice". This involves the internalization of athletes' motivation. The so-called "internalization of motivation" refers to the

realization of the basic psychological needs of athletes through the perception, transfer and integration of the external environment under a goal-oriented adjustment. The process of improving self-determination motivation refers to the degree of self-integration (self-determination) of athletes through the combination of a reading of the environment created by coaches' leadership behaviour and their own needs. Incentive atmosphere is an environment that affects sports structure and the interaction between coaches and athletes. It plays a mediating role in coaches' leadership behaviour and athletes' psychological perception, emotion and behaviour choice. Moreover, this influence is more significant in team sports and therefore, more worthy of study. According to the achievement goal theory (Heitmann et al., 2022), the athletes' mental activity and behaviour choice such as effort degree and sense of achievement are influenced by the incentive mode. Social cognitive theory also points out that athletes' perception of coaches' leadership behaviour affects athletes' perception behaviour through stimulating atmosphere. According to the literature, coaches' positive feedback has a comprehensive impact on the task-based motivational atmosphere through the analysis of the leadership behaviour of professional volleyball team coaches on the task-based motivational atmosphere, Although the weight of positive feedback on the various dimensions of the incentive atmosphere is not high, it has a significant impact on cooperative learning, skill improvement and role identification in an incentive atmosphere, and is therefore, the most important aspect of coaches' leadership behaviour.

Coach feedback is considered to be encouraging and supportive based on help or punishment, a collection of actions known as strategies (Dolidze, 2015). Positive encouragement makes athletes feel that the coaches value the development of individual athletes, especially at the competitive level for special skills, tactics, strategies, etc., personalized guidance and feedback. If the coaches are positive, information-rich feedback is more direct than empty expectations or visions, and more concrete in terms of stimulating the development of athletes. Athletes generate trust and respect for coaches through coaches' encouragement, praise and other feedback behaviours, making the relationship between them more harmonious. Bleich, M. R and others believe that the coach's leadership behaviour and the athlete's behaviour orientation are a dynamic and continuous process, therefore, the interaction between them is an important link to maintain this process. In this interaction, it is believed that the effectiveness of coaches' behaviour is affected by the athlete's

attribution, with their cognition and emotion being the filters formed by their coaches' leadership behaviour perception and personal attitudes (Yuan et al., 2019). Through each other's thoughts, the interactive communication of feelings and actions enables athletes to form positive cognition and emotions, and on the basis of an improved relationship between the two parties, the team's tasks and goals are aligned and a sense of belonging is achieved. On the basis of the current research, this study takes volleyball players as the object, uses the maximum likelihood method to estimate the hypothesis model, and conducts the path coefficient significance test. The influence of coaches' leadership behaviour, incentive atmosphere and athlete's motivation internalization are analysed. Both absolute fitting index and relative fitting index indicate that the hypothesis model fits well. In terms of the influence of coaches' leadership behaviour on task-oriented incentive atmosphere, democratic behaviour of coaches, positive feedback and training guidance have significant positive effects on cooperative learning incentive atmosphere, and in particular, training guidance has the most prominent effect. The leadership behaviour of coaches is closely related to the formation of a task-oriented incentive atmosphere. Positive feedback has an important influence on the dimensions of task-based incentive atmosphere. Coaches' positive behaviour, tolerance of failure and encouragement of trying can help build a task-oriented incentive

atmosphere, and internalize external motivation through athletes' transfer, so that athletes can show a positive behaviour orientation. According to the path and weight of the total effect of inspection: Social support, training, guidance and positive feedback behaviour affect a motivational climate for character recognition. A motivational climate for role identity is the decisive factor of the sense of belonging, and on the basis of the character recognition through the sense of belonging to shape, it is possible to help athletes improve satisfaction, therefore, strengthening of training efforts will improve (Priest et al., 2018).

## Methodology

### Selection and description of research objects

The volleyball players in this study are the research objects of 16 men's teams in the 361° volleyball competition, and 14 women's teams. A total of 600 questionnaires were collected for each of the 14 male and female teams of the youth volleyball championship. There were 413 valid questionnaires, with an effective rate of 68.8%. Among them, 215 are male athletes and 199 are female athletes. 122 male athletes in the 361° volleyball championship, where there are 107 female athletes. 93 male athletes in the youth group, where there are 93 female athletes. The main players accounted for 42.8%, and the substitutes accounted for 27.4%, which is between the main players and the substitutes. See Table 1 below.

**Table 1**

#### *Information of Volleyball Players*

Type	361° Volleyball Championship	Youth group	Total people
Man	122	93	215
Women	107	93	200

### Measuring tools

**Coach Leadership Behaviour Scale:** The Coach's Leadership Behaviour Scale is modified by combining the scale of the multi-dimensional leadership model. Due to authoritarian behaviour in most studies, both proved to be negatively related to the formation of an incentive atmosphere and athletes' positive behavioural orientation; therefore, this study only selected four dimensions of training guidance, that is, democratic behaviour, social support, and positive feedback. The  $\alpha$  coefficients are 0.613, 0.747, 0.629 and 0.634, respectively.

**Task-oriented Motivation Distress Scale:** The task-oriented motivational atmosphere is modified according to the PMCSQ-2 movement perception motivational

climate questionnaire. It consists of three dimensions; cooperative learning, skill improvement and role identification. The  $\alpha$  coefficients are 0.703, 0.726 and 0.797, respectively.

**Sense of Belonging Scale** Belonging Scale: The items are revised according to Richerand Vallerand's FRS Sense of Belonging Scale. Its  $\alpha$  coefficient is 0.707.

**Athlete Behaviour Tendency Scale:** Athletes' satisfaction, effort level and tendency to stay on the team draw lessons from the sport goal vector scale and satisfaction scale. The  $\alpha$  coefficients are 0.765, 0.804 and 0.750, respectively. All questionnaire items are evaluated using the Likert numerical method where 1 means strongly disagree, 5 means strongly agree. See Table 2 below.

Table 2

Measurement tool dimension  $\alpha$  coefficient values

Measuring tools/dimensions	Coach Leadership Behavior Scale	Task-oriented motivational mood scale	Sense of Belonging Scale Attribution scale	Athlete Behavioral Tendency Scale
	$\alpha$ factor			
Democratic behavior, social support, positive feedback	0.613、0.747、0.629、0.634			
Cooperative learning, skill improvement and role recognition		0.703、0.726、0.797		
FRS sense of belonging			0.707	
Athlete satisfaction, effort level and tendency to stay on the team				0.765、0.804、0.750

### Data processing

The input, management, and statistical analysis of questionnaire data are processed by SPSS170 software package. This allows the study to calculate the consistency coefficient and factor loading of each subscale and use AMOS180 software to fit the hypothetical model and analyse the path (Lee et al., 2017).

## Results and analysis

### Hypothetical model fit test

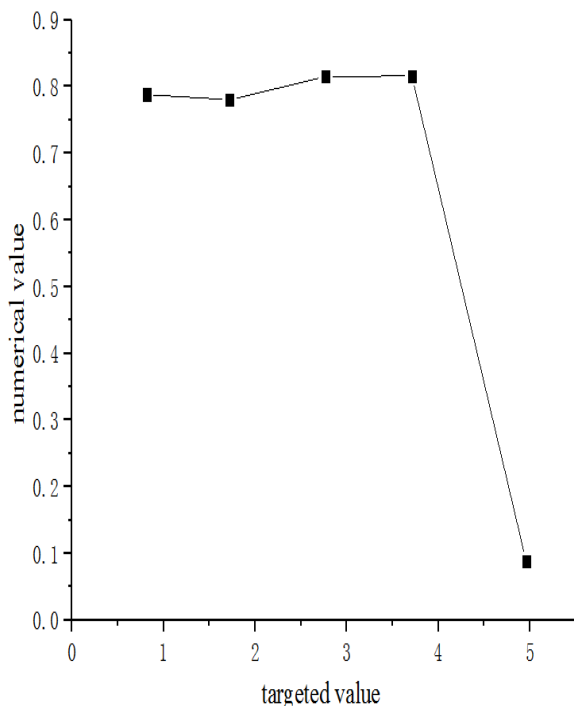


Figure .1 Hypothetical model goodness of fit statistics

In this study, Amos180 was used, and the maximum likelihood method was used to estimate the hypothetical model. The fitting result in Figure 1 shows that the CMIN/DF value is  $3.073 < 5$ , indicating that the fitting effect is better; The RMSEA value of the model is 0.078, which is less than 0.1, and within an acceptable range; The values of GFI, NFI and CFI are 0.788, 0.760 and 0.824 respectively, which are all greater than 0.75 and close to 1. Both, the absolute fit index and the relative fit index, indicate that the hypothetical model fits well (Le Comte & McClelland, 2017).

Assuming the model, the fitting results show that, the CMIN/DF value is  $3073 < 5$ , indicating that the fitting effect is better, as shown in Figure 1; Significance test of path coefficients shows that in terms of the impact of coaches' leadership behaviour on task-oriented incentives, the democratic behaviour of coaches, positive feedback and training guidance have a significant positive effect on the motivational atmosphere of cooperative learning (standardized coefficients are 0.419, 0.419 and 0.579 respectively,  $P < 0.01$ ); among them, the influence of training guidance is the most obvious, as shown in Table 3.

### Significance test of path coefficient

In the structural equation, the criterion for judging whether the regression coefficient is significantly different from zero is when the critical ratio is greater than or equal to 1.96, and the regression coefficient can be determined to be significantly different from zero at a significance level of 0.05. The relationship between the variables is shown in Table 3.

Table 3

## Path Inspection

Hypothetical path	SE	CR	Standardized path coefficient estimation	Hypothetical test
Cooperative learning ← democratic behavior	0.055	7.751	0.430	Support
Cooperative Learning←Social Support	0.054	1.169	0.059	Not support
Cooperative learning ← positive feedback	0.063	6.539	0.428	Support
Cooperative learning ← training guidance	0.081	7.248	0.601	Support
Skill improvement ← democratic behavior	0.062	8.335	0.501	Support
Skills Up←Social Support	0.063	4.351	0.301	Support
Skill improvement ← positive feedback	0.053	4.666	0.261	Support
Skills Up ← Training Guidance	0.069	6.270	0.431	Support
Role identification ← democratic behavior	0.054	1.704	0.089	Not support
Role recognition ← social support	0.081	4.799	0.399	Support
Role recognition ← positive feedback	0.067	5.101	0.351	Support
Role recognition ← training guidance	0.071	3.889	0.291	Support
Sense of belonging ← cooperative learning	0.121	1.798	0.224	Not support
Sense of belonging ← skill improvement	0.132	-0.039	-0.004	Not support
Sense of belonging ← role identification	0.095	9.587	0.799	Support
Satisfaction ← a sense of belonging	0.085	9.800	0.865	Support
Propensity to work ← a sense of belonging	0.085	8.311	0.675	Support
Willingness to stay in the team ← a sense of belonging	0.104	9.999	1.025	Support

As shown in Table 3 path inspection: In terms of the impact of coaches' leadership behaviour on task-oriented incentives, the democratic behaviour, positive feedback and training guidance of coaches have a significant positive effect on the incentive atmosphere of cooperative learning; among them, the influence of training guidance is the most obvious (Zhang et al., 2016). However, social support has no significant impact on the incentive atmosphere of cooperative learning; All the leadership behaviours of coaches have a significant positive effect on the motivational atmosphere of skill improvement; among them, the influence of democratic behaviour and training guidance is the most obvious. Coaches' social support, positive feedback and training guidance have a significant positive effect on the role recognition and motivational atmosphere; among them, social support and positive feedback have the most obvious influence; In terms of the influence of the motivational atmosphere on the sense of belonging, the two dimensions of the motivational atmosphere of cooperative learning and skill improvement have no obvious influence on the sense of belonging ( $P > 0.01$ ), and the role identity has a significant impact on the sense of belonging. At the same time, path analysis shows that the sense of belonging has a significant effect on athlete satisfaction, sports enthusiasm, willingness to work hard, and tendency to stay on the team (Vansteenkiste et al., 2018).

#### **Coaches' democratic behaviour, positive feedback and training guidance have a significant impact on the incentive atmosphere of cooperative learning**

In modern sports competitions, athletes' understanding of coaches' coaching concepts and training methods has become a key factor influencing training effects and competition results, and cooperative learning provides a way and a solution for the implementation of coaches' leadership behaviour. Volleyball is a highly interdependent team project where the coaches use democracy and positive feedback, actively train and guide athletes. The mutual communication and learning and collaboration behaviour between the team provides a realistic basis for the incentive atmosphere of cooperative learning. Athletes are in a cooperative and stimulating learning atmosphere, and will continue to find problems, correct mistakes, and improve the understanding of training and competition. Therefore, it is not difficult to theorise that the coaches' training and guidance plays the most key role in the construction of the cooperative learning stimulating atmosphere.

#### **Coaches' leadership behaviour has a significant impact on the motivational atmosphere for skill improvement**

The volleyball project is used as a net-to-net confrontation skill project, where skills occupy the most important position in modern volleyball events. The

training content, methods, and methods of coaches, all revolve around the improvement of skills. It can be said that the improvement of skills is a concentrated expression of the comprehensive quality of athletes, and is the decisive factor of modern volleyball in terms of determining the outcome of the game. In the traditional training process, coaches tend to punish and scold the authoritarian coaching behaviour. Today's society has been unable to show the desirable level or amount recognition for athletes. The development of contemporary society's "people-oriented" approach has been deeply rooted in the hearts of the people; a motivational atmosphere for the improvement of athletes' skills requires the active creation of comprehensive supportive behaviours by coaches. The coaches' leadership behaviours such as democracy, training guidance, positive feedback, and social support are elements of the coaches' support behaviour. With these supportive behaviours, athletes are more willing to cooperate with the work of coaches, from a passive executor to an active participant and decision maker. This kind of autonomous satisfaction further enhances the athlete's motivation to participate, inspire athletes to continuously pursue excellence, realize the eternal theme of higher, stronger, and faster competitive sports. During the coaching process, the coaches should strive to become good at targeting the individual characteristics of athletes or sports teams, take targeted supportive leadership behaviours, and create a stimulating atmosphere for skills upgrading.

#### **Coaches' social support, positive feedback and training guidance have a significant positive effect on the role recognition and motivational atmosphere**

Role identification is an athlete's subjective evaluation of self-efficacy, its position in the team, and team relationships. This value judgment is based on the affirmation of self-ability, the harmony of team relationships as well as the interpersonal relationships with the coach. Social support and positive feedback behaviours are expressions of the coach's empathy; in the process of training and guiding, the coach is able to deepen and strengthen the relationship between the two through caring for athletes' personal life status and skill development, making them clearly aware of their role position and helping them form a team identity. Although a number of studies have shown that this kind of attention has a significant impact on young athletes, even on the mature and skilled adult athletes, when the coach ignores the evaluation of their training game state, these athletes may exhibit increased frustration, happiness, and reduced personal performance.

#### **Incentive atmosphere internalized sense of belonging has positive and significant influence on athletes' behavioural orientation**

According to the characteristics of the interdependent volleyball team, athletes define themselves as players and internalize the characteristics and interests of the team into their own characteristics and interests, so as to generate a strong emotional sense of belonging to the team. According to the self-determination theory, the satisfaction of athletes' belongingness needs helps improve their motivation internalization. A large number of studies have shown that belonging has a positive impact on organizational (team) outcome variables such as job satisfaction, turnover rate, work motivation and satisfaction. It is pointed out that in a volleyball project, under the condition of high sense of belonging, athletes will team (team) beliefs, goals and values into the source of his, and bring positive self-evaluation and enhanced self-esteem, make the athlete voluntary described himself as a group into the team, the team hard for the team to do some useful things, show positive efforts, willingness and satisfaction.

#### **Path analysis of coaches' leadership behaviour and athletes' behaviour orientation**

Compared with individual sports events, volleyball team events pay more attention to cooperation, complementation, cooperation and role responsibility. No matter how good an individual player is, an effective offensive/defensive transition cannot take place without the support of other players. Therefore, the leadership responsibility of coaches is to create a task-based incentive atmosphere to influence athletes to constantly adapt their personalities and learn from each other through cooperation, learning and frequent communication, in order to improve individual skills and behaviour styles, enhance the recognition of their roles and team members, and thus build team cohesion and team effectiveness.

The prediction path of coaches' leadership behaviour to athletes' behaviour orientation reflects the causality of coaches' leadership effect. On the whole, it describes coaches' leading behaviour vis-a-vis task-oriented incentive atmosphere; athlete's motivation internalization; athlete's behaviour choice. Therefore, coaches' positive behaviours, such as tolerance of failure and encouragement of attempts, can help form task-oriented incentive atmosphere, and help internalize external motivation through athletes' transfer, so that athletes can show positive behaviour orientation. According to the path and weight of the total effect of inspection: social support, training, guidance and positive feedback behaviour affect the motivational climate for character recognition. It is important to note that a

motivational climate for role identity is the decisive factor in terms of creating a sense of belonging, and on the basis of the character recognition through the sense of belonging, athletes can improve satisfaction while strengthening of training efforts will also improve.

## Discussion

Coaches' leadership behaviour and athletes' behaviour orientation are a dynamic and continuous process, and the interaction between them is an important link to maintain this process. In this interaction, the effectiveness of coaches' behaviour is affected by athletes' attribution, and their cognition and emotion are the filters of their coaches' perception of leadership behaviour and personal attitude. Through mutual interaction of thoughts, feelings and actions, athletes can form positive cognition and emotion, and achieve consistency and sense of belonging of team tasks and goals on the basis of improved bilateral relations. The prediction path of coaches' leadership behaviour to athletes' behaviour orientation reflects the causality of coaches' leadership effect. On the whole, it delineates the following aspects: coach's leading behaviour -- task-oriented incentive atmosphere -- athlete's internalization of incentive -- athlete's behaviour choice. Therefore, coaches' positive behaviours, such as tolerance of failure and encouragement of attempts, can help lay the foundation of a task-oriented incentive atmosphere, and internalize external motivation through athletes' transfer, so that athletes can show positive behaviour orientation. According to the path and weight of the total effect of inspection: social support, training, guidance and positive feedback behaviour affect a motivational climate for character recognition. A motivational climate for role identity is the decisive factor of the sense of belonging, and on the basis of the character recognition through the sense of belonging will help athletes improve satisfaction, as well as strengthen training efforts.

## Conclusion

The coach's leadership behaviours such as democracy, training guidance, positive feedback, and social support are all part of the coaches' support behaviour. With these supportive behaviours, athletes are more willing to cooperate with the work of coaches from a passive executor to an active participant and decision maker. This kind of

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autonomous satisfaction further enhances the athlete's motivation to participate, inspires athletes to continuously pursue excellence, helping them realize the eternal theme of higher, stronger and faster competitive sports. Although this paper tries to reveal the internal laws of coaches' behavior and athletes' behavior tendency, due to the limitations of time and energy, this study only selects adult volleyball players as samples. Therefore, future research can further explore the motivation methods of young athletes. At the same time, innovation and morality as important variables of leadership behavior are also additional factors to consider. Finally, goal-oriented theory is also an important way of motivation internalization. Future research can introduce both intrinsic motivation and goal oriented as mediating variables and explore the relationship between the two.

## Implications

This study examined the relationship between coaches' leadership behaviour, motivational atmosphere and motivational internationalization which relates to the self-determination theory which is a particularly unique and interesting relationship, and has not been examined by previous studies. The role of coaches' leadership behaviour in creation of a motivational atmosphere among Volleyball team players is most important which is not considered by previous studies. Therefore, theoretically, this study contributes to literature by adding a new relationship related to Volleyball teams players, coaches' leadership, and motivation atmosphere. Several studies are carried out on Volleyball teams players (Martins et al., 2022; Masanovic et al., 2018), however, motivational atmosphere and coaches' leadership is rarely studied. Most importantly, this study also has significant practical implications. It is recommended that, Volleyball team coaches should improve their leadership behaviour to create a motivating atmosphere and to promote athlete's motivational internalization which may lead to better team performance.

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